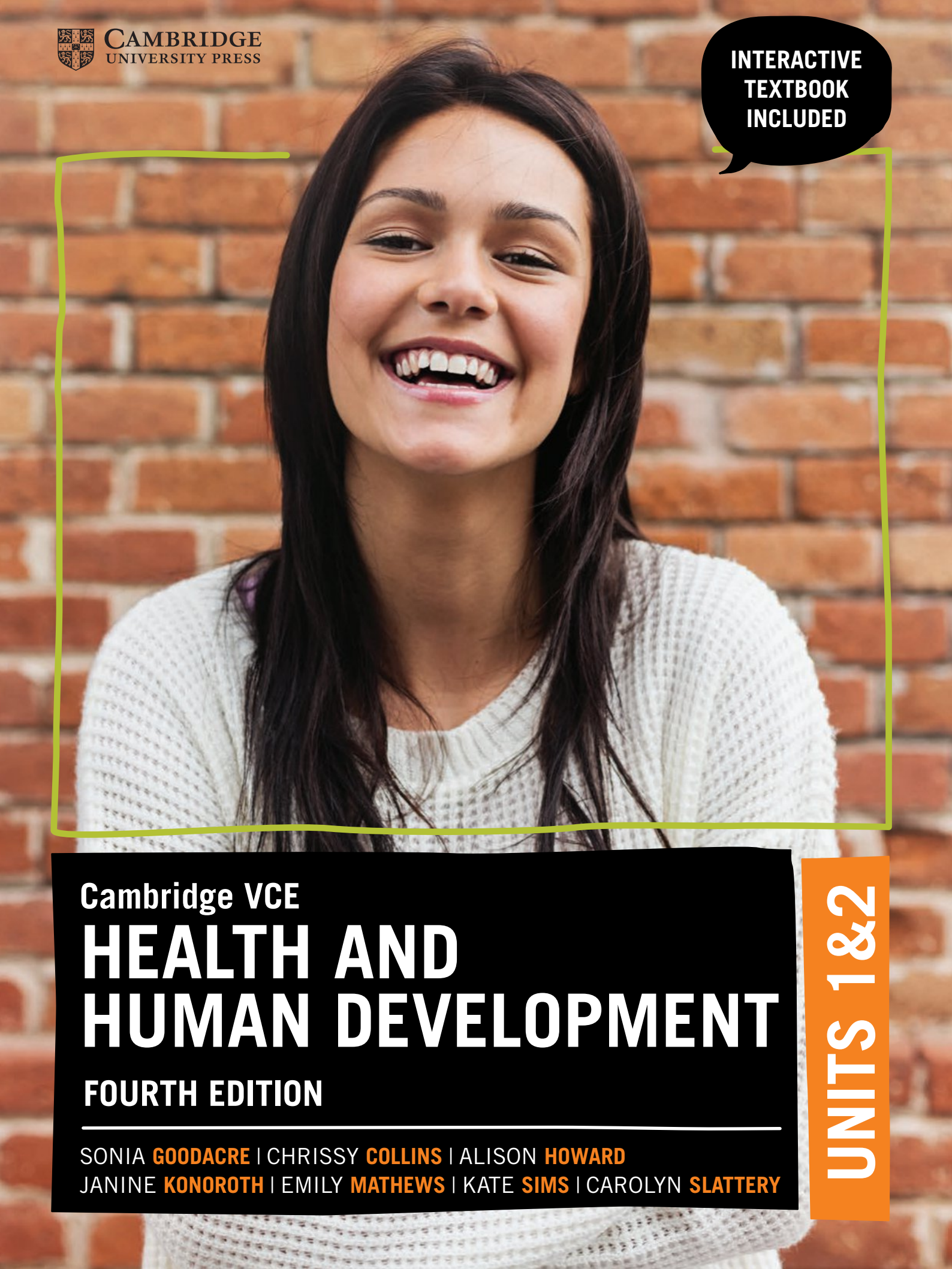
CAMBRIDGE
UNIVERSITY PRESS
INTERACTIVE TEXTBOOK INCLUDED
Cambridge VCE
HEALTH AND HUMAN DEVELOPMENT
FOURTH EDITION
SONIA GOODACRE | CHRISSY COLLINS | ALISON HOWARD
JANINE KONOROTH | EMILY MATHEWS | KATE SIMS | CAROLYN SLATTERY
UNITS 1&2

CAMBRIDGE
UNIVERSITY PRESS

University Printing House, Cambridge CB2 8BS, United Kingdom

One Liberty Plaza, 20th Floor, New York, NY 10006, USA

477 Williamstown Road, Port Melbourne, VIC 3207, Australia

314–321, 3rd Floor, Plot 3, Splendor Forum, Jasola District Centre, New Delhi – 110025, India

79 Anson Road, #06–04/06, Singapore 079906

Cambridge University Press is part of the University of Cambridge.
It furthers the University's mission by disseminating knowledge in the pursuit of
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www.cambridge.org

First published 2010
Second Edition 2013
Updated Second Edition 2016
Third Edition 2018
Fourth Edition 2020
20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

Cover and text designed by Cate Furey
Typeset by QBS Learning
Printed in Malaysia by Vivar Printing

A catalogue record for this book is available from the National Library of Australia at www.nla.gov.au

ISBN 978-1-108-8636-4-3 Paperback

Additional resources for this publication at www.cambridge.edu.au/GO

OVERVIEW

Welcome to Health and Human Development Units 1 & 2.

The authors of this book, teachers in schools just like yours, have a shared desire to provide you with an informative and helpful resource written in language designed for students.

Our goal is to help you do your best, so we offer you the following advice.

Make sure you consolidate each concept as it is covered; it will be too hard to master all at once prior to assessments. Extension questions throughout chapters are designed to check your deep understanding of each concept.

Analyse each piece of data provided even if it doesn't form part of an activity or is not set by your teacher. The more you practise your data analysis skills, the better you will be able to complete these tasks in assessments.

Extended-response questions at the end of chapters build your skills in this assessment type that students traditionally struggle with. Additional sample questions are available in the teacher edition, so ask your teacher to support you with this.

Activities are designed to assess your understanding, so even if your teacher doesn't set all tasks, they will provide an excellent opportunity for you to check how you are going.

Chapter introductions and summaries and end-of-chapter questions and videos are excellent revision tools.

When studying content that you will need to recall (e.g. examples of dimensions of health and wellbeing), studying them from recall is the best way to move them into your long-term memory. Do you remember the look-cover-write-check method that you used in primary school? The same principle can be applied to learning key information in VCE.

We wish you well with your studies this year!

The Authors

For a list of links to all the websites referred to in this book, go to: www.cambridge.edu.au/hhd123ed

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Sonia has taught VCE Health and Human Development since its inception and has worked with subject associations and other organisations to provide support for teachers since 2000. She has been an author for Cambridge since 2003, is actively involved in providing professional development for teachers, and has prepared a number of support materials and study design packages for VCE Health and Human Development. Sonia also presents to students to assist them with their preparation for the exam and is passionate about helping students achieve their best. Currently employed in a leadership role at her school, Sonia also teaches Units 1–4 Health and Human Development. Over the past 22 years, she has taught in independent and government schools and in the TAFE sector. Sonia has also worked with the VCAA as an assessor, and in the development of previous VCE Health and Human Development study designs.

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Chrissy is an experienced Health and Human Development and Food Studies teacher. She has been an author for Cambridge since 2007, developing junior and senior Health and Human Development and Food Studies textbooks. Chrissy regularly presents at professional development events; her presentations focus on student engagement, pedagogy, and exam success. She is also an experienced VCAA exam assessor and writer of trial exams and support material. Chrissy aims to motivate and inspire her own students by sharing her love of learning and passion for her subject areas, and by working with each student to help them reach their full potential.

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After initially studying Health Promotion, Alison graduated as a Health and Human Development and Food Studies teacher from Deakin University. Throughout her career, she has taught at a range of government, Catholic and independent schools and has been involved with the VCAA in various roles, including as an examination assessor. Alison also has extensive experience in the development of examinations for professional bodies. Alison is passionate about teaching Health and Human Development and about developing a study design that engages and inspires students.

JANINE KONOROTH

Janine is an enthusiastic professional who has a passion for ensuring students achieve their personal best. Janine has over 20 years experience as an educator teaching in both government and independent schools. She has held various leadership roles including Leading Teacher, Head of Year, Student Wellbeing Leader, and Head of Department. Prior to teaching, Janine worked in the health and not-for-profit sectors. In addition to being a passionate Health and Human Development teacher, Janine is an experienced VCAA examination assessor and reviewer of Units 3 and 4 trial exams.

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Emily's passion for Health and Human Development began early in her life and has continued to develop throughout her career as a teacher. She has been teaching Health and Human Development for a number of years and has gained additional experience as an examination assessor. Emily enjoys inspiring students' passion for health and wellbeing, not only to succeed in their studies, but also to live long and healthy lives.

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Kate has been working in a government school in country Victoria for more than 20 years. For many years, she has been a teacher of Health and Human Development and has really enjoyed seeing the study evolve to reflect the changing health and wellbeing needs of individuals and populations. Kate has undertaken a variety of roles outside of school, such as working with preservice teachers at universities, marking VCAA exams, being a member of the VCAA study design review panel in 2016, and writing for the VCAA's Advice for Teachers. Kate's biggest passion is being in the classroom, sharing her knowledge, and seeing her students became health-literate citizens.

QR codes throughout the book open examination preparation videos

As you work through the book, you will come across a range of icons indicating that an additional resource is available in the Interactive Textbook.

Interactive test

Video clip

UNIT 1

UNDERSTANDING HEALTH AND WELLBEING

AREA OF STUDY	OUTCOME
1 Health perspectives and influences	On completion of this unit, the student should be able to explain multiple dimensions of health and wellbeing, explain indicators used to measure health status, and analyse factors that contribute to variations in the health status of youth.
2 Health and nutrition	On completion of this unit, the student should be able to apply nutrition knowledge and tools to the selection of food and the evaluation of nutrition information.
3 Youth health and wellbeing	On completion of this unit, the student should be able to interpret data to identify key areas for improving youth health and wellbeing, and plan for action by analysing one particular area in detail.

1 THE CONCEPTS OF HEALTH AND WELLBEING

KEY KNOWLEDGE

- Various definitions of health and wellbeing, including physical, social, emotional, mental and spiritual dimensions
- Youth perspectives on the meaning and importance of health and wellbeing
- Variations in perspectives of and priorities relating to health and wellbeing, according to age, culture, religion, gender and socioeconomic status
- Aboriginal and Torres Strait Islander perspectives on health and wellbeing.

KEY SKILLS

- Describe a range of influences on the perspectives and priorities of health and wellbeing
- Collect and analyse data relating to variations in youth attitudes and priorities regarding health and wellbeing
- Analyse various meanings of health and wellbeing
- Describe different dimensions of health and wellbeing.

(VCAA Study Design, © VCAA)

INTRODUCTION

Everyone needs good health, but people's understanding of what it is to be healthy can differ. In this chapter you will gain an understanding of health and wellbeing, which requires consideration of the many different perspectives that exist on this concept for people with different backgrounds, experiences, attitudes and beliefs. The idea of wellbeing, in particular, is open to a more personal perspective, as it relates strongly to the balance between all five dimensions of health and wellbeing. This is due to the individual interpretation of health that can occur based on how individuals feel about various aspects of their lives, such as their level of happiness and capability. Specifically, the perspectives of Aboriginal and Torres Strait Islander peoples will be explored and the factors influencing their attitudes, beliefs and practices related to health and wellbeing will be examined.

What you need to know

- The various definitions of health and wellbeing.
- The five dimensions of health and wellbeing: the physical, social, emotional, mental, and spiritual dimensions.
- What health and wellbeing means to young people and the value young people place on health and wellbeing.
- Differences in perspectives of and priorities relating to health and wellbeing.
- The impact of a range of factors (age, culture, religion, gender and socioeconomic status) on perspectives and priorities relating to health and wellbeing.
- Aboriginal and Torres Strait Islander perspectives on health and wellbeing.

FIGURE 1.1 Good health and wellbeing is important for individuals and families, communities, nations and global society.

What you need to be able to do

- Analyse the different meanings of health and wellbeing.
- Describe the five dimensions of health and wellbeing.
- Collect (e.g. through a survey or interview) data about youth attitudes to and priorities regarding health and wellbeing.
- Analyse the data you collect to draw conclusions about youth attitudes to and priorities regarding health and wellbeing.
- Describe a range of influences on the perspectives and priorities of health and wellbeing.

1.1 DEFINING HEALTH AND WELLBEING

There are many definitions of 'health'. Most definitions consider health to be an outcome or an end result of people's actions. For example, a woman goes for a run three times a week, therefore she is more healthy than those who do not go for runs. Some individuals and communities may consider health to be an active process of adaptation to their ever-changing environments.

Many dictionaries define health as the overall condition of an organism at a given time in regard to soundness of body or mind and freedom from disease or abnormality.

The most-used definition of health was developed by the World Health Organization (WHO) in 1946. According to the WHO, **health** is 'a state of complete physical, mental and social wellbeing, and not merely the absence of disease or infirmity'.

The WHO's broad definition of health includes the concept of **wellbeing**. Wellbeing is a complex combination of all the dimensions of health that is characterised by an equilibrium or balance in which an individual feels happy, healthy, capable and engaged.

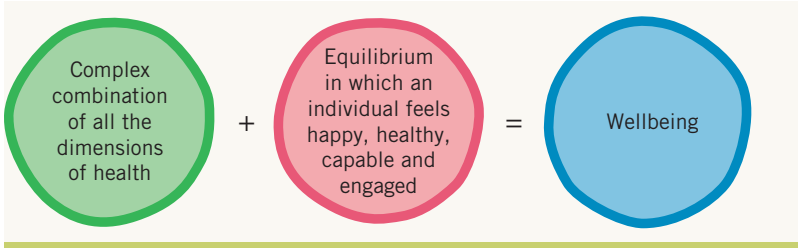


FIGURE 1.3 The concept of wellbeing

In a sense, the concept of wellbeing is broader than the traditional concept of health, because it includes more aspects of human life. The two concepts of health and wellbeing also differ in an important way. When defined as the absence of disease, health may be measured and assessed objectively – for example, doctors may use the results of any laboratory test to ascertain whether a patient is healthy or not. Wellbeing can be harder to determine because it is more **subjective**.

Also, there is the concept of **optimal health and wellbeing**, which means the best possible state of an individual's health and wellbeing for their age.

health: A state of complete physical, social and mental wellbeing, and not merely the absence of disease or infirmity (WHO, 1946).

wellbeing: A complex combination of all dimensions of health, characterised by an equilibrium in which the individual feels happy, healthy, capable and engaged.

subjective: Influenced by or based on a person's feelings, opinions and experiences.

optimal health and wellbeing: The best possible state of an individual's health and wellbeing for their age.

FIGURE 1.2 The World Health Organization developed a definition of 'health' in 1946.

FIGURE 1.4 Health includes physical, mental, spiritual, emotional and social wellbeing.

Strengths of the WHO's definition of health	Weaknesses of the WHO's definition of health
• The WHO's definition is a holistic approach that conceptualises health as more than simply the absence of disease • The WHO's definition is well recognised and simple to understand • The WHO's definition is a positive definition	• The WHO's definition is absolute, which means it is the same for everyone at all times; this is too idealistic and aspirational and does not reflect the understanding of health in all cultures • The WHO's definition does not refer to all the aspects of health, such as spiritual health and wellbeing • The concepts of health and wellbeing are evolving; the WHO's definition may not recognise new understandings of health

FIGURE 1.5 An analysis of the WHO's definition of health

While the WHO's 1946 definition of health is the most commonly accepted explanation of health, it is important to acknowledge other alternative definitions.

In 1986, the WHO, via the Ottawa Charter for Health Promotion, stated that:

> 'health is a resource for everyday life, not the objective of living. Health is a positive concept emphasising social and personal resources, as well as physical capacities.'

Whereas Saracci (1997) defines health as a 'condition of wellbeing, free of disease or infirmity, and a basic and universal human right' (R. Saracci, 1997, 'The World Health Organization needs to reconsider its definition of health', *British Medical Journal*, 314, pp. 1409–1410).

Another generally accepted definition of health is Bircher's more contemporary definition:

> Health is a dynamic state of wellbeing characterised by a physical and mental potential, which satisfies the demands of life commensurate with age, culture, and personal responsibility (Johannes Bircher, 2005, *Towards a Dynamic Definition of Health and Disease*).

These alternative definitions of health have many positive aspects that can enrich our understanding of the concepts of health and wellbeing. Bircher's definition takes into account changing health needs, especially in relation to age, culture and personal responsibility. Whereas, Saracci's definition provides an intermediate concept, linking the WHO's ideal to contemporary issues of human rights and equity.

Another definition of health comes from Australia's Aboriginal and Torres Strait Islander peoples. Indigenous Australians consider health to be not just the physical wellbeing of an individual but the social, emotional and cultural wellbeing of the whole community. If a community is healthy, than individuals can achieve their full potential.

Therefore, health and wellbeing can be defined in multiple different ways; some definitions focus on the absence of illness, while other definitions are concerned with a person's ability to cope with everyday activities. When analysing these different definitions, it becomes clear why health and wellbeing are often considered to be one overall concept. Any definition of health and wellbeing needs to acknowledge the existence of a complex state or process towards wellbeing and away from disease and illness.

EXTENSION QUESTION 1.1

There are many different definitions of 'health'. Discuss the strengths and limitations of the definitions of health provided in this chapter.

DISCUSS

Physical disability does not necessarily mean illness for those experiencing it. Discuss.

ACTIVITY 1.1: ANALYSIS OF DEFINITIONS OF HEALTH AND WELLBEING

Read these three definitions of health and wellbeing, then answer the questions below.

- **Definition 1:** 'For Aboriginal and Torres Strait Islander Australians good health is more than the absence of disease or illness; it is a holistic concept that includes physical, social, emotional, cultural, spiritual and ecological wellbeing, for both the individual and the community.' (Australian Institute of Health and Welfare (AIHW), 2018, *Aboriginal and Torres Strait Islander Adolescent and Youth Health and Wellbeing*)
- **Definition 2:** 'Wellbeing is not just the absence of disease or illness. It is a complex combination of a person's physical, mental, emotional and social health factors. Wellbeing is strongly linked to happiness and life satisfaction.' (Better Health Channel)
- **Definition 3:** 'Health is a state of wellbeing. It reflects the complex interactions of a person's genetics, lifestyle and environment.' (AIHW, *Australia's Health 2018*, p. 4)

1 Outline the strengths and limitations of each of these definitions of health and wellbeing.

2 Reflect on these definitions and the WHO's 1946 definition. Write your own definition of health and wellbeing.

1.2 THE DIMENSIONS OF HEALTH AND WELLBEING

While the WHO's 1946 definition of health includes physical, social and mental wellbeing, in 1984 the WHO also recognised a fourth dimension of wellbeing: spiritual wellbeing. This was an acknowledgement that 'the spiritual dimension plays a great role in motivating people's achievements in all aspects of life' (WHO, 1983). The emotional dimension of health and wellbeing is also recognised as an important component of day-to-day life. What constitutes good physical, social, mental, emotional and spiritual health and wellbeing differs from one person to another.

physical health and wellbeing: Relates to the functioning of the body and its systems. It includes the physical capacity to perform daily activities or tasks. Physical health and wellbeing is supported by factors such as regular physical activity, consuming a balanced diet, having appropriate rest and sleep, maintaining an ideal body weight, and the absence of illness, disease or injury.

This section provides a general discussion and description of the five dimensions of health and wellbeing:

- physical health and wellbeing
- social health and wellbeing
- mental health and wellbeing
- emotional health and wellbeing
- spiritual health and wellbeing.

Physical health and wellbeing

Physical health and wellbeing relates to the functioning of the body and its systems. This concept also includes an individual's physical capacity to perform daily activities and tasks.

A person can look after their physical health and wellbeing by exercising regularly, eating a healthy and balanced diet, having appropriate rest/sleep, maintaining an ideal body weight, reducing their exposure to damaging environmental conditions, and reducing their risk-taking behaviour (e.g. smoking). If an individual has good physical health and wellbeing, then they can perform according to the way their body has been designed to function.

Indicators of physical health and wellbeing include body weight, level of fitness, and the functioning of the body's organs and systems.

FIGURE 1.6 Good physical health and wellbeing assist us to perform daily activities.

When assessing an individual's health and wellbeing, the first aspect often considered is the physical dimension of health and wellbeing. This may be due to the fact that the outcomes of physical health and wellbeing, or ill-health, are visible and easily diagnosable by healthcare professionals.

FIGURE 1.7 Indicators of good physical health and wellbeing

Social health and wellbeing

Social health and wellbeing is the ability to interact and develop **relationships** with other people in a meaningful way and the ability to adapt to different social situations appropriately. Being accepted by others and interacting well within different groups of people, including family and peers, is very important for good social health and wellbeing.

The notion that social health and wellbeing is a major dimension of health was stimulated by its inclusion in the WHO's 1946 definition of health.

In the healthcare system, there is an increasing emphasis on treating patients as social beings who live in a complex social context. Social health and wellbeing has also become relevant with the increasing evidence that those who are well integrated into their communities tend to live longer and recover faster from disease. Conversely, social isolation has been shown to be a risk factor for illness.

FIGURE 1.8 Family cohesion promotes social health and wellbeing.

Hence, social health and wellbeing may be influenced by social adjustment and social support and the ability to perform roles in society.

The social dimension of health and wellbeing encourages individuals to contribute to their environment in order to increase the welfare of their community. Social health and wellbeing emphasise interdependence with others and being aware of each person's importance in society, as well as the impact they have on their community. Another major component of an individual's social health and wellbeing involves experiencing better communication with those around them.

social health and wellbeing: Relates to the ability to form meaningful and satisfying relationships with others and to manage or adapt appropriately to different social situations. It also includes the level of support provided by family and within a community to ensure that every person has equal opportunity to function as a contributing member of society. Social health and wellbeing is supported by strong communication skills, empathy for others and a sense of personal responsibility.

relationship: A connection between two or more people and their involvement with, and behaviour towards, one another.

FIGURE 1.9 Indicators of good social health and wellbeing

Mental health and wellbeing

Mental health and wellbeing refers to a person's current state of wellbeing in their mind or brain, and to their ability to think and process information to positively form opinions and make decisions. A feeling of optimism is important for good mental health and wellbeing, as is maintaining a high level of **self-esteem**.

mental health and wellbeing: Is the current state of wellbeing relating to the mind or brain and it relates to the ability to think and process information. A mentally healthy brain enables an individual to positively form opinions, make decisions and use logic. Mental health and wellbeing is about the wellness of the mind rather than illness. Mental health and wellbeing is associated with low levels of stress and anxiety, positive self-esteem, as well as a sense of confidence and optimism.

self-esteem: How a person feels about their own abilities and self-worth.

A person's mental health and wellbeing depends on how well they can function where their thoughts and behaviours are concerned – not only in relation to their own life but also to the world around them. To have good mental health and wellbeing, a person must be able to control their response to stress. Overall, mental health and wellbeing involves an individual being able to use their mental capabilities (e.g. their ability to plan, reason, solve problems and learn from experiences) to meet the common demands of everyday life.

FIGURE 1.10 Mental health and wellbeing is associated with having a sense of confidence and optimism as well as being able to make decisions and use logic.

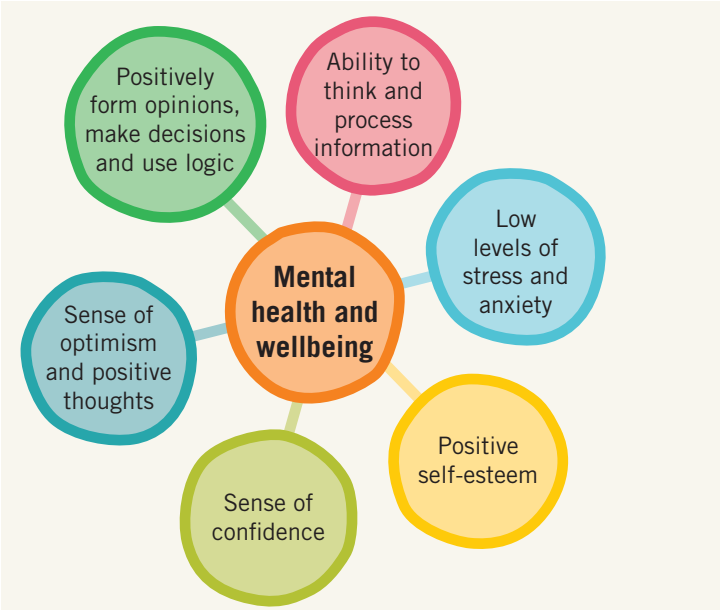


FIGURE 1.11 Indicators of good mental health and wellbeing

Emotional health and wellbeing

Emotional health and wellbeing relates to being able to manage and express feelings in a healthy way and being able to display **resilience** in everyday life. Overall, the emotional dimension of health and wellbeing emphasises an awareness and acceptance of one's feelings and the related behaviours involved in expressing those feelings. A person with good emotional health and wellbeing can freely express and manage their own feelings. Understanding the value of feelings and being able to use them in a positive way increases an individual's ability to enjoy life.

FIGURE 1.12 Indicators of good emotional health and wellbeing

DISCUSS

Strong friendships and relationships promote emotional health and wellbeing. Discuss what helps you to feel emotionally secure and relaxed in everyday life.

Spiritual health and wellbeing

Spiritual health and wellbeing refers to a phenomenon that is not material in nature (i.e. you can't touch it or see it) but rather belongs to the realm of ideas, beliefs, values and ethics that have arisen in people's minds and conscience. The spiritual dimension of health and wellbeing is described and interpreted as an individual's need for meaning, purpose and fulfilment in life. For many individuals, it involves identification with a belief or faith system that contributes to hope and the will to live. Spiritual health and wellbeing is the most personal of the five dimensions of health and wellbeing.

Spiritual health and wellbeing is a highly individualised concept that can be measured by the amount of peace and harmony an individual experiences in their daily life. The value systems that individuals use to guide and/or measure their happiness, fulfilment and sense of meaning vary widely.

emotional health and wellbeing: Relates to the ability to express feelings in a positive way. It is about the positive management and expression of emotional actions and reactions as well as the ability to display resilience. Emotional health and wellbeing is the degree to which you feel emotionally secure and relaxed in everyday life.

resilience: The capacity to thrive, learn, care and contribute in the face of adversity, change or challenge.

spiritual health and wellbeing: Not material in nature but relates to ideas, beliefs, values and ethics that arise in the minds and conscience of human beings. It includes the concepts of hope, peace, a guiding sense of meaning or value, and reflection on your place in the world. Spiritual health and wellbeing can be highly individualised; for example, in some spiritual traditions, it may relate to organised religion, a higher power and prayer, while in other practices, it can relate to morals, values, a sense or purpose in life, connection or belonging.

EXTENSION QUESTION 1.2

Explain how the other dimensions of health and wellbeing support positive emotional health and wellbeing.

AOS 1

FIGURE 1.13 Yoga and meditation is a spiritual practice for many people.

FIGURE 1.14 Indicators of good spiritual health and wellbeing

dynamic: Constantly changing.

The spiritual dimension of health and wellbeing plays a great role in motivating people to strive for happiness in all aspects of life. Developing spiritual health and wellbeing generally begins with an individual's desire to give life purpose. For many people, the spiritual dimension of their health involves a belief in a higher power that is present in their life.

The interaction of the five dimensions of health and wellbeing

Maintaining an optimal level of health and wellbeing requires the five dimensions of health and wellbeing to not only be in balance with each other, but to interact. No single dimension of health and wellbeing works independently; the dimensions influence each other to determine an individual's overall level of wellbeing and hence a person's health status. Understanding the dynamic relationships between the different dimensions is key to understanding the concept of health and wellbeing.

In addition, health and wellbeing is an ever-changing or **dynamic** state that is affected by a person's interactions with the environment. Because of this, an individual's state of health and wellbeing is continually changing. Therefore, each of the dimensions of health and wellbeing is an active, dynamic state. The dimensions of health and wellbeing can be greatly affected by factors such as education, family, income and peer group.

A person's level of health and wellbeing can be illustrated on a health and wellbeing–illness continuum (Figure 1.15). This continuum illustrates the process of change, in which an individual experiences various states of health and wellbeing and illness – ranging from optimum health and wellbeing (i.e. the best one can experience) to premature death – that fluctuate throughout their life as the dimensions of health and wellbeing interrelate.

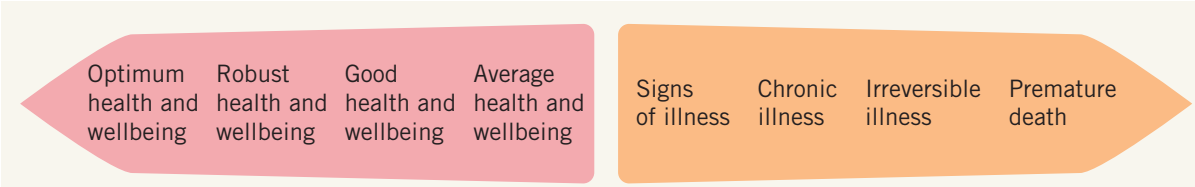


FIGURE 1.15 A health and wellbeing–illness continuum

ACTIVITY 1.2: DIMENSIONS OF HEALTH AND WELLBEING

Think about your own health and wellbeing when answering the following questions.

1 Describe the difference between emotional and mental health and wellbeing.

2 Identify positive and negative characteristics of:

- **a** physical health and wellbeing
- **b** social health and wellbeing
- **c** mental health and wellbeing
- **d** emotional health and wellbeing
- **e** spiritual health and wellbeing.

3 Compare your list with that of a classmate. Discuss the similarities and differences between your answers.

4 Describe factors that influence whether you consider yourself to be experiencing optimal health and wellbeing.

5 Explain how easy or difficult it is to change these influences/factors.

6 State where you are on the health and wellbeing–illness continuum.

- **a** Suggest how your personal position on this continuum changes over time.
- **b** Describe whether the continuum only works in one direction. Use examples to support your response.

7 Explain how a person achieves an optimal level of health and wellbeing.

ACTIVITY 1.3: SUMMARY OF THE DIMENSIONS OF HEALTH AND WELLBEING

Using ComicLife or another online tool, design a poster that summarises the different dimensions of health and wellbeing. Include at least three examples of each dimension.

1.3 YOUTH PERSPECTIVES ON THE MEANING AND IMPORTANCE OF HEALTH AND WELLBEING

Youth as a population group are generally very healthy and tend to suffer less from the wide range of illnesses that occur during **adulthood**. This can be reflected in young people's perspectives on the meaning of health and wellbeing.

adulthood: In Australia, the lifespan stage from 18 years onwards and a time of continuing physical, social, emotional and intellectual change.

In 2016–17, Cambridge University Press conducted a survey of young people regarding their perspectives and attitudes to health and wellbeing. Over 800 secondary school students aged 12–18 years were surveyed. Participants in this survey self-assessed their own health status by rating their health and wellbeing. Approximately 76 per cent of the respondents indicated that their health and wellbeing was 'excellent' or 'good' at the time of the survey; only 4 per cent assessed their own health and wellbeing as 'poor'.

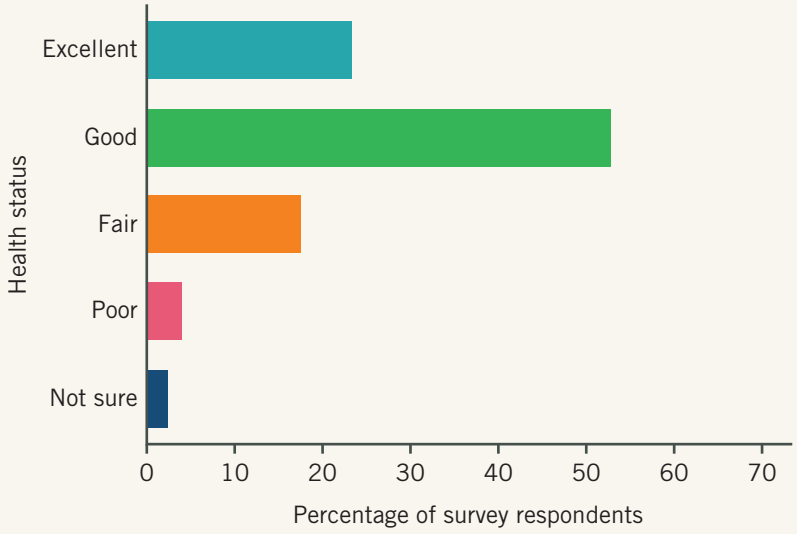
In the Cambridge University Press Youth Survey, when asked to describe what health and wellbeing meant to them, nearly 40 per cent of the participants indicated that health and wellbeing was a balance of physical, mental and social wellbeing, and not just the absence of illness.

Young people also clearly associate health and wellbeing with their everyday life and with how well they function. A large number of participants in the Cambridge University Press Youth Survey indicated that health and wellbeing was a resource for everyday life.

Twenty per cent of the survey participants strongly associated the meaning of health with wellbeing by indicating that health was the state of being healthy, happy and contented. For many young people, the link between health and wellbeing is fundamental to perceiving their overall health status.

When asked how important health and wellbeing was to them, approximately 93 per cent of the respondents indicated that health and wellbeing was either 'very important' or 'somewhat important'.

Furthermore, Australian youth have a fairly strong awareness of the positive and negative influences on their health and wellbeing and realise that maintaining an optimal state of wellbeing requires effort and consideration of these influences.



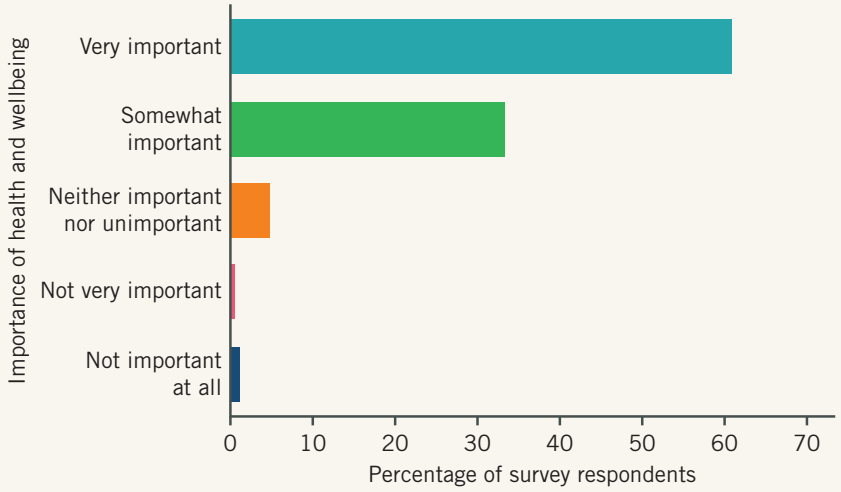
SOURCE: Cambridge University Press Youth Survey 2016–17

FIGURE 1.16 The self-assessed health status of 800 Australian secondary school students, aged 12–18 years

The young people surveyed accepted some individual **responsibility** for their health and wellbeing and recognised that their lifestyle choices impacted their health and wellbeing. More than 80 per cent of the respondents thought that the more important factors in determining their health and wellbeing were being physically active and having enough rest or sleep. The factors that respondents thought were less important to their health and wellbeing were 'religion/cultural beliefs' and 'wealth/income'.

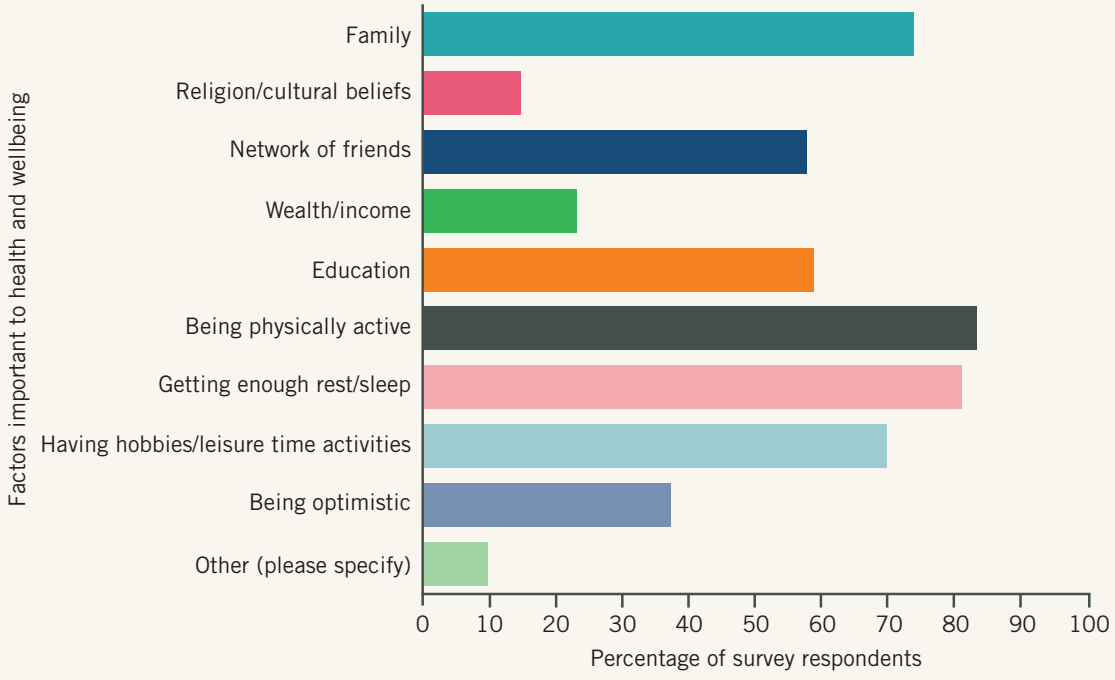
responsibility: A duty or task you are required or expected to do.

The students' responses also indicated that social factors (e.g. their family, network of friends and their education) were crucial influences on their health and wellbeing.



SOURCE: Cambridge University Press Youth Survey 2016–17

FIGURE 1.17 The importance of health and wellbeing to 800 Australian secondary school students, aged 12–18 years



SOURCE: Cambridge University Press Youth Survey 2016–2017

FIGURE 1.18 The factors that are important to health and wellbeing, according to 800 Australian secondary school students, aged 12–18 years

ACTIVITY 1.4: DATA ANALYSIS

Find online the most recent *Youth Survey Report*, published by Mission Australia. In the report, find the two 'Issues of personal concern to young people' tables (one table is in the 'National summary' and one table is in the 'Aboriginal and Torres Strait Islander summary' sections of the report), then answer the following questions.

1 According to the *Youth Survey Report*, what are the three most significant issues of personal concern to young people in Australia?

2 Compare these issues to the three most significant issues of personal concern to Aboriginal and Torres Strait Islander young people.

3 Compare both of these to the Cambridge University Press Youth Survey data.

4 Suggest what the *Youth Survey Report* data tells us about the importance of health and wellbeing for young people.

5 Describe how the Mission Australia survey was conducted.

6 Discuss the **validity** of the Mission Australia survey.

validity: An indication of how sound the research conducted is.

ACTIVITY 1.5: INQUIRY ACTIVITY – YOUNG PEOPLE'S UNDERSTANDING OF THE CONCEPTS OF HEALTH AND WELLBEING AND THEIR IMPORTANCE

In pairs, survey a small group of students (around five to eight) at your school who are between the ages of 12–18 years. It is important to not include VCE Health and Human Development students in your survey. Consider conducting the survey online using a free online survey tool (e.g. Google Forms or SurveyMonkey).

1 Construct a short list of questions relating to each of the following:

- **a** the survey respondent's understanding of the meaning of health
- **b** the survey respondent's understanding of the meaning of wellbeing
- **c** the importance of overall health and wellbeing for them as an individual
- **d** what the survey respondent thinks the dimensions of health and wellbeing are
- **e** the level of importance the survey respondent places on each of the dimensions of health and wellbeing.

2 Describe the method of data collection you used, including information about the sample group from whom data was collected.

3 Analyse the data you collected by considering the following questions:

- **a** What are the major components of young people's understanding of what health means?
- **b** Is this the same or different from young people's understanding of wellbeing? Explain your response.
- **c** How important is the concept of health and wellbeing to young people?

4 Write a summary of the data you collected. Include statistical data if it is available (if you used an online tool, a graph of the data should be available). Draw some conclusions about your data.

5 Compare your findings with the findings of the Cambridge University Press Youth Survey discussed in Section 1.3. Suggest reasons for any variations.

1.4 VARIATIONS IN PERSPECTIVES ON, AND PRIORITIES RELATING TO, HEALTH AND WELLBEING

An individual's **perspective** on health and wellbeing can be influenced by their:

- age
- culture
- religion
- gender
- socioeconomic status.

These factors can also influence the degree of importance an individual places on health and wellbeing, and the dimensions that a person **prioritises** to attain optimal health and wellbeing.

The young people who participated in the Cambridge University Press Youth Survey in 2016–17 were asked a variety of questions to provide insight into their perspectives on health and wellbeing, and the influences on these perspectives. The students surveyed also varied in their attributes in order to determine differences in perspectives based on those attributes, as previously identified, the respondents ranged in age from 12–18 years.

In the Cambridge University Press Youth Survey, there were slightly more females (58 per cent) than males surveyed. The sample group came from a range of social backgrounds, including being from a range of locations within major cities and in regional Victoria. The respondents also had different cultural backgrounds or ethnicities, but with the predominant nationality being identified as Australian (69 per cent). There were also a variety of religious denominations identified; however, many of the respondents were Catholic or had no religious affiliation. Their responses are discussed throughout this section where relevant.

perspective: An individual's outlook.

priority: How important something is considered to be.

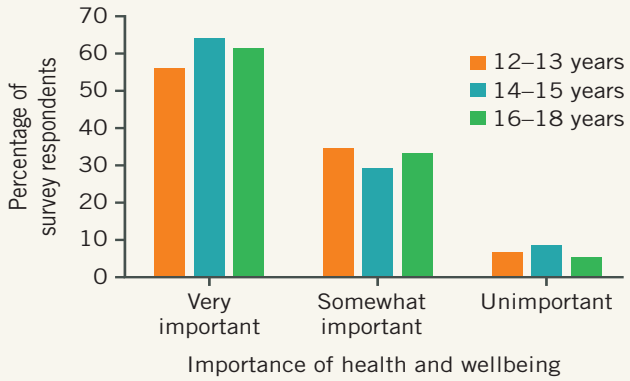
perception: The way in which something is regarded, understood or interpreted.

Age

An individual's perspective on health and wellbeing changes as they age. Children and young people tend to focus on illness, or the lack of it, as a main component of their perception of health and wellbeing. As people move into adulthood and older adulthood, **perceptions** are modified through their experiences and their continued growth in knowledge. For example, life satisfaction changes over time as success is experienced, autonomy is gained, and relationships are deepened.

FIGURE 1.19 As we grow older, our life changes and so does our perception of health and wellbeing.

AOS 1



SOURCE: Cambridge University Press Youth Survey 2016–17

FIGURE 1.20 The importance of health and wellbeing by age

Often, there are changes in an individual's values as they age, which can influence which health and wellbeing dimensions they think are important. For example, young people tend to highly value social interactions and developing a large network of friends; these priorities may result in a young person thinking that social health and wellbeing are the most important. Whereas in later adulthood, a person may highly value self-esteem and **self-concept** (mental health and wellbeing).

self-concept: The idea individuals have of themselves: who they are, who they want to be, what they value, and what they believe others think of them.

As a person's body ages physically, being able to physically manage everyday tasks can become a focus, or how to manage chronic illness as well as continuing independence alongside the other dimensions.

Therefore, different people's concept of health and wellbeing and the priorities relating to it can be markedly different.

When respondents to the Cambridge University Press Youth Survey 2016–2017 were asked about the importance of health and wellbeing, different age groups had a slightly different perspective, with the younger youth (aged 12–13 years) being less likely to rate their health as very important than the older youth (aged 16–18 years).

In relation to influences on young people's perspectives relating to health and wellbeing, the factors that most shaped what the respondents' thought of health and wellbeing included social influences such as parents' beliefs, peer group or friends, and the accessibility of health-related information. Older youth (aged 16–18 years) were most influenced by the availability of health information, whereas younger youth (aged 12–14 years) were more influenced by their peer group and least influenced by their cultural background.

ACTIVITY 1.6: AGE GROUPS

1 List the different stages of the lifespan.
2 Outline what you believe the perspectives of health and wellbeing could be for each age group.
3 Discuss how the priorities of health and wellbeing could differ between each age group and suggest reasons for the differences.

Culture

An individual's **culture** is most often viewed as the shared beliefs, accepted behaviours and customs of a group of people. Culture is often strongly linked with a person's recognised ethnicity, and for many people can be interconnected with religious beliefs and geographical location.

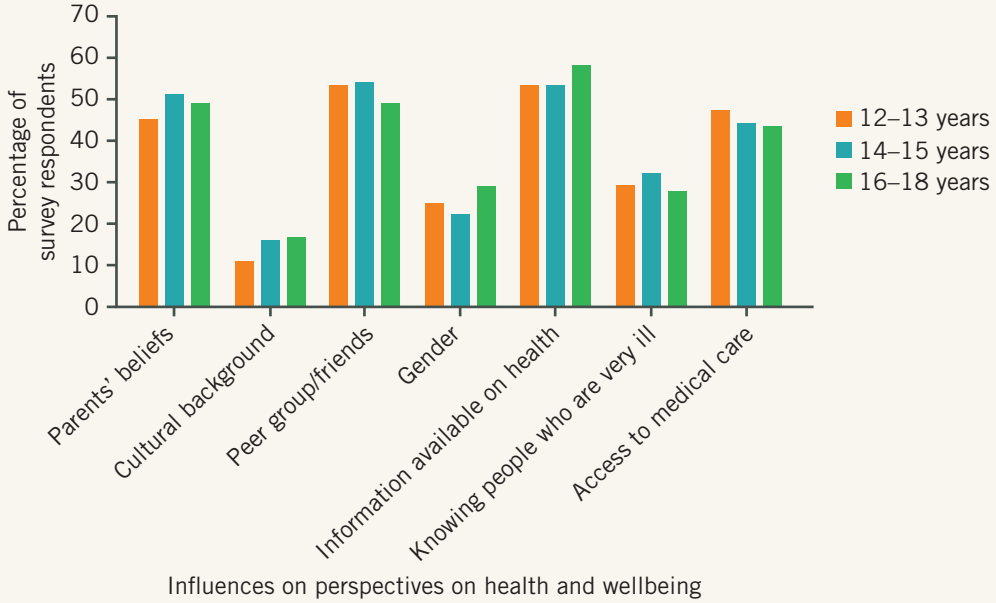
Culture is known to have an influence on how a person perceives the concepts of health and wellbeing, as well as determining the importance placed on health and wellbeing and related factors. For example, the priorities related to lifestyle behaviours that impact on health and wellbeing can be influenced both positively and negatively by the shared beliefs and accepted behaviours of a person's culture.

The member of the family that makes decisions regarding health and wellbeing can be based on culture. For example, in particular cultures the oldest male member of the family is the main decision-maker so therefore the person making the health and wellbeing decisions for family members.

FIGURE 1.21 Family and cultural identity are strongly linked.

For some cultures, it is difficult to accept mental health and wellbeing as a main dimension of achieving optimal health and wellbeing. This can result in a reluctance to prioritise self-care and preventative health behaviours in this area, as well as making it difficult to accept intervention.

culture: The shared attitudes, beliefs, values and practices that characterise a group or organisation.



SOURCE: Cambridge University Press Youth Survey 2016–17

FIGURE 1.22 Influences on perspectives on health and wellbeing by age

Religion

For many people, religion can have a significantly positive impact on their health and wellbeing, thereby influencing their perspective and the importance they place on resources provided through religious involvement. Specifically, religion can influence both the social and spiritual dimensions of health and wellbeing. Religion does this by providing social support and an opportunity to interact with others and participate in the community in a cooperative way in relation to the particular belief system. Religion also influences perspectives on health and wellbeing by providing a sense of meaning for living, a connectedness to the world and a sense of purpose. These components of spiritual health and wellbeing can influence an individual's priorities for attaining personal wellbeing and optimal health and wellbeing.

gender: The socially constructed characteristic of women and men – such as norms, roles and responsibilities of and between groups of women and men.

sex: One of two main categories dividing humans as either male or female based on their genetic information or reproductive organs.

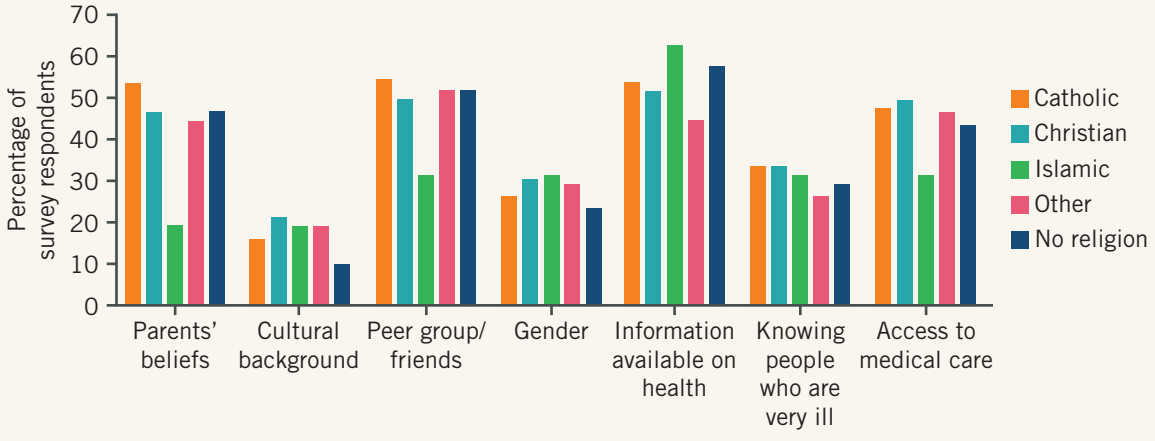
Data collected in the Cambridge University Press Youth Survey 2016–17 showed some differences between the influences on perspectives on health and wellbeing across a range of religious backgrounds. For those surveyed who identified as Islamic, the most influential factor was the information that was available and the least influential factor was their parents' beliefs. For those who identified as Catholic, parents' beliefs, peers and information available were all similarly influential, whereas cultural background was least influential. For those affiliated with no religious denomination, cultural background was also the least influential factor.

Gender

The World Health Organization defines **gender** as 'the socially constructed characteristic of women and men – such as norms, roles and responsibilities of and between groups of women and men. It varies from society to society and can be changed … While most people are born either male or female, they are taught appropriate norms and behaviours – including how they should interact with others of the same or opposite **sex** within households, communities and work places.'

Gender also has an influence on health-related behaviour. For example, females are more likely than males to develop a perspective on health and wellbeing that is proactive, preventative and based on sought knowledge and understanding. This is particularly the case for older males and females, and is linked to the gender roles that have been established throughout their lifespan.

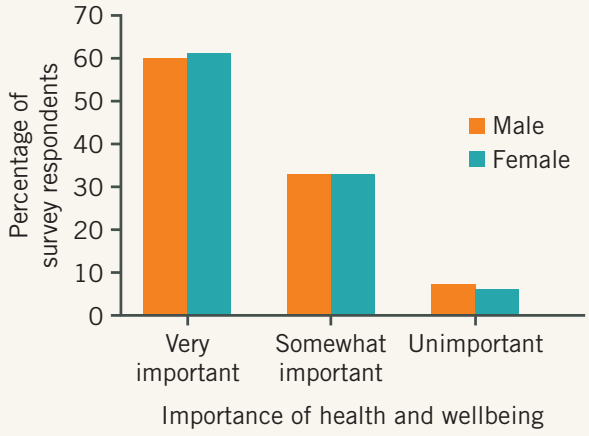
From the information collected in the Cambridge University Press Youth Survey 2016–17, there was relative uniformity between the sexes across a range of questions.



Influences on perspectives on health and wellbeing

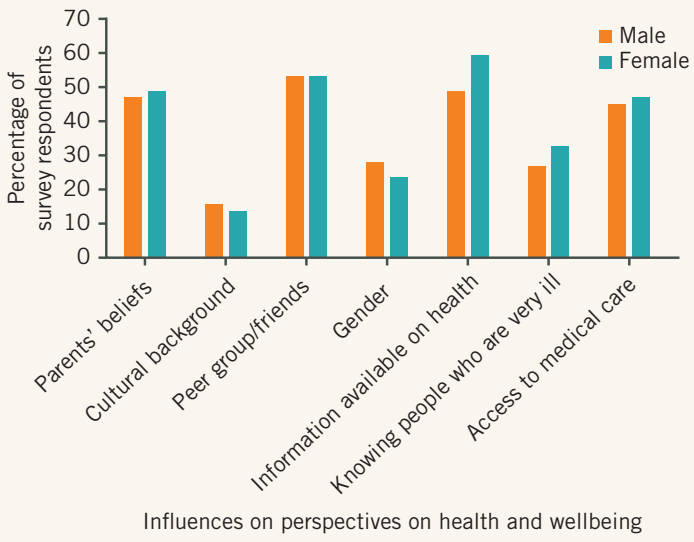
SOURCE: Cambridge University Press Youth Survey 2016–17

FIGURE 1.23 Influences on perspectives on health and wellbeing by religious background



SOURCE: Cambridge University Press Youth Survey 2016–17

FIGURE 1.24 Importance of health and wellbeing by gender



SOURCE: Cambridge University Press Youth Survey 2016–17

FIGURE 1.25 Influences on perspectives on health and wellbeing by gender

For example, when asked about the importance of health and wellbeing to them, males and females responded almost identically.

In relation to influences on youth's perspectives relating to health and wellbeing, the factors that most shaped what youth thought of health and wellbeing included social influences such as parents' beliefs, peer group or friends, and the accessibility of health-related information. Females were more likely to rely on the availability of information to form their thoughts on health and wellbeing than males, and also more strongly influenced by knowing people who were very ill.

DISCUSS

There is a saying, 'Women get sick, men die'. Discuss what you think this saying might mean in relation to gender-based health stereotypes.

Socioeconomic status

Socioeconomic status (SES) is determined by the key elements of education level, employment status, occupational type and, most importantly, income. Individuals can have differing access to knowledge, resources and expectations that enable them to fine-tune their perspective and the level of importance they place on health and wellbeing. Physical and mental health and wellbeing are strongly associated with socioeconomic status (SES). Lower SES, for example, is linked to poorer health and wellbeing, which can have the potential to decrease an individual's capacity to work. This can diminish their ability to improve their socioeconomic status because they are unable to increase their income.

socioeconomic status: (Also referred to as social class.) The key elements of income, education level, employment status, and occupational type determine a person's socioeconomic status.

Individuals of higher SES are more likely to have access to better nutrition and opportunities for physical activity as well as financial resources to pursue interests that could increase their social interactions and reduce social isolation. Higher SES individuals are also less likely to undertake unhealthy, risky behaviours and their access to knowledge may lead them to prioritise their wellbeing over the influences on their behaviour.

ACTIVITY 1.7: SUMMARISE DATA

Create a summary table of the factors (age, culture, religion, gender and socioeconomic status) leading to variations in perspectives and priorities relating to health and wellbeing. Include:

a an explanation of the factor

b examples of how each factor leads to variations in perspectives relating to health and wellbeing

c examples of how each factor leads to variations in priorities relating to health and wellbeing.

ACTIVITY 1.8: INQUIRY ACTIVITY

Variations in perspectives on and priorities relating to health and wellbeing attributable to age, culture, religion, gender and SES have been discussed. Select one of these factors (or one may be allocated to you by your teacher) and conduct your own data collection and analysis by following the steps below.

1 Develop a short list of questions relating to individuals' perspectives on health and wellbeing, and how these perspectives influence their priorities in terms of health and wellbeing. Conduct four or five interviews with individuals that will provide different perspectives in relation to the factor you have chosen. For example, if you have chosen culture as your factor, choose respondents who are of different cultural backgrounds, while keeping their ages and sex the same. Ensure that you include a number of questions that allow you to collect data on your sample so that you can describe them, such as their suburb or school, but ensure your participants are able to remain anonomyous.

2 Describe the method of data collection you undertook, including information on the sample group from which data were collected. Make sure that this information is relevant to the chosen factor.

3 Present the data in a table.

4 Analyse the data collected by considering the following:

- **a** Briefly describe your chosen factor.
- **b** Explain how the factor influences the perspectives of your respondents on health and wellbeing.
- **c** Explain how the factor influences the priorities of your respondents in relation to health and wellbeing.
- **d** Outline some other factors that are closely linked with your chosen factor in terms of a possible combined influence.
- **e** Discuss what surprised you regarding your findings.
- **f** Outline what expectations you had that were confirmed by your findings.

5 Comment on your findings by completing a brief summary that includes some conclusions about your data.

1.5 ABORIGINAL AND TORRES STRAIT ISLANDER PERSPECTIVES ON HEALTH AND WELLBEING

Aboriginal and Torres Strait Islander peoples have a very holistic and community oriented definition of health:

> Aboriginal health does not just mean the physical wellbeing of the individual but refers to the social, emotional, spiritual and cultural wellbeing of the whole community in which each individual is able to achieve their full potential thereby bringing about the total wellbeing of their community. This is a whole of life view and includes the cyclical concept of life-death-life. (AHMRC)

This holistic approach translates as a physical and spiritual connection to land or 'country' as an important basis for the social, emotional and mental health and wellbeing of Aboriginal and Torres Strait Islander peoples, and kinship systems and community relationships are vital for supporting that connection to country and culture.

Professor Ngiare Brown states of Aboriginal and Torres Strait Islander peoples:

> At our best, we bring our traditional principles and practices – respect, generosity, collective benefit, collective ownership – to our daily expression of our identity and culture in a contemporary context. (Brown, 2013)
>
> As such, an Aboriginal and Torres Strait Islander person's social responsibilities and obligations may take precedence over their own health because of the priority given to their social relationships.
>
> For example, in Aboriginal culture there is a clear separation between men's and women's role or 'business' in society. Women's business includes all aspects of reproduction and female ceremonial business. Men's business involves hunting, conflicts, the land, male anatomy and male ceremonial business. (Panzironi, 2013)

Culture can influence Aboriginal and Torres Strait Islander peoples decisions about the use of healthcare services, the likelihood of following treatment advice and the likely success of prevention and health promotion strategies. The need for culturally appropriate health services that are available and accessible to Aboriginal and Torres Strait Islander peoples are a key part of improving their health status.

The significance of culture to wellbeing, and therefore good health, is also demonstrated by using traditional knowledge and the practices of traditional healers as a complement to the Australian healthcare system.

FIGURE 1.26 In Aboriginal and Torres Strait Islander communities, health is holistic and community focused.

A number of factors influence the variation in use of traditional medicine practices among the different Aboriginal and Torres Strait Islander communities across Australia. This variation can depend on association with culture and beliefs about the causes of ill-health, the type of illness being experienced, success of treatment by medical practitioners, and accessibility to traditional healers and bush medicines.

Anne Warren, a Victorian Aboriginal elder and medicine woman, states:

> In traditional Aboriginal medicine, which is entirely holistic and preventive, 'spirit' is the ultimate wisdom. If the spirit is well, the body will be well. So we heal the spirit through the body. (Panzironi, 2013)

FIGURE 1.27 Examples of bush medicine – traditional Aboriginal and Torres Strait Islander medicine – including Eucalyptus oil for pain, fever and chills and Kakadu plum for sores, backache and ringworm

ACTIVITY 1.9: WELLBEING – WHAT DO ABORIGINAL PEOPLES KNOW?

Watch the documentary, 'Wellbeing: What Aboriginal people know' (available at https://cambridge.edu.au/redirect/8869), then answer the questions below.

1. What is culture? Suggest why culture is important for Aboriginal and Torres Strait Islander peoples.
2. State why many Aboriginal peoples have been forced from their land.
3. Outline what Dennis Stokes identifies as the impact of learning your culture.
4. Describe the connection between culture, and health and wellbeing.
5. Discuss the statement 'being on country and practising culture is an important part of wellbeing'.
6. Culture is an important part of all the dimensions of health and wellbeing. Reflect on this documentary and provide an example for how culture impacts each of the dimensions of health and wellbeing.

CHAPTER SUMMARY

- There are various definitions of health and wellbeing.
  - The World Health Organization's definition of health is 'a state of complete physical, mental and social wellbeing, and not merely the absence of disease or infirmity'.
- The five dimensions of health and wellbeing are physical, social, emotional, mental and spiritual. No single dimension of health and wellbeing works independently. Refer to the glossary terms for the definition of each of the five dimensions of health and wellbeing:
  - physical health and wellbeing: Relates to the functioning of the body and its systems. It includes the physical capacity to perform daily activities or tasks. Physical health and wellbeing is supported by factors such as regular physical activity, consuming a balanced diet, having appropriate rest and sleep, maintaining an ideal body weight, and the absence of illness, disease or injury.
  - social health and wellbeing: Relates to the ability to form meaningful and satisfying relationships with others and to manage or adapt appropriately to different social situations. It also includes the level of support provided by family and within a community to ensure that every person has equal opportunity to function as a contributing member of society. Social health and wellbeing is supported by strong communication skills, empathy for others and a sense of personal responsibility.
  - mental health and wellbeing: Is the current state of wellbeing relating to the mind or brain and it relates to the ability to think and process information. A mentally healthy brain enables an individual to positively form opinions, make decisions and use logic. Mental health and wellbeing is about the wellness of the mind rather than illness. Mental health and wellbeing is associated with low levels of stress and anxiety, positive self-esteem, as well as a sense of confidence and optimism.
  - emotional health and wellbeing: Relates to the ability to express feelings in a positive way. It is about the positive management and expression of emotional actions and reactions as well as the ability to display resilience. Emotional health and wellbeing is the degree to which you feel emotionally secure and relaxed in everyday life.
  - spiritual health and wellbeing: Not material in nature but relates to ideas, beliefs, values and ethics that arise in the minds and conscience of human beings. It includes the concepts of hope, peace, a guiding sense of meaning or value, and reflection on your place in the world. Spiritual health and wellbeing can be highly individualised; for example, in some spiritual traditions, it may relate to organised religion, a higher power and prayer, while in other practices, it can relate to morals, values, a sense or purpose in life, connection or belonging.
- Youth perspectives on the meaning and importance of health and wellbeing:
  - youth as a population group are generally very healthy and do not suffer from the wide range of illnesses that occur during adulthood.
- There are variations in the perspectives of, and priorities relating to, health and wellbeing, according to age, culture, religion, gender and socioeconomic status:
  - there can be changes in the values people have as they age, which can cause a variation in their priorities relating to health and wellbeing

  - › individuals can have different levels of access to knowledge, resources and expectations that enable them to fine-tune their perspectives, and the degree of importance they place on health and wellbeing.
- Aboriginal and Torres Strait Islander perspectives on health and wellbeing:
  - › the concept behind Aboriginal and Torres Strait Islander peoples definition of health and wellbeing is not just the physical wellbeing of an individual but the social, emotional and cultural wellbeing of the whole community in which each individual is able to achieve their full potential as a human being
  - › this holistic approach translates as a physical and spiritual connection to land or country as an important basis for the social and emotional wellbeing of Aboriginal and Torres Strait Islander peoples; kinship systems and community relationships are vital for supporting that connection to country and culture.

KEY QUESTIONS

SUMMARY QUESTIONS

1 State the World Health Organization's 1946 definition of health.
2 Describe the difference between health and wellbeing.
3 Create a summary table that includes:
   a the name of each dimension of health and wellbeing
   b an explanation of each dimension of health and wellbeing
   c examples of each dimension of health and wellbeing.
4 No single dimension of health and wellbeing works independently. Explain what this means.
5 Using examples, discuss how youth perceive the concept of health and wellbeing.
6 Describe culture.
7 Explain how culture can account for variations in people's perspective of health and wellbeing.
8 Describe gender.
9 Explain how socioeconomic status can account for variations in people's priorities relating to health and wellbeing.
10 Explain how culture, connection to land and kinship impact on Aboriginal and Torres Strait Islander peoples perspectives of health and wellbeing.

EXTENDED-RESPONSE QUESTION

QUESTION

'It is difficult to develop a universal definition of health and wellbeing.' Analyse this statement. (6 marks)

EXAMINATION PREPARATION QUESTIONS

Sam is a successful student and a very fit and skilled basketball player. Sam has just completed Year 11 and has a strong network of supportive friends. Sam was recently voted into the position of School Captain for Year 12. This has left Sam feeling a bit nervous, as balancing being School Captain, completing Year 12 and playing basketball could all end up being a bit too much. Sam generally feels relaxed in everyday life and has found basketball a great way to manage stress levels. Sam has very supportive family relationships, so he has been encouraged to give everything a go, but to always reach out for support if needed. These relationships help Sam feel like anything is possible. Playing basketball as part of a team has always been important for Sam and even when they don't win, the team members support each other and look forward to the next game. Sam is optimistic about the year ahead, feeling proud about being named School Captain, nervous and excited for the final year of school, and hoping for a grand final in basketball to make it the best year ever.

A Identify an example of each of the dimensions of health and wellbeing in the case study. (5 marks)

B Explain how three of Sam's dimensions of health and wellbeing have been affected by current circumstances. (3 marks)

C Explain how his health and wellbeing could be improved so that it corresponds to attaining optimal health and wellbeing as per the meaning of health in the World Health Organization's 1946 definition. (2 marks)

D Suggest how age could influence Sam's perspectives on, and priorities regarding, health and wellbeing. (4 marks)

2 EVALUATING THE HEALTH STATUS OF AUSTRALIAN YOUTH

KEY KNOWLEDGE

- The indicators used to measure the health status of Australians, including incidence and prevalence of health conditions, morbidity, rates of hospitalisation, burden of disease, mortality, life expectancy, core activity limitation, psychological distress and self-assessed health status
- The health status of Australia's youth.

KEY SKILLS

- Analyse the extent to which health status data reflect concepts of health and wellbeing
- Draw conclusions from health data about the health status of youth in Australia.

(VCAA Study Design, © VCAA)

INTRODUCTION

Understanding the central concepts relating to health and wellbeing, including the measurement of health status, is important to gain a more complete picture of the health outcomes being experienced by Australian youth. The level of ill-health among young people can be an indicator of social and economic factors and disadvantage being experienced by certain population groups. In recent decades, the death rates of young Australians have decreased dramatically because the measurement of health status for this population group has led to the development of a number of successful preventative programs. However, there are still further gains to be made in optimising the health and wellbeing of youth.

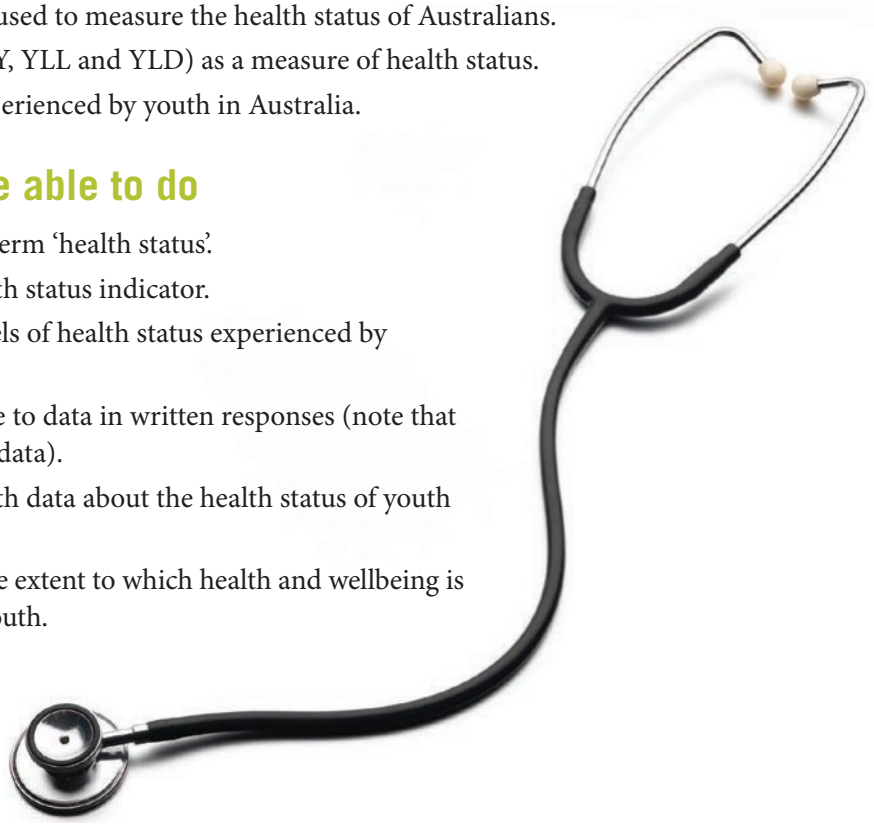
The first part of this chapter provides a detailed description of the various health status indicators used to measure Australia's health status. Data is provided to help develop data analysis skills and an understanding of each indicator. The second part of this chapter focusus on the analysis of each health status indicator in relation to youth health status. The extent to which health status data reflect concepts of health and wellbeing is also examined in this chapter.

What you need to know

- The meaning of the term 'health status'.
- The health status indicators used to measure the health status of Australians.
- The burden of disease (DALY, YLL and YLD) as a measure of health status.
- The level of health status experienced by youth in Australia.

What you need to be able to do

- Explain the meaning of the term 'health status'.
- Name and explain each health status indicator.
- Interpret data to explain levels of health status experienced by Australian youth.
- Interpret and make reference to data in written responses (note that you donot need to learn the data).
- Draw conclusions from health data about the health status of youth in Australia.
- Use health data to analyse the extent to which health and wellbeing is experienced by Australian youth.



2.1 MEASUREMENTS OF HEALTH STATUS

Health status refers to the overall health of an individual or a population, taking into account various factors such as life expectancy, amount of disability and levels of disease risk. An individual's or population's health status is an overall evaluation of the degree of wellbeing or illness being experienced. A number of indicators – including quality of life, average lifespan, the occurrence of disease and premature mortality – are used to determine the health status of individuals, populations and groups within populations.

In order for organisations – including government organisations – to determine and make judgements regarding the health status of a population, groups or individuals, data needs to be collected and interpreted. Data collection invariably occurs through the statistics gathered in relation to measurable indicators of health.

Generally, the data used to measure health status focus on assessing the level and distribution of health issues of a population. Even though the goal is to promote good health and wellbeing, this measurement has most often focused on the negative aspects of health and wellbeing, due to the fact that health and wellbeing is subjective (self-assessed), healthy people do not routinely come into contact with healthcare services and data of the negative aspects of health are often more easily accessible. Therefore, data focusing on illness, disease, disability and death is more easily collected than data focusing on the positive health and wellbeing of the population. Individual health status may also be gained by asking a person to assess or rate their own health by gauging physical function, emotional wellbeing, pain or discomfort, and overall perception of health.

health status: An individual's or a population's overall health, taking into account various aspects such as life expectancy, amount of disability, and levels of disease risk factors (AIHW, 2008).

FIGURE 2.1 Australian youth generally rate their health status positively.

Once collected and analysed, this data can provide feedback on the success of current actions implemented and inform future planning, policy development, health promotion programs and interventions aimed at addressing and improving the health status of Australians.

It is important to note that it can take a long time, many years even, before data collected is analysed and released. Data may also relate to different age ranges to those used in the VCAA Health and Human Development study design. When interpreting data, be mindful of age ranges provided and although the date of the data may not seem current, it may be the most up-to-date data available. Figure 2.2 identifies indicators used for measuring health status.

Self-assessed health status

Self-assessed health status provides an overall measure of a population's health and wellbeing based on a person's own perceptions of their health. Because health and wellbeing is recognised as having physical, social, mental, emotional and spiritual dimensions, data-based and more objective measurements such as mortality or life expectancy do not necessarily provide a broad measure of the health and wellbeing of a population. Self-assessed health status involves people being asked to rate their level

self-assessed health status: An overall measure of a population's health based on a person's own perceptions of their health.

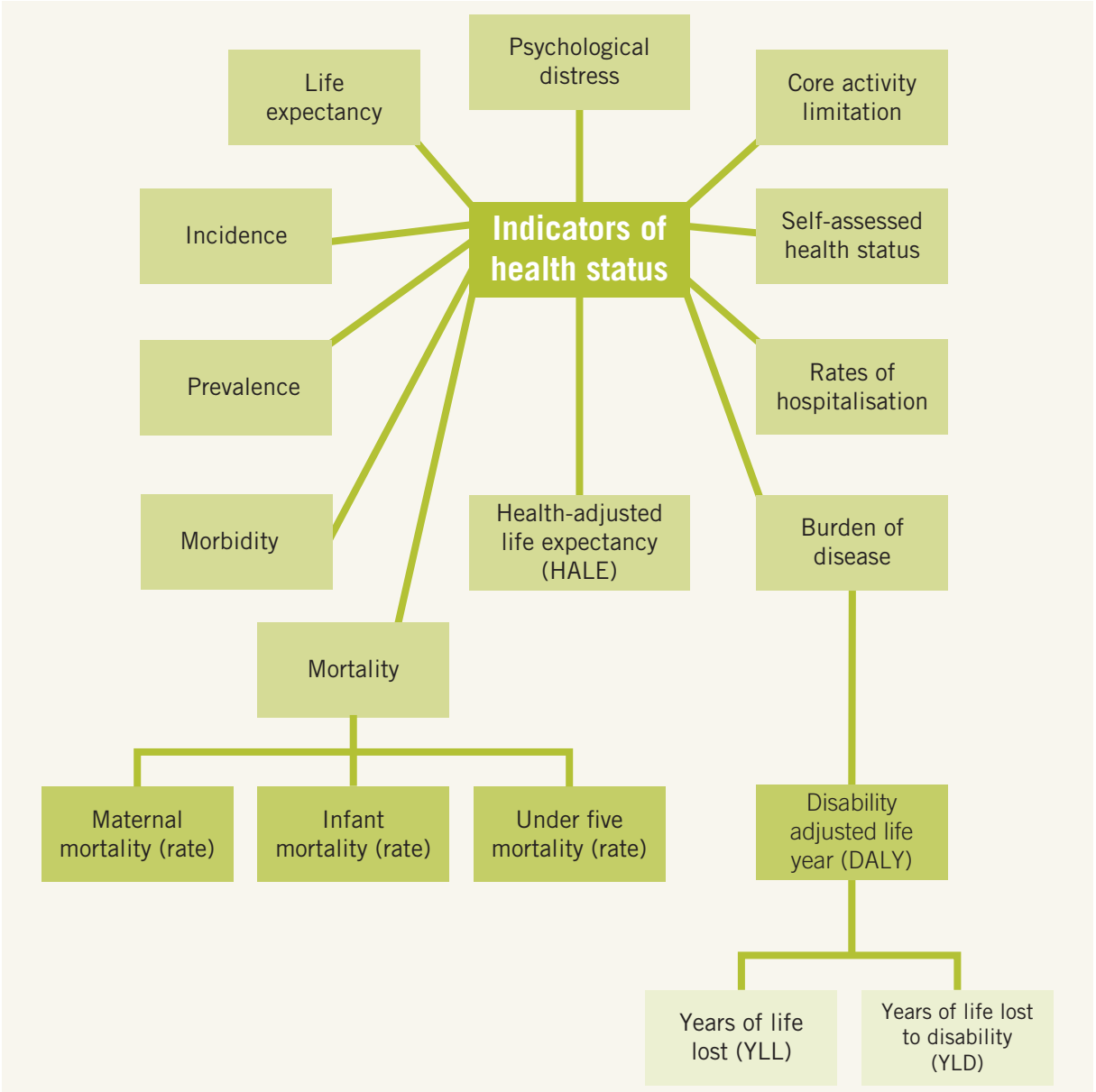
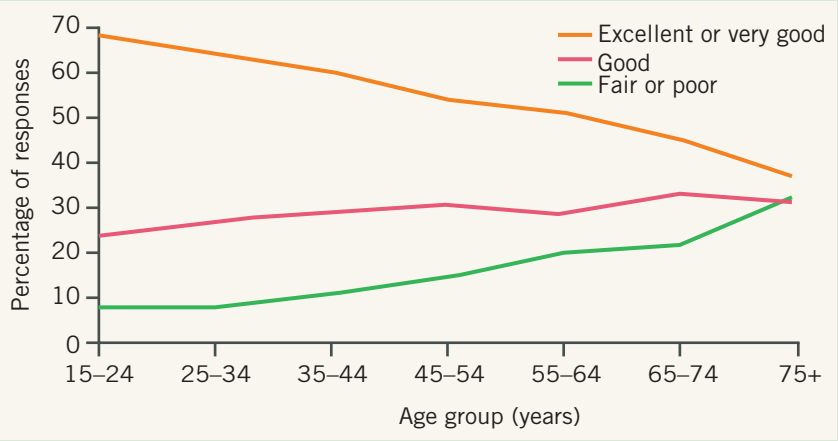


FIGURE 2.2 Measuring health status – key indicators

of health and wellbeing at a specific point in time. The levels are usually excellent, very good, good, fair and poor. Self-assessed health status is a subjective measurement dependent on an individual's awareness of all components of their health and wellbeing and provides a broad measure that may, or may not be, in line with a health professional's assessment or an objective health assessment technique. According to the *National Health Survey: First Results, 2017–18*, younger Australians generally rated themselves as having better health than older people, with over two-thirds (67.6%) of 15–24-year-olds rating their health as being excellent or very good.

EXTENSION QUESTION 2.1



Refer to the graph in Figure 2.3. Describe how the self-assessed health status of young people has changed over time. Explain why you think this trend exists.

SOURCE: National Health Survey: First Results 2017–18, ABS

FIGURE 2.3 Self-assessed health status of people aged 15 years and over, 2017–2018

Life expectancy

In the absence of comprehensive measures of the health and wellbeing of a population, the average lifespan (**life expectancy**) may be used as an indicator of health status. Life expectancy is frequently measured from birth but can be calculated from any age during the lifespan. It is one of the most commonly used health status measures. Life expectancy is a measure of the quantity (number) of years of life someone can expect to live. However, life expectancy does not provide details regarding the quality of life lived. Life expectancy also changes over a person's lifetime; as individuals survive through the various lifespan stages, the likelihood of living beyond the predicted life expectancy at birth increases. Table 2.1 indicates that life expectancy for Australian males and females has been increasing over time and for each age group.

Mortality and morbidity

Mortality data are routinely collected and readily available and are therefore the most often used instrument for monitoring health and wellbeing. Mortality refers to the number of deaths caused by a particular disease, illness or other environmental factor. Causes of death are also widely used for international comparisons of health and wellbeing, and levels of disease. **Mortality rates** can be calculated for deaths from specific causes and for specific age groups such as youth, gender groupings and population groups.

life expectancy: An indication of how long a person can expect to live; it is the number of years of life remaining to a person at a particular age if death rates do not change (AIHW, 2008).

mortality: The number of deaths caused by a particular disease, illness or other environmental factor.

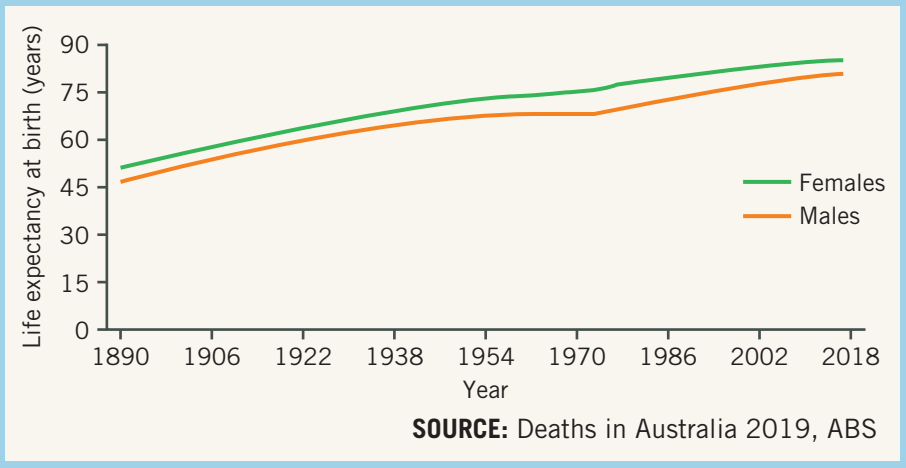
mortality rate: The mortality rate is equivalent to the number of deaths in the population during a specified time period, divided by the total number of persons in the population during the specified time period.

TABLE 2.1 Life expectancy (expected age at death in years) at different ages by sex, 1881–90, 1960–62 and 2015–17

AGE (YEARS)	MALES 1881–90	MALES 1960–62	MALES 2015–17	FEMALES 1881–90	FEMALES 1960–62	FEMALES 2015–17
0 (birth)	47.2	67.9	80.5	50.8	74.2	84.6
1	54.3	69.5	80.8	57.4	75.5	84.9
15	59.5	70.1	80.9	62.5	76.0	85.0
25	62.1	70.8	81.2	64.7	76.3	85.1

SOURCE: AIHW, 2019

ACTIVITY 2.1: DATA ANALYSIS – LIFE EXPECTANCY



SOURCE: Deaths in Australia 2019, ABS

FIGURE 2.4 Life expectancy (years) at birth by sex, Australia, 1890–2018

1 Explain what is meant by life expectancy.
2 Describe the trend in life expectancy for Australian males and females between 1890 and 2018.
3 Using the data in Figure 2.4, outline the difference in life expectancy for males and females.
4 Australians experience one of the highest life expectancies in the world. Identify and explain two reasons that may account for this trend.

The occurrence of disease and illness in a population is another measure of health status and is known as **morbidity**. Morbidity refers to the ill-health in an individual and the levels of ill-health in a population or group. According to the World Health Organization (WHO), morbidity can be measured in terms of the number of individuals who are ill, the illnesses these individuals are experiencing and the duration of these illnesses.

morbidity: Refers to ill-health in an individual and the levels of ill-health in a population or group. (AIHW, 2008)

rates of hospitalisation: The number of patients who experience an episode of admitted patient care.

Morbidity data cover a range of issues that cause ill-health, from long-term conditions such as short-sightedness and hayfever to disability as well as the prevalence and incidence of diseases such as diabetes mellitus and mental health conditions. However, compared with mortality data, the collection of morbidity data is often incomplete and poses significant measurement problems. Morbidity data may be collected through hospital morbidity records as well as from specific surveys of the population. Morbidity data is useful for determining patterns of disease occurrence.

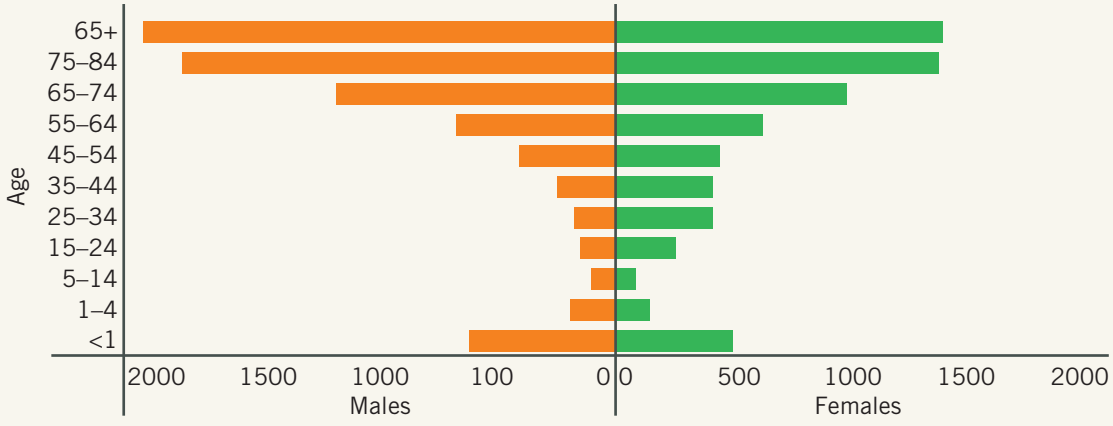
Further measures relating to levels of morbidity and disability

Rates of hospitalisation

Rates of hospitalisation measure the number of patients who experience an episode of admitted patient care. Hospitalisation usually starts with the formal admission process and ends with the formal separation process (from admission to discharge, transfer or death). Hospitalisation can start with an admission to hospital for treatment or rehabilitation or admission via emergency due to a medical emergency. When looking at data, a rate of hospitalisation is often expressed as 'hospital separation'. The rate of hospitalisation data provides information regarding the severity and types of conditions that required medical intervention.

EXTENSION QUESTION 2.2

Discuss the possible conditions that may contribute to the hospitalisation rates of Australian youth. Identify whether male or female youth are more likely to be hospitalised for each condition.



SOURCE: AIHW, 2019

FIGURE 2.5 Hospitalisations per 1000 population, by age group and sex, 2017–18

TABLE 2.2 Separations by age group and sex, all hospitals, 2017–18

AGE GROUP (YEARS)	SEPARATIONS		
	MALES	FEMALES	PERSONS
10–14	70 653	59 206	129 866
15–19	106 506	143 819	250 342

SOURCE: Admitted Patient Care 2017–18, AIHW, May 2019

Psychological distress

Psychological distress refers to an individual's overall level of psychological strain or pain, and the unpleasant feelings and emotions an individual experiences, that interferes with their ability to perform daily activities. Psychological distress occurs when events or stressors place demands upon us that we are unable to effectively cope with, which leads to negative views of oneself, others and the environment. Examples of such stressors in youth include starting a new job or school, being a victim of bullying, having difficulty at school or home, and mental illness including anxiety. Each person experiences psychological distress differently; it is dependent on the situation and how it is perceived by the individual.

psychological distress: Refers to an individual's overall level of psychological strain or pain, and the unpleasant feelings and emotions an individual experiences, that interferes with their ability to perform daily activities.

Psychological distress is commonly measured in Australia by using the Kessler Psychological Distress Scale (K10). Measuring psychological distress provides informative data on the mental health and wellbeing of a population, but it is only one such measurement. It is not a diagnosis of mental illness. The Kessler Psychological Distress Scale is based on 10 questions about an individual's emotional state over the past four weeks. The K10 was developed to provide a measure of anxiety and depressive symptoms (levels of negative emotional states) in the general population. It is scored from 10–50, with higher scores indicating a higher level of distress and lower scores indicating a low level of distress.

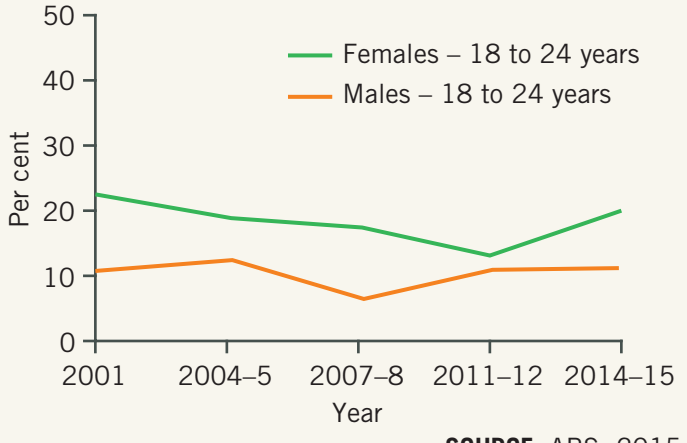
Data released by headspace as part of National Mental Health Week highlights the levels of psychological distress among young Australians. It has been found that in 2018:

- Nearly one in three (32 per cent) young Australians (12–25-year-olds) are reporting high or very high levels of psychological distress – more than triple the rate in 2007 (9 per cent).
- Rates of psychological distress are significantly higher among young women (38 per cent compared to 26 per cent of young men).
- Eight to 21-year-olds are reporting the highest levels of psychological distress (38 per cent compared to 20 per cent of 12–14-year-olds).
- Victoria has the highest percentage of young people reporting high or very high levels of psychological distress – 35 per cent compared to 33 per cent in WA and SA, 31 per cent in NSW and 29 per cent in Queensland.

Research consistently indicates that a considerable proportion of the Australian population, at any age, will experience psychological distress or a mental illness at some time in their life. There is help available. If you or someone you know is experiencing difficulty, please access support.

If you or someone you know needs help please call:
Lifeline 13 11 14 Beyond Blue 1300 22 4636 Kids Helpline 1800 55 1800

EXTENSION QUESTION 2.3



SOURCE: ABS, 2015

Discuss the reasons why youth may experience psychological distress.

FIGURE 2.6 High and very high psychological distress, by sex

Core activity limitation

According to *Australia's Health 2018*, in 2015, 1.4 million people (5.8 per cent of the population) had a severe or profound **core activity limitation** – that is, a limitation in communication, mobility and/or self-care activities. However, rates are falling as overall the proportion of people with a severe or profound core activity limitation has decreased since 2003.

Core activity limitation is closely associated with the term **disability**. Disability relates to an impairment of body structure or function, a limitation in activities, or a restriction in participation.

While core activity limitation refers to needing assistance with self-care, mobility and/or communication when performing everyday tasks, it also relates to using aids or equipment to conduct activities that most people undertake daily. There are four levels of core activity limitation: mild, moderate, severe and profound. Mild or moderate core activity limitation is when a person doesn't need help but has mild to moderate difficulty with core activities and needs to use aids or equipment. They may also have one or more of the following limitations:

- cannot easily walk 200 metres
- cannot walk up and down stairs without a handrail
- cannot easily bend to pick up an object from the floor
- have difficulty in using, or cannot use, public transport
- can use public transport but need help or supervision.

Severe or profound core activity limitation is when a person needs help or supervision with most (severe) or all tasks or activities (profound) that the majority of people undertake at least daily.

FIGURE 2.7 A young person requiring a wheelchair and assistance as a result of core activity limitation.

Burden of disease

The commonly used measures of mortality and morbidity are useful for providing data about the health and wellbeing of a population. These measures also assist in the analysis of the consequences of disease. They are inadequate, however, for assessing people who are not ill but have some limited function that affects their everyday life. During the last few decades, new health indicators or health outcome measures have been developed to assist in the analysis of the consequences of disease and the burden it places on the populations.

core activity limitation: Refers to needing assistance with self-care, mobility and/or communication.

disability: An impairment of a body structure or function that results in a limitation in activities or a restriction in participation.

SOURCE: Adapted from ABS, 2017

FIGURE 2.8 Core activity limitation involves requiring assistance or aids to complete daily activities.

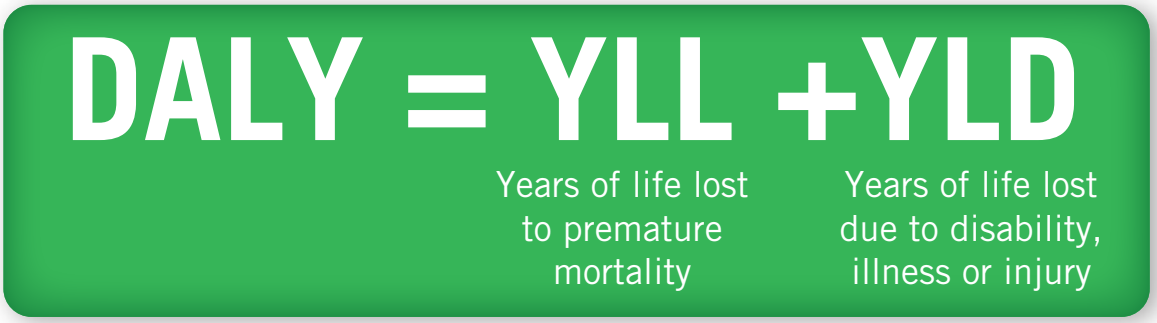


FIGURE 2.9 Disability adjusted life years (DALYs)

Burden of disease is a concept that was developed to describe the impact of death and loss of healthy life due to disease, injuries and disability for all regions of the world. It is a measure of the amount of disease or illness in a population. Therefore, burden of disease is referred to as a measure of the impact of diseases and injuries; specifically, it measures the gap between current health status and an ideal situation where everyone lives to an old age free of disease and disability. Burden of disease is measured in a unit called the **disability adjusted life year (DALY)**.

burden of disease: A measure of the impact of diseases and injuries. Specifically, it measures the gap between the current health status and an ideal situation where everyone lives to an old age free of disease and disability. Burden of disease is measured in a unit called the DALY.

disability adjusted life year (DALY): A measure of the burden of disease. One DALY equals one year of healthy life lost due to premature death and time lived with illness, disease or injury.

years of life lost (YLL): The fatal burden of disease of a population, defined as the years of life lost due to death.

years lost due to disability (YLD): The non-fatal component of the disease burden; a measurement of the healthy years lost due to diseases or injuries.

DALYs are a measure of the years of healthy life lost due to premature death, illness or injury. One DALY is equal to one year of healthy life lost as a consequence of premature death and time lived with illness, disease or injury. The DALY has been specifically developed in order to enable international comparative assessments in health and wellbeing on an equal basis. The more DALY's (lost 'healthy life') a population has, the greater the burden of disease that population is experiencing. That loss of healthy life can be from premature death, prolonged illness or disability, or a combination of both.

DALY's are measured through the use of two key indicators: **years of life lost (YLL)** and **years lost due to disability (YLD)**. YLL refers to the fatal burden of disease of a population and is defined as the years of life lost due to premature death. YLD refers to the non-fatal component of the burden of disease and is a measurement of the healthy years lost due to disease, injury or disability.

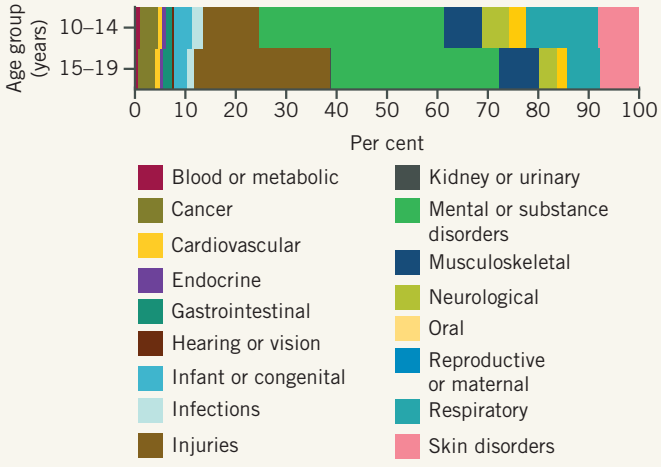


FIGURE 2.10 Relative proportion (%) of total burden (DALY) for *males*, by disease group and age group, 2015

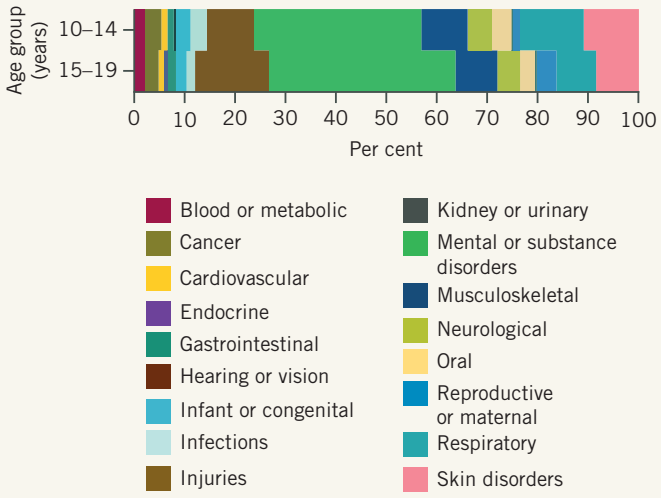


FIGURE 2.11 Relative proportion (%) of total burden (DALY) for *females*, by disease group and age group, 2015

Incidence and prevalence

Incidence and **prevalence** are terms used when measuring morbidity data. Incidence is the number or rate of new cases of a particular condition during a specific time. Prevalence refers to the total number of people experiencing a particular condition at a specific time. Health trends in relation to prevalence rates are frequently used to help predict future incidence rates for particular conditions. Analysis of data trends also allows for the creation of appropriate health interventions to improve health and wellbeing.

incidence: The number or rate of new cases of a particular condition during a specific time.

prevalence: The number or proportion of cases of a particular disease or condition present in a population at a given time (AIHW, 2008).

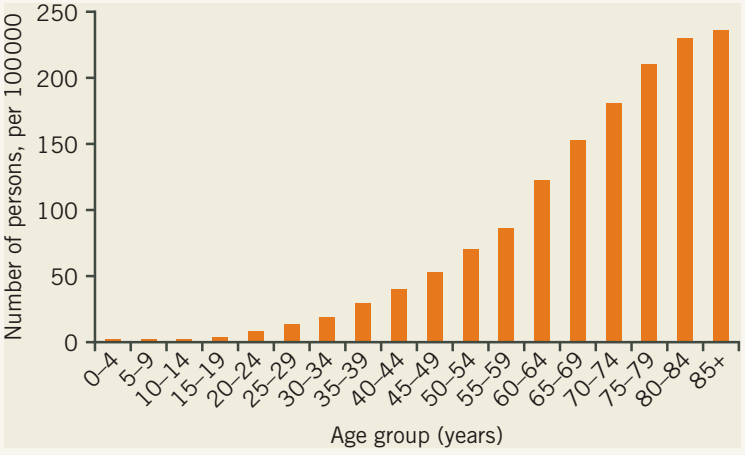
EXTENSION QUESTION 2.4

Mental health conditions are a leading cause of the burden of disease. Using the terms DALY, YLL and YLD, justify this statement.

FIGURE 2.12 Mental health conditions (e.g. anxiety) contribute significantly to the non-fatal burden of disease for youth, particularly for females.

EXTENSION QUESTION 2.5

Identify the relationship that is evident in the graph below and suggest reasons for this trend.



SOURCE: Cancer Australia, 2017

FIGURE 2.13 Estimated age-specific incidence rates of new cases of melanoma of the skin, 2017

ACTIVITY 2.2: DATA ANALYSIS – BURDEN OF DISEASE

Rank	Females 5–14	Females 15–24	Males 5–14	Males 15–24
1st	Asthma (7.0; 12.4%)	Anxiety disorders (14.5; 11.3%)	Asthma (9.2; 13.7%)	Suicide/self-inflicted injuries (19.7; 12.8%)
2nd	Anxiety disorders (6.1; 10.8%)	Depressive disorders (11.4; 8.9%)	Anxiety disorders (7.0; 10.5%)	Alcohol use disorders (11.1; 7.2%)
3rd	Depressive disorders (4.7; 8.3%)	Asthma (9.2; 7.1%)	Conduct disorder (4.6; 6.9%)	RTI/motor vehicle occupant (8.7; 5.7%)
4th	Dental caries (2.9; 5.2%)	Back pain and problems (7.7; 6.0%)	Depressive disorders (4.1; 6.1%)	Depressive disorders (8.3; 5.4%)
5th	Conduct disorder (2.8; 4.9%)	Suicide/self-inflicted injuries (7.6; 6.0%)	Autism spectrum disorders (3.6; 5.3%)	Back pain and problems (7.8; 5.1%)

SOURCE: AIHW Australian Burden of Disease study, 2015

FIGURE 2.14 Leading causes of total burden of disease (DALY, per 1000 population, proportion percentage) for females and males by age group, 2015

1 Define burden of disease.
2 Explain YLL and YLD.
3 Discuss why the burden of disease has been developed as a measure of health status.
4 Examine Figure 2.14. For males and females in each age group, identify the two diseases or conditions that were the leading cause of the burden of disease in Australia in 2015.
5 Examine Figure 2.14. For two diseases or conditions, compare the DALYs between males and females in each age group.
6 Identify the age group and the condition for which there will be a significant difference between YLL and YLD.

2.2 THE HEALTH STATUS OF AUSTRALIAN YOUTH

Health and wellbeing are influenced by a range of factors, and while the health and wellbeing of Australia's youth is generally rated as being good, the risk-taking that is associated with the youth stage of the lifespan can have a detrimental impact on young people.

Also, many unhealthy influences on health and wellbeing are established during youth, such as tobacco use, poor dietary habits, alcohol misuse, illicit drug use and physical inactivity. When continued into adulthood, these can sometimes lead to chronic health problems.

This part of the chapter focuses on the application of the health status measures previously discussed to draw conclusions about the health outcomes (health status and health and wellbeing) of youth in Australia.

It should be noted that data collected by organisations in relation to youth may overlap with other stages of the lifespan. This overlap recognises the fact that the transition from childhood to adulthood is a gradual process that begins and ends at different ages for different individuals. Therefore, as stated earlier in this chapter, some of the data being analysed in this chapter may extend beyond 18 years of age or may not cover the full age range of 12–18 years that VCE Health and Human Development recognises as the time period in the lifespan for youth.

According to Mission Australia's *Youth Survey Report 2019*, when young people (25 000 Australians aged 15–19 years old) were asked to self-assess (rate) how happy they were with their life as a whole on a scale of 0 to 10 – where 0 indicates that they felt very sad and 10 indicates that they felt very happy – the majority of young people (60.7 per cent) felt happy overall with their lives. Further results from this survey are presented in Table 2.3.

FIGURE 2.15 Most Australian youth are in good health.

While many young Australians are experiencing very good health and wellbeing, there are some who are considerably unhealthier and experiencing reduced health and wellbeing. In particular, Aboriginal and Torres Strait Islander youth continue to be disadvantaged across a broad range of health and wellbeing issues.

TABLE 2.3 Young people's self-reported feelings of happiness by gender, 2019

RATING	NATIONAL %	FEMALES %	MALES %
Happy or very happy	60.7	57.6	66.6
Not happy or sad	28.2	30.6	24.8
Sad or very sad	11.1	11.8	8.6

SOURCE: Mission Australia's Youth Survey Report 2019, p. 36

overweight: A condition in which a person's weight is above 'normal' weight, or they have a body mass index of 25 or less than 30.

obese: When a person's weight is above 'normal' weight, or they have a body mass index of 30 or more.

As Table 2.4 shows, 51.4 per cent of Aboriginal and Torres Strait Islander respondents reported feeling happy overall with their lives compared with 61.4 per cent of non-Indigenous young people. Aboriginal and Torres Strait Islander health outcomes are greatly influenced by external factors such as their geographical location, level of education and family income level. These factors are making it difficult for Aboriginal and Torres Strait Islander youth to experience the same gains in health and wellbeing that are being experienced by other Australian youth. This indicates that further achievements can be made in promoting health and wellbeing for this group within the population.

In recent years, the declining rates of mortality and morbidity for some health issues has led to improved health status among Australian youth. However, the main health and wellbeing concerns contributing to burden of disease for youth continue to include mental health issues, chronic conditions such as asthma, being **overweight** or **obese**, and injuries. These health concerns contribute to more ill health (YLD), which accounts for more disease burden than dying prematurely (YLL).

TABLE 2.4 Aboriginal and Torres Strait Islander youth happiness ratings by gender

HAPPINESS RATING	NON-INDIGENOUS RESPONDENTS %	ABORIGINAL AND TORRES STRAIT ISLANDER RESPONDENTS %	ABORIGINAL AND TORRES STRAIT ISLANDER FEMALES %	ABORIGINAL AND TORRES STRAIT ISLANDER MALES %
Happy or very happy	61.4	51.4	47.8	59.2
Not happy or sad	28.0	30.5	33.4	28.7
Sad or very sad	10.6	18.0	18.8	12.1

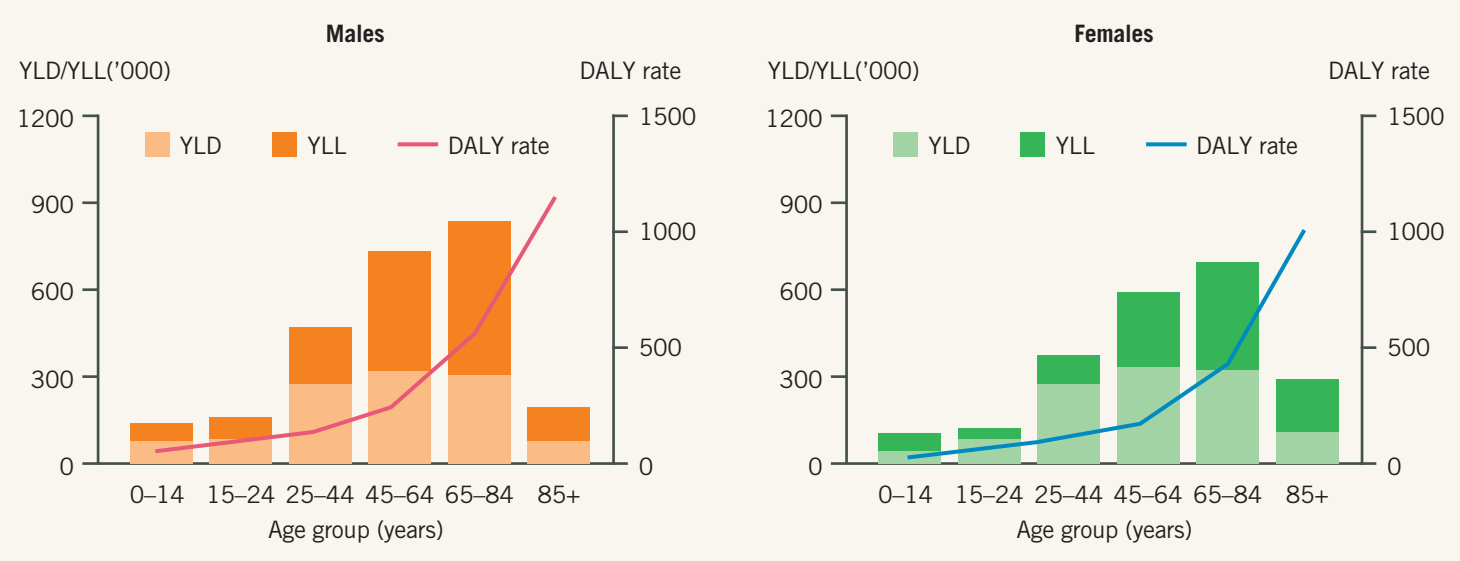


FIGURE 2.16 Non-fatal (YLD) and fatal (YLL) composition of the total burden (DALY), and DALY rates (DALY per 1000 population), by sex and age group, 2015

FIGURE 2.17 Aboriginal and Torres Strait Islander peoples continue to be disadvantaged across a range of factors.

2.3 YOUTH MORTALITY

Mortality rates and causes of mortality are key indicators of the health and wellbeing of a population. Mortality data also provide information on underlying risk factors and environmental conditions that may, in turn, determine health focuses and policy development undertaken by the government and non-government organisations. For example, the Council of Australian Governments (COAG) Health Council created a strategic framework for child and youth health and wellbeing (Healthy, Safe and Thriving) in order to increase recognition of the importance of the health and wellbeing of young people.

Mortality among young people is generally measured as the number of deaths of young people aged 15–24 years per 100 000 young people of the same age group.

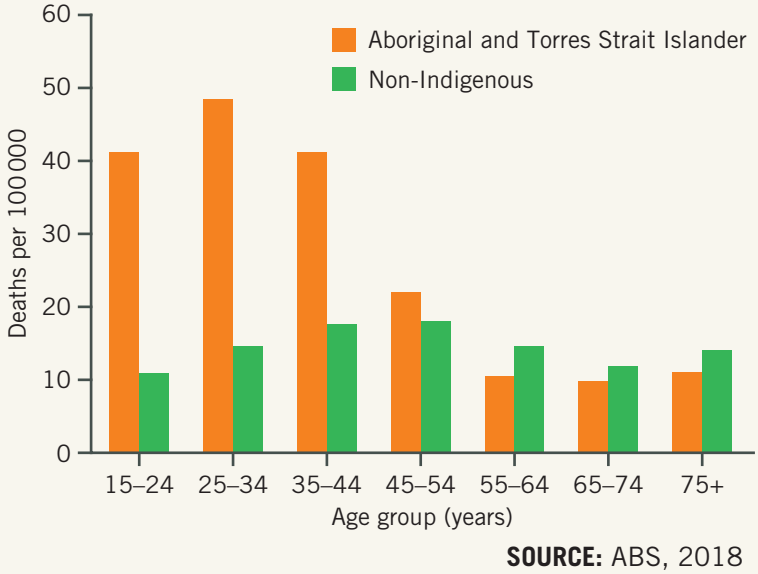
The rates of mortality among young people are considered to be mainly potentially avoidable. For youth, any existing health trends may be exacerbated or created by increased independence, which leads to new experiences such as driving, employment and exposure to alcohol and drugs.

In Australia, the last few decades have seen dramatic declines in the death rates for youth – particularly males; however, males still account for the majority of all youth deaths, a trend that has been consistent since data on youth mortality has been collected.

Over the last decade, the leading causes of mortality for young people have consistently been related to external causes of death such as accidents. Injury and poisoning (including transport accidents and suicide) are the leading causes of mortality for Australian youth.

The mortality rates for females are approximately half those for males. This is due mainly to the higher rates of male deaths due to transport accidents and suicide (also referred to as intentional self-harm) compared with females.

Mortality rates for young Aboriginal and Torres Strait Islander peoples are also higher than non-Indigenous populations. Intentional self-harm was the leading cause of death for Aboriginal and Torres Strait Islander persons between 15–34 years of age in 2017, with an age-specific death rate of 47.2 per 100 000 persons and rates over three times that of non-Indigenous Australians. This age group accounted for 67.3 per cent of all Aboriginal and Torres Strait Islander intentional self-harm deaths (see Figure 2.18).



SOURCE: ABS, 2018

FIGURE 2.18 Age-specific rates for intentional self-harm, by Indigenous status, 2013–17. Aboriginal and Torres Strait Islander youth have over three times the rate of intentional self-harm compared to non-Indigenous populations.

Cancer is uncommon in youth compared with adults, with an incidence rate of 21.5 per 100 000 among youth aged 15–19 years (Cancer Australia, 2017). Because the overall death rate per 100 000 young people is so low, even though cancer rates are extremely low compared with adulthood, they are still one of the leading causes of death from disease for this age group. The main forms of cancer contributing to the mortality rates of this group are leukaemia, brain cancer, melanoma and lymphomas.

ACTIVITY 2.3: DATA ANALYSIS – LEADING CAUSES OF DEATH IN AUSTRALIA

Age group (years)	1st	2nd	3rd	4th	5th
Under 1	Perinatal and congenital conditions	Other ill-defined causes	Sudden Infant Death Syndrome	Accidental threats to breathing	Influenza and pneumonia
1–14	Land transport accidents	Perinatal and congenital conditions	Brain cancer	Accidental drowning and submersion	Leukaemia
15–24	Suicide	Land transport accidents	Accidental poisoning	Assault	Other ill-defined causes
25–44	Suicide	Accidental poisoning	Land transport accidents	Coronary heart disease	Breast cancer
45–64	Coronary heart disease	Lung cancer	Colorectal cancer	Suicide	Breast cancer
65–74	Lung cancer	Coronary heart disease	Chronic obstructive pulmonary disease	Colorectal cancer	Cerebrovascular disease
75–84	Coronary heart disease	Dementia and Alzheimer's disease	Cerebrovascular disease	Lung cancer	Chronic obstructive pulmonary disease
85+	Coronary heart disease	Dementia and Alzheimer's disease	Cerebrovascular disease	Chronic obstructive pulmonary disease	Heart failure

SOURCE: AIHW, 2019

FIGURE 2.19 The leading underlying causes of death, by age group, 2015–17

Refer to Figure 2.19 and answer the following questions.

1. Discuss the similarities and differences between the causes of death across the age groups.
2. Identify the leading two cause of mortality for youth aged 15–24 years. Suggest reasons for why these causes of mortality are the leading causes of mortality for youth.
3. State whether you think there are differences between the causes of death for young males compared with young females. Explain your response.
4. Suggest how the number of deaths from land transport accidents and accidental poisonings might be reduced.
5. Discuss possible reasons for the difference in leading causes of death between the age groups 15-24 and 75-84 years.

2.4 YOUTH MORBIDITY

The morbidity that young Australians experience is significantly different from that experienced by adults, particularly when it comes to the prevalence of chronic diseases. Youth is also a time in the lifespan where external factors and behaviours that impact on health status can have significant consequences during adulthood.

In adolescents and young adults, ill health accounts for more burden than dying prematurely. The burden of disease for the youth population group is determined by data based on DALYs measurements. This information provides a more comprehensive view of the level of health and wellbeing of young people compared with statistics on mortality alone. DALYs provide information on the quality of life experienced by including data on non-fatal illnesses and conditions.

According to the AIHW's report, *Australian Burden of Disease Study 2015*, young Australians experienced substantial non-fatal burden from mental and substance-use disorders (including anxiety and depressive disorders) and respiratory diseases (mostly asthma).

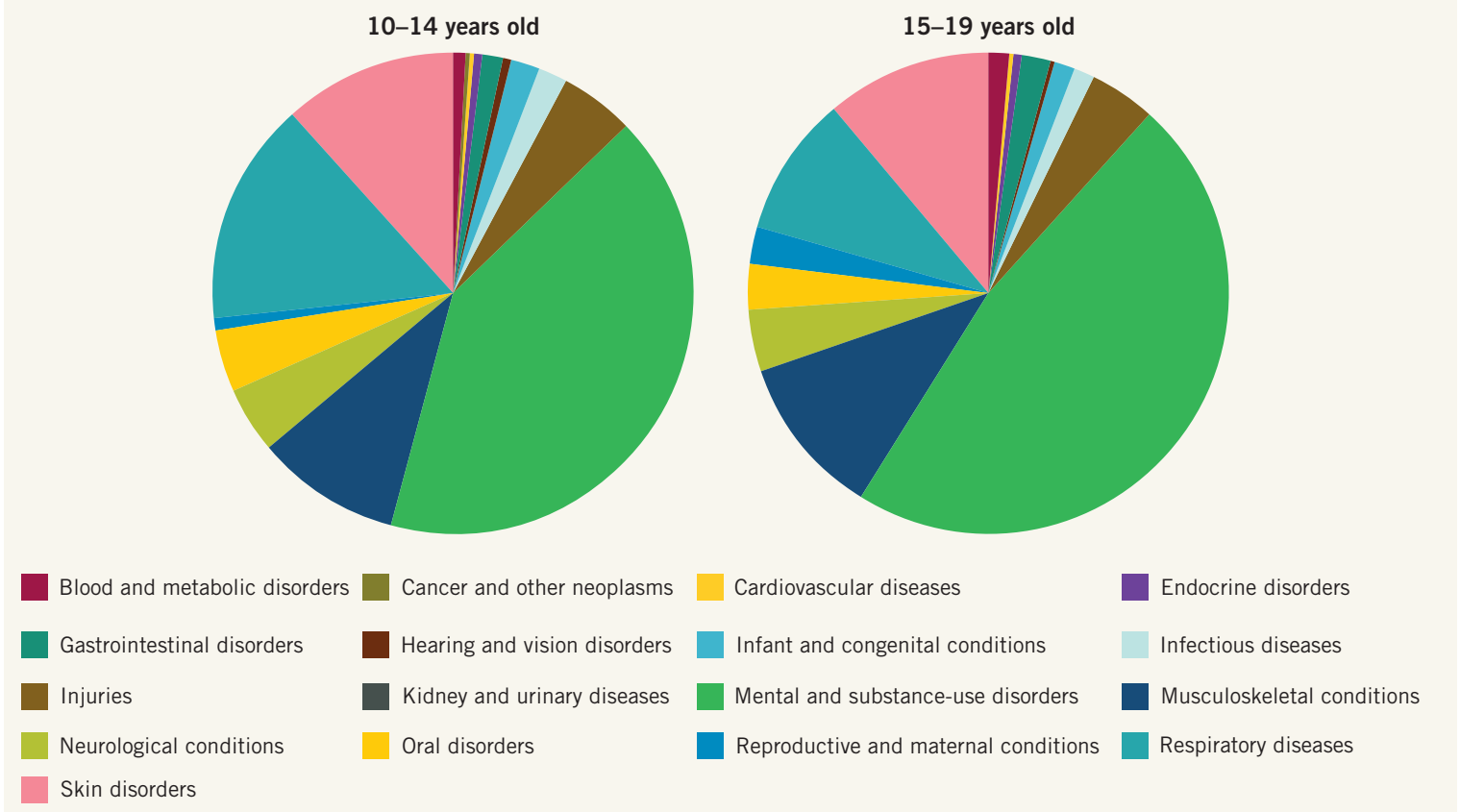
According to the AIHW's report, *Australia's Health 2018*, 14 per cent of children and young people will experience a mental illness in any year.

Mental health disorders, injuries, core activity limitation and obesity will be explored further in relation to impact on morbidity and burden of disease, as will the common long-term and chronic conditions of asthma, diabetes mellitus and cancer, which are experienced by youth in Australia.

Mental health disorders

> Unlike many other conditions, the proportion of people with a mental or behavioural condition does not increase with age. The highest proportion of people affected was found in the 15–24-year-old age group where 30 per cent of females and 21 per cent of males had a mental or behavioural condition (ABS, 2017–18).

Mental health disorders account for a large percentage of the burden of disease among Australian youth, with anxiety and depression the leading specific causes for both males and females.

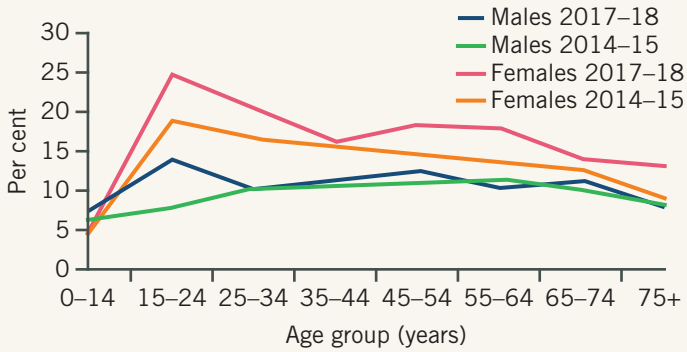


SOURCE: AIHW, Australian Burden of Disease Study: Impact and Causes of Illness and Death in Australia 2015

FIGURE 2.20 Relative proportion of non-fatal burden (YLD), by disease group and age group, 2015

The burden of disease from anxiety-related conditions peaks for females in the age group of 15–24 years and is greater than the rate for males. According to the ABS, during 2014–2015 a higher proportion of females than males reported anxiety related conditions, particularly those aged 15–24 years (19 per cent and 8 per cent respectively) ('Gender Indicators', ABS, 2018).

The increase in rates of anxiety-related conditions between 2014–2015 and 2017–2018 was predominately in the younger age groups. For females aged 15–24 years, the proportion with anxiety-related conditions increased from 18.9 per cent in 2014–2015 to 24.6 per cent in 2017–2018. For males of the same age, the rate of anxiety-related conditions almost doubled between 2014–2015 and 2017–2018 (7.9 per cent to 13.9 per cent) (ABS, 2019) (see Figure 2.21).



SOURCE: ABS, 2019

FIGURE 2.21 Proportions of persons with anxiety-related conditions, 2014–15 and 2017–18

Mental health illnesses, if unresolved, can affect all aspects of health and wellbeing, and may lead to risky behaviours such as substance abuse in young people. Certain mental health disorders, such as ADHD and depression, have implications for a young person's educational and occupational attainment, and thereby potentially have lifelong detrimental outcomes in terms of health and wellbeing.

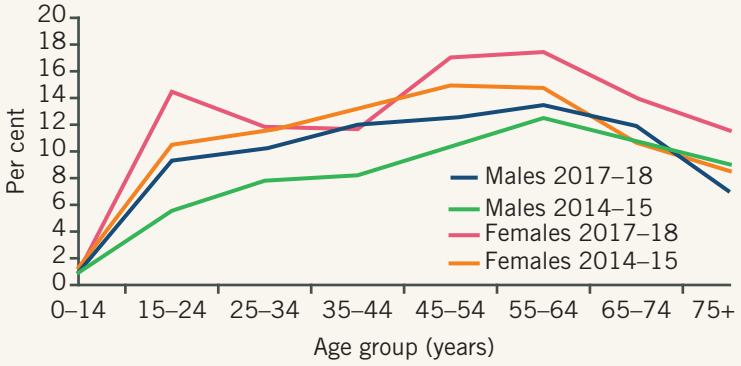
Poor mental health and wellbeing during youth can also have a strong influence on the occurrence of mental disorders later in life. Experiencing a mental disorder is also a risk factor for self-harm and suicide. In particular, the presence of depression is a strong predictor of suicide due to the psychological distress that is experienced.

The factors that can contribute to mental health disorders in young people include:

- genetic factors
- physical and/or intellectual disability
- under-developed social skills
- low self-esteem
- experiencing bullying
- failure to achieve academically
- physical or psychological **trauma**, such as sustaining injuries, or experiencing abuse or neglect
- witnessing family violence and loss of family
- refugee status
- racism and discrimination.

trauma: A person's response to a major catastrophic event that is so overwhelming it leaves that person unable to come to terms with it (source: Australians Together).

The results from Mission Australia's *Youth Survey Report 2019* indicate that young people (aged 16–24 years) identified mental health as the most important issue facing Australia today (33 per cent). Often a high level of psychological distress indicates a higher likelihood of serious mental illness, and the findings of the survey also indicate that females continue to report higher levels of concern in relation to coping with stress, school or study problems, and body image than young males. Mission Australia's report also indicated that mental illness and coping with stress are two of the three most common areas of personal concern for Australian youth, while mental illness was one of the top three barriers to achieving post-school goals.



SOURCE: National Health Survey: First Results 2017–18

FIGURE 2.22 The proportion of males and females with depression or feelings of depression by age group, 2014–15 and 2017–18

Furthermore, in relation to Aboriginal and Torres Strait Islander youth:

> Also evident from this report was that Aboriginal and Torres Strait Islander respondents also indicated coping with stress and mental health as the top issue of personal concern, and identified mental health as the most important issue facing Australia today. Of concern, however, is that almost one in five (18.5 per cent) Aboriginal and Torres Strait Islander respondents felt sad or very sad with life as a whole in comparison to around one in 10 (9.4 per cent) non-Indigenous young people (Deadly Story Youth Survey, 2018).

ACTIVITY 2.4: MEDIA ARTICLE

Read the following media article, then respond to the questions that follow.

Young Australians believe mental health is one of the top three issues facing the country, survey finds

By Mazoe Ford and Raveen Hunjan, *ABC News*, 7 December 2016

Young people have put the spotlight on mental health in a new survey, naming it as one of the top three issues facing Australia.

Key points:

- Mission Australia's survey included 22 000 respondents aged 15–19.
- Results show concerns about mental health have doubled in the past five years.
- Young women are twice as likely to consider mental health a national concern.

Mission Australia's Youth Survey this year found concerns about mental health across the country have doubled since 2011.

About 22 000 young people aged 15–19 took part in the survey and more than 20 per cent cited mental health as among their top national issues.

Alcohol and drugs were cited as their top concern, followed by equity and discrimination.

Mission Australia chief executive Catherine Yeomans said concerns about mental health were at their highest level in the survey's 15-year history. 'If young people are telling us that they think this is one of the top three concerns facing the nation, then we should sit up and pay attention and we should think about whether we've got the right responses in place', she said. 'Let's look at the issues that [we] are facing right across the country and put in programs that are going to support young people.'

Results 'not surprising' for many

The results did not surprise 19-year-old Savannah van der Veer, who has managed depression and obsessive compulsive disorder for more than a decade. 'People don't take you seriously, they just assume all children are kind of moody and unusual – they do strange things that don't make sense', she said.

'But I was really suffering and I didn't really know how to talk about it and I didn't really know that what was happening to me wasn't normal.'

Miss van der Veer said she turned to her mother and counsellors for support.

Youth mental health group batyr held more than 150 workshops in Australian high schools last year. The program is facilitated by young people who have experienced mental health issues.

'What our programs are designed to do is to make it OK to not be OK – to show young people that there are people out there like them who are suffering and going through tough times but that we can talk about it as a group', chief executive Sam Refshauge said.

…

If you or someone you know needs help, call:

- Lifeline on 13 11 14
- Kids Helpline on 1800 551 800
- MensLine Australia on 1300 789 978
- Suicide Call Back Service on 1300 659 467.

SOURCE: ABC News, 7 December 2016

1 Suggest reasons why concerns about mental health have increased among young people in recent years.
2 Explain why young women are more likely to have indicated that they have mental health concerns than young men.
3 Research and describe a strategy or initiative that is currently being used to support young people with mental health issues.
4 Explain how this strategy or initiative has been successful in its support for young people experiencing mental health issues.

Injuries

Not all injuries result in death. Injuries and poisoning are the second-highest contributor to morbidity and ill-health in young people. Injuries are also one of the main reasons why young people are hospitalised. Given that risk-taking behaviour is particularly prevalent during the youth stage of the lifespan, injury rates generally are quite high compared with other stages of the lifespan. Injuries during youth can also be attributed to factors including increasing independence, experiencing new situations, the strong influence of peers, the motivation to impress friends, wanting peer acceptance, and over confidence in one's ability.

Hospital data are often used to collect information on morbidity. In the case of injuries and poisoning among young people, hospitalisation rates provide an indication of the incidence of the more severe injuries sustained by young people. However, many other injuries occur that impact on the health and wellbeing of youth, but do not result in hospitalisation.

According to *Australia's Health 2016* (see Figure 2.24), the most common cause of injury leading to hospitalisation for males was transport accidents. The second and third most common injuries leading to hospitalisations include accidental exposures (e.g. accidental threats to breathing, drowning) and inanimate mechanical forces (e.g. being hit by a thrown rock). Females aged 15–24 years were more likely to be hospitalised for intentional self-harm and falls followed by transport accidents.

Hospitalisation data also indicates that more than one quarter (28 per cent) of presentations to emergency departments for injury were children aged 0–14. Whereas 19 per cent of emergency department presentation were people aged 15–24 (AIHW, 2018). Injuries to male youth are more frequent and more severe than those to female youth. Males are more likely to be involved in risk-taking behaviours, such as brawls, drink driving and more extreme physical activities. Inexperience with activities such as driving a vehicle can lead to an increased risk of injury from car crashes. Work-related injuries are also a concern.

The consequences of injury and poisoning can impact the future health and wellbeing of youth, and may affect an individual's employment or educational opportunities, and possibly lead to permanent disability and disfigurement.

Apart from young males, groups of young people within the population who are at more of a risk of injury than others include

EXTENSION QUESTION 2.6

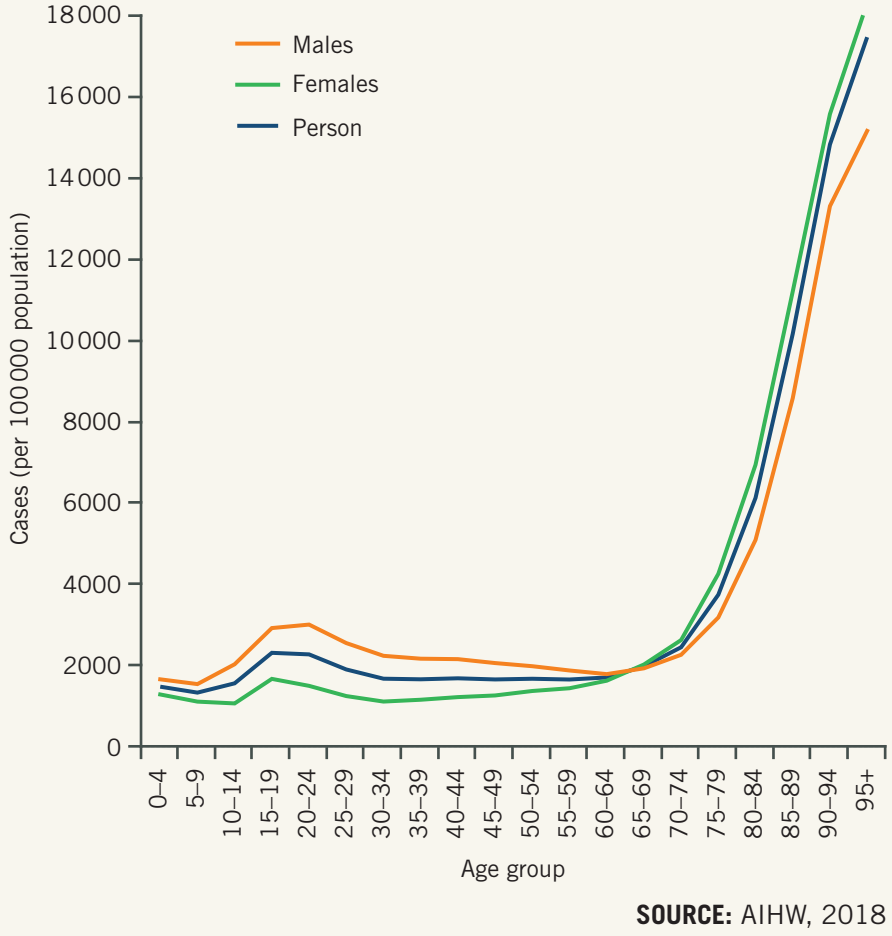


FIGURE 2.23 Hospitalisation due to injury and poisoning, 2015–2016

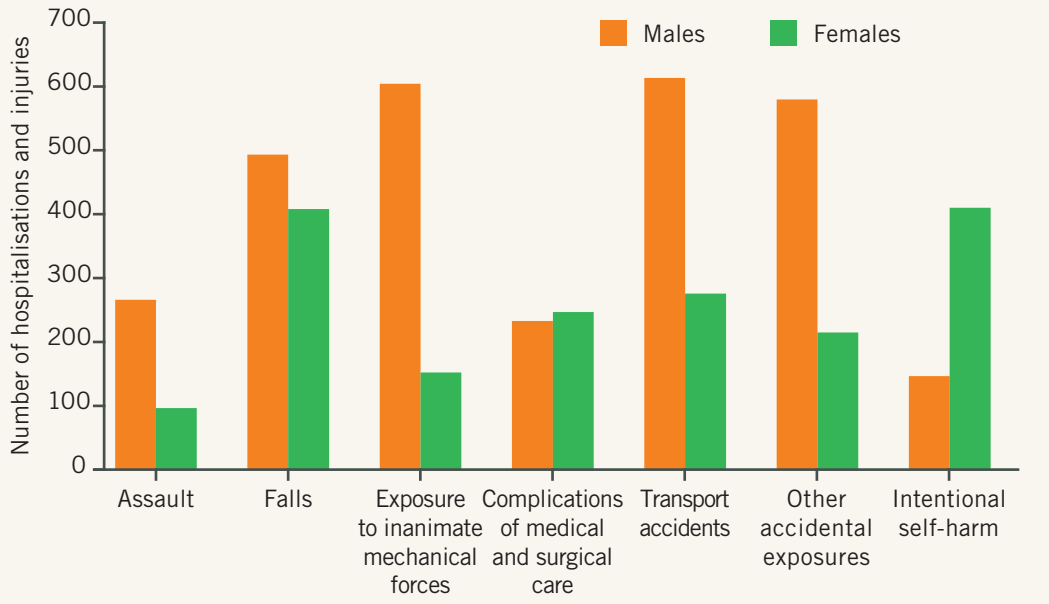
As shown in Figure 2.23 above, in 2015–2016, the rates of people being hospitalised due to injury and poisoning increased substantially with age from the age of 75 and over. However, the second highest peak in the rate of hospitalisation occured in the youth stage of the lifespan. Suggest reasons for this trend.

Aboriginal and Torres Strait Islander young people, those living in remote areas and those living in socioeconomically disadvantaged areas. Lower levels of education and income can affect level of health knowledge relating to injury prevention and can increase risk-taking behaviour.

Core activity limitation

As previously discussed, core activity limitation refers to needing assistance with self-care, mobility and/or communication. It is measured in terms of impairments, activity limitations and participation restrictions for everyday activities being performed, and is closely linked to what we refer to as disabilities. Disabilities can include physical, sensory, acquired brain injury and psychiatric impairments. Young people with a core activity limitation or disability may experience restrictions with schooling activities. These individuals may require particular assistance with specialised equipment or frequent time off school.

DISCUSS



SOURCE: AIHW, 2016

FIGURE 2.24 Hospitalisations for injuries, by cause and sex, young people aged 15–24 years, per 100 000 young people

Outline the differences between male and female hospitalisations due to injuries and poisonings. Give reasons for these differences.

Most youth who suffer from a core activity limitation will experience some restriction in their daily activities, such as self-care, mobility and/or communication. According to Australia's Health (2020), in 2018, 9.3 per cent (approximately 291 000) of all people aged 15–24 had disability. The prevalence of disability was similar for males (9.2 per cent) and females (9.5 per cent). Of young people aged 15–24, 3.4 per cent had severe or profound core activity limitations and 6.9 per cent had schooling or employment restrictions (ABS 2019). The prevalence of young people with disability was similar in 2003 and 2018 (9.0 per cent and 9.3 per cent, respectively).

DISCUSS

Explain how a core activity limitation impacts all dimensions of health and wellbeing.

ACTIVITY 2.5: RESEARCH TASK

TABLE 2.5 The level of core activity limitation experienced by young Australians aged 5–24 years, 2015

AGE GROUP (YEARS)	PROFOUND CORE ACTIVITY LIMITATION	SEVERE CORE ACTIVITY LIMITATION	MODERATE CORE ACTIVITY LIMITATION	MILD CORE ACTIVITY LIMITATION
PROPORTION OF PERSONS (%)				
Males				
5–14	3.7	2.9	0.4	2.3
15–24	1.4	1.7	0.5	2.1
Females				
5–14	1.8	1.6	0.2	1.5
15–24	1.0	1.0	0.5	2.2

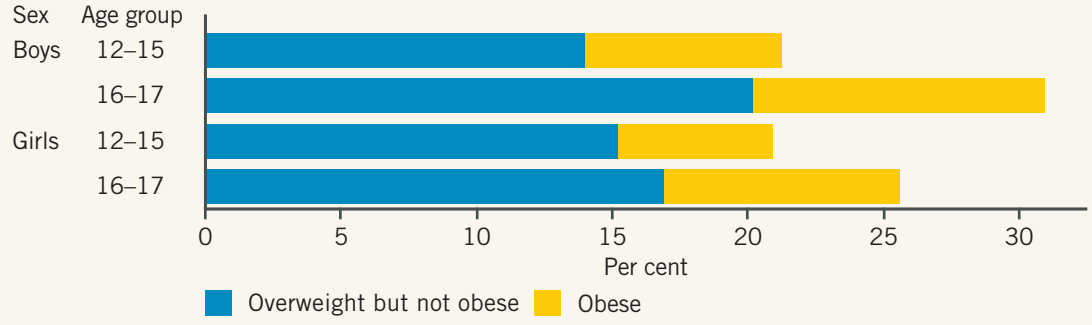
SOURCE: Adapted from Disability, Ageing and Carers, Australia: Summary of Findings, 2015, ABS, 2017

1 Explain core activity limitation.
2 Using the data in Table 2.5, discuss the level of core activity limitation for each age group and sex. State which age group and sex has the greatest proportion of core activity limitation.
3 Provide examples of how the health and wellbeing of the family members of a young person suffering from a core activity limitation may be impacted by the young person's limitation.
4 Explain how a person's education and employment may be affected by having a core activity limitation.
5 Conduct some research and identify support services in your local area that are available for young people who have a core activity limitation. Discuss how effective each of these services is, based on the assistance they provide.
6 Research ways in which your school caters for the needs of young people who have a core activity limitation.

Obesity

According the *National Health Survey 2017–18* almost one quarter (24.9 per cent) of children aged 5–17 years were overweight or obese in 2017–18 (17 per cent overweight and 8.1 per cent obese). The results were similar for boys and girls over the previous decade (Source: ABS, 2017–18).

Of great concern is also the fact that the prevalence of overweight and obesity among young people is increasing significantly while the incidence of obesity among Australian's aged 18–24 has largely increased, with 38.9 per cent overweight or obese in 2014–15 compared with 46.0 per cent in 2017–18.



SOURCE: AIHW, 2019

FIGURE 2.25 Proportion of overweight and obese children and adolescents aged 12–17, by age group and sex, 2017–18

Overweight and obesity in youth are strongly linked to long-term health and wellbeing problems. These conditions also have direct and immediate social consequences (e.g. social isolation), physical health and wellbeing consequences (e.g. asthma and type 2 diabetes mellitus) and mental health and wellbeing consequences (e.g. depression). Statistics indicate that young people who are overweight or obese have a greater likelihood of becoming obese adults. Therefore, the long-term consequences of obesity are of great concern, especially considering that these consequences can include chronic diseases. Examples of chronic diseases are type 2 diabetes mellitus, coronary heart disease, some forms of cancer and osteoarthritis.

EXTENSION QUESTION 2.7

Explain how obesity is determined and outline the impact being obese can have on youth health and wellbeing.

Long-term and chronic conditions

According to the Australian Bureau of Statistics, long-term conditions are defined as a disease or health problem that has lasted, or was expected to last, six months or more, whereas a **chronic condition** is an ongoing physical or mental condition that causes impairment or functional limitations. Chronic conditions contribute to increased morbidity and premature mortality. Youth diagnosed with one or more chronic conditions will have more complex health needs and a reduced quality of life.

chronic condition: An ongoing physical or mental condition that causes impairment or functional limitations.

Some long-term and chronic conditions are of great concern for youth, as they impact on the physical, social, mental, emotional and spiritual health and wellbeing of the individual. Also, in some cases, the treatment of the condition can negatively affect an individual's development as it can impact on the quality of interactions with their family and peers. There can also be stigmatisation or a sense of shame attached to suffering from the condition, which can have a negative impact on mental health and wellbeing.

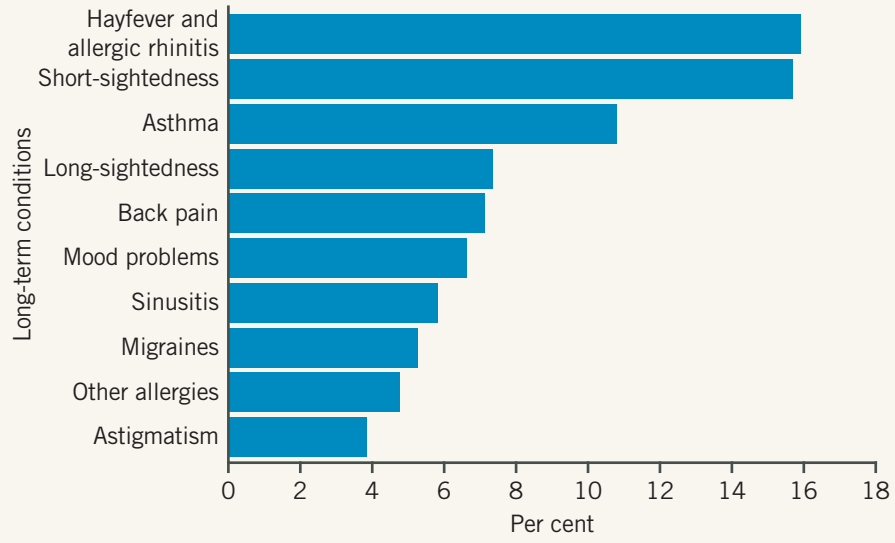


FIGURE 2.26 Most frequently reported long-term conditions in young people aged 12–24 years

Long-term or chronic conditions can cause school and employment absences or an inability to participate in age-appropriate activities. For young people with chronic or long-term conditions, there may also be increased dependence on family and others for physical, emotional and financial support.

Long-term conditions

As reflected in Figure 2.26, the most prevalent long-term (6 months or more) conditions affecting young people are:

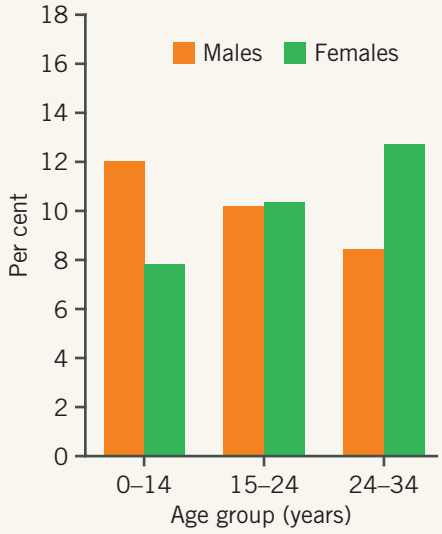
- respiratory conditions (hayfever)
- eye conditions
- diseases of the musculoskeletal system (including juvenile arthritis, back pain and joint disorders).

The most prevalent chronic (ongoing) conditions affecting young people are:

- asthma
- diabetes mellitus
- cancer.

Asthma

Asthma is a common chronic condition where 'triggers' (such as cold, pollen, pollution and exercise) cause the airways to become inflamed and swollen. Extra mucus is produced and muscles tighten, leading to the narrowing of the airways. Symptoms of asthma include episodes of wheezing, shortness of breath, coughing and chest tightness.



SOURCE: AIHW, August 2019

FIGURE 2.27 Prevalence of asthma by age and sex, 2017–18

Asthma is one of the most chronic conditions affecting young Australians. Asthma can be quite restricting on the physical health and wellbeing of some young people. Many asthmatics report

a lower quality of life than their peers due to suffering a severe form of the illness.

According to the AIHW (2019), among children and youth younger than 15 years, asthma is more prevalent in males than in females. However, among those aged 15–24, asthma rates were similar between males and females. This change in prevalence for men and women in adulthood is likely due to a complex interaction between changing airway size and hormonal changes that occur during adolescent development, as well as differences in environmental exposures. For an explanation of the pathology of asthma, see Figure 2.28.

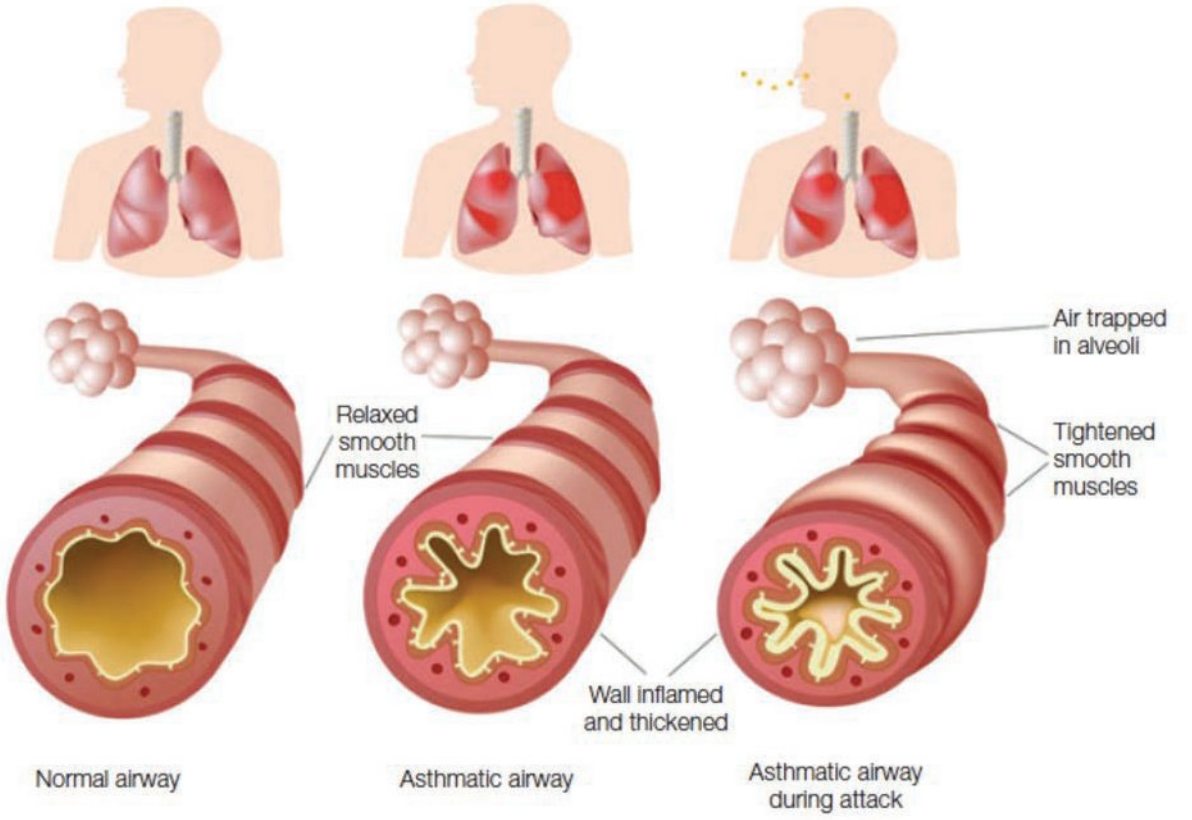


FIGURE 2.28 The pathology of asthma

ACTIVITY 2.6: ASTHMA AND YOUTH

Conduct research on the chronic condition of asthma and how it impacts young people. Websites that may be useful include the National Asthma Council of Australia, Asthma Australia, the Asthma Foundation of Australia, and the Asthma Foundation of Victoria.

Once you have collected the required information, create a brochure, information pamphlet or media presentation on the condition that could be used in schools, homes or community clubs (e.g. sports club).

1 Describe the condition athsma, including triggers and the symptoms.

2 Create a summary of how to manage asthma and what to do during an asthma attack.

3 Summarise the latest statistics related to youth health status and asthma (the information on the websites of the Australian Institute of Health and Welfare and the Australian Bureau of Statistics may be useful for this).

4 With reference to common triggers for asthma, describe how to create an asthma-friendly environment for youth with asthma in schools, community clubs and homes.

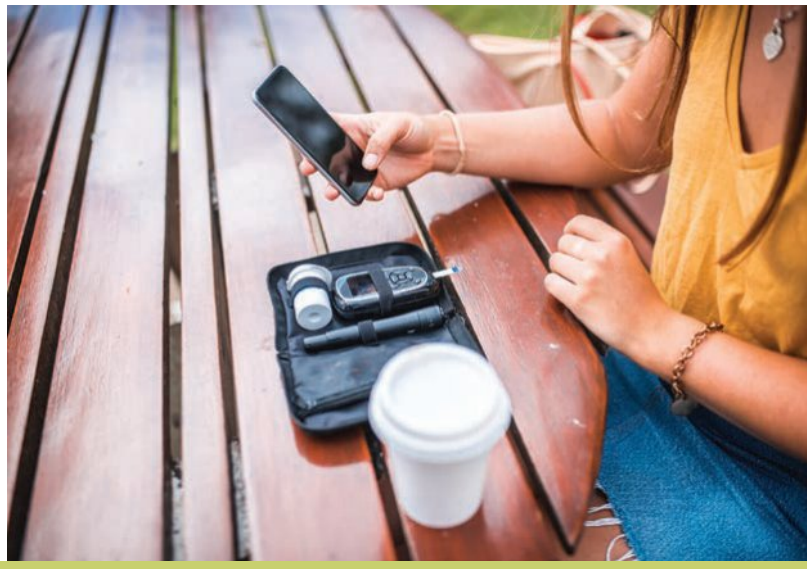


FIGURE 2.29 People diagnosed with type 1 diabetes mellitus have to ensure that their blood glucose levels are as close to the target range as possible – between 4–6 mmol/L (fasting) – through self-monitoring, using a blood glucose meter.

Diabetes mellitus

Diabetes mellitus is another chronic condition of concern for young people. It manifests in high levels of glucose in the blood. This condition is caused by complications with the production of the hormone insulin, which controls blood glucose levels by converting glucose into energy. Diabetes mellitus is a result of insulin not being produced by the body or the insulin produced is not effective, or a combination of both.

Type 1 diabetes mellitus normally appears and is diagnosed during childhood and youth, whereas type 2 diabetes mellitus is more prevalent among adults. However, as youth obesity rates are increasing, so is the diagnosis of type 2 diabetes mellitus among youth. Gestational diabetes can only be suffered by females as it is related to blood sugar control during pregnancy. According to Diabetes Australia, 12 per cent of children and young people have type 1 diabetes mellitus; however, the prevalence of type 2 diabetes mellitus is less than 1 per cent (NDSS, 2016). The diagnosis of type 2 diabetes mellitus is now also increasing among Aboriginal and Torres Strait Islander youth.

Cancer

Cancer is a diverse group of diseases in which some of the body's cells become defective, which leads to abnormal and uncontrollable cell growth. These cells form a mass called a tumour. Some tumours can interfere with nearby organs as they expand, affecting body function, while other tumours spread to other parts of the body. Cancers usually are categorised according to the part of the body in which they begin.

While cancer is relatively uncommon in youth compared with adulthood, it still causes significant morbidity and mortality. Even for those who are successfully treated, there can be long-term effects on their health and wellbeing. The most common childhood cancers in Australia are acute lymphoblastic leukaemia, brain cancer, and non-Hodgkin lymphoma.

Cancer incidence among Australian children and adolescents is higher in boys (average of 567 per year) than in girls (average of 453 per year) (Children's Cancer Institute).

For young people aged 15–19 years and 20–24 years, the incidence rate for cancer (all types) was 21.5 and 33.5 per 100 000 respectively in 2016 (Cancer Australia, 2017).

ACTIVITY 2.7: HEALTH AND WELLBEING OF YOUTH

Copy and complete the table below.

HEALTH STATUS INDICATOR	DEFINITION OF INDICATOR	APPLICATION TO YOUTH HEALTH STATUS
Self-assessed health status	Provides an overall measure of a population's health and wellbeing based on a person's own perceptions of their health	Younger (15–24 years) Australians generally rated themselves as having better health than older people; most young people rate their health as being excellent or very good
Mortality	The number of deaths caused by a particular disease, illness or other environmental factor	Death rates for youth are low compared to death rates for other stages of the lifespan; youth death rates have declined over time; males still account for the majority of all youth deaths; the leading causes of mortality for youth are injury and poisoning (including road accidents and suicide) and cancer
Morbidity		
Burden of disease		
Incidence		
Prevalence		
Rates of hospitalisation		
Core activity limitation		
Psychological distress		
Life expectancy		

1 Based on the data in this chapter and information in the table above, suggest how the Australian Government could act to improve the health status of youth.

2 Design and conduct a survey on the prevalence of long-term conditions in your school. In your survey, determine the leading long-term conditions for different ages within the youth lifespan stage as well as differences between males and females. Write a summary of your results. Draw some conclusions about the results of your survey in relation to the health and wellbeing of youth, and the differences between male and female youth.

3 Alternatively, conduct a survey to assess student knowledge regarding health conditions experienced during youth. In your survey determine which conditions students believe are more likely to lead to hospitalisation, core activity limitation and which conditions are more prevalent in males compared to females. Ask students to self-assess their health status.

CHAPTER SUMMARY

- Health status refers to an individual's or a population's overall level of health. Health status takes into account various factors such as life expectancy, amount of disability, and levels of risk factors including illness, disease, disability and death.
- Health status indicators are used to measure the health and wellbeing of Australians. There are a range of indicators used to measure the health status of Australians, including:
  - incidence
  - prevalence
  - morbidity
  - rates of hospitalisation
  - burden of disease
  - mortality
  - life expectancy
  - core activity limitation
  - psychological distress
  - self-assessed health status.
- The burden of disease (DALY, YLL and YLD) is used to measure health status:
  - burden of disease is a measure of the impact of diseases and injuries; specifically, it measures the gap between the current health status and an ideal situation where everyone lives to an old age free of disease and disability; burden of disease is measured in a unit called the DALY
  - the majority of the burden of disease experienced in youth is the non-fatal burden (YLD: years of life lost due to disability) rather than the fatal burden (YLL: years of life lost)
  - in terms of the burden of disease, mental health disorders account for most of the burden of disease for Australian youth; specifically, anxiety and depression are the most prevalent mental health disorders for both males and females.
- The level of health status experienced by youth in Australia is generally excellent:
  - young people (aged 15–24 years) in Australia generally rate their health and wellbeing as being very good or excellent
  - the youth stage of the lifespan has the lowest mortality rates of any lifespan stage
  - male youth have higher mortality rates than female youth
  - injury and poisoning are the leading causes of mortality (or years of life lost) for Australian youth
  - road accidents are the leading contributor to the burden of disease (years of life lost and years of life lost due to disability) and injury for youth
  - injury and poisoning are the leading causes of hospitalisation for youth; the most common external causes of injury leading to hospitalisation are road accidents; females aged 15–24 years are more likely to be hospitalised for intentional self-harm and falls
  - apart from young males, groups of young people within the population who have a higher risk of injury than others include Aboriginal and Torres Strait Islander young people, those living in remote areas, and those living in socioeconomically disadvantaged areas
  - a higher proportion of young males live with a core activity limitation compared to young females
  - the most prevalent long-term conditions affecting young people are mental disorders, respiratory conditions (e.g. hayfever), eye conditions, and diseases of the musculoskeletal system
  - the most prevalent chronic conditions affecting youth are asthma, diabetes mellitus, and cancer (despite rates being low compared to other lifespan stages).

KEY QUESTIONS

SUMMARY QUESTIONS

1. Explain the following key terms that relate to the measurement of health status: life expectancy, mortality, morbidity, incidence, prevalence, DALYs, burden of disease, core activity limitation, rates of hospitalisation, and psychological distress.
2. Explain why the health status of a population is measured. Identify how this information is used.
3. Describe how youth rate their health and wellbeing.
4. Death rates for young people have decreased during the past two decades. Explain why this might be the case.
5. Describe how psychological distress is measured.
6. Discuss the different types of core activity limitations.
7. Explain the concept of long-term conditions.
8. Identify the three most common long-term conditions for youth. Suggest reasons why these are the most prevalent conditions.
9. Describe the impact that injuries and poisoning have on the health and wellbeing of youth.
10. Identify and explain two reasons why injury and poisoning are the leading causes of youth mortality and morbidity.
11. Describe the difference in injury rates for male and female young people.
12. Within the population of young people, some groups suffer from more injuries than others. Explain why this is the case.
13. Identify the commonly occurring mental disorders for young people.
14. Describe each of the three most common chronic long-term conditions for young people.

EXTENDED-RESPONSE QUESTION

QUESTION

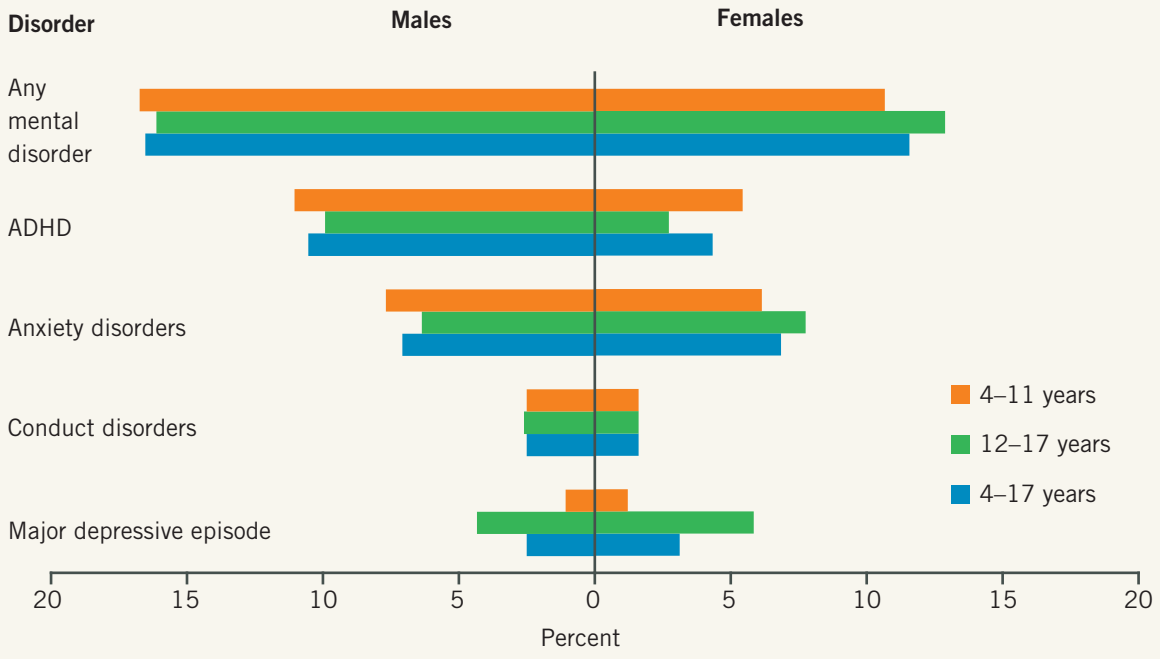
Australian youth experience one of the highest levels of health in the world, although there are still many risk factors that influence health outcomes. With reference to the health status information in Table 2.6 analysis the impact on youth health and wellbeing. (8 marks)

TABLE 2.6 Key findings of the prevalence of issues impacting youth health and wellbeing

400 cases of type 2 diabetes mellitus are diagnosed each year in those aged 10–24	68 per cent of those aged 15–24 rated their health as being excellent or very good compared to 36.7 per cent of people aged 75 years and over	14 per cent of females aged 15–24 have an anxiety disorder
22 per cent of young people aged 15–24 are overweight or obese	80 000 young people aged 15–25 were hospitalised in 2013–14 due to injury and poisoning	14 per cent of young people aged 12–17 had a mental health disorder in the last 12 months

SOURCE: Adapted from the AIHW, 2018

EXAMINATION PREPARATION QUESTIONS



SOURCE: AIHW, 2016

FIGURE 2.30 Twelve month prevalence of mental health disorders, by age and sex, 2013–2014

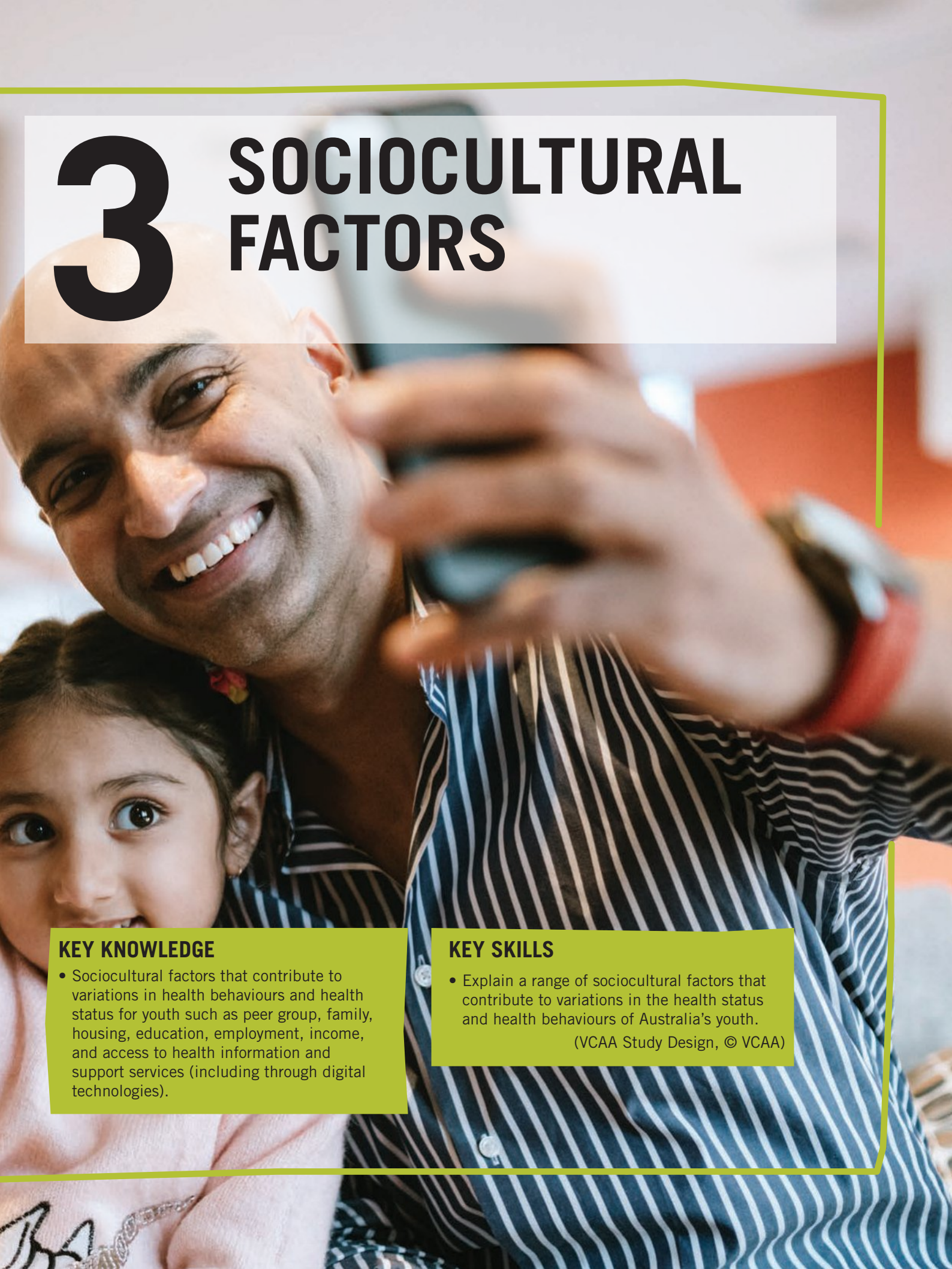
A Explain how prevalence is different from incidence. (2 marks)

B Identify a trend in the data represented in Figure 2.30. (1 mark)

C Using data, outline the impact of mental health disorders on young people. (3 marks)

D Discuss two examples of how mental health disorders might impact on physical, social, emotional or spiritual dimensions of health and wellbeing. (4 marks)

3 SOCIOCULTURAL FACTORS



KEY KNOWLEDGE

- Sociocultural factors that contribute to variations in health behaviours and health status for youth such as peer group, family, housing, education, employment, income, and access to health information and support services (including through digital technologies).

KEY SKILLS

- Explain a range of sociocultural factors that contribute to variations in the health status and health behaviours of Australia's youth.

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INTRODUCTION

This chapter explores different sociocultural factors and how they contribute to the variations in health status and health behaviours of Australia's youth.

What you need to know

- A range of sociocultural factors such as education, employment, family, peer group, income, housing and access to health information.
- The dimensions of health and wellbeing.
- The indicators of health status.
- The possible impacts of sociocultural factors on variations in youth health and wellbeing, health status, and health behaviours.

What you need to be able to do

- Analyse differences in health status, health and wellbeing, and health behaviours.
- Explain the possible impact of sociocultural factors on differences in youth health and wellbeing.
- Explain the possible impact of sociocultural factors on variations in youth health status.
- Explain the possible impact of sociocultural factors on youth health behaviours.

3.1 SOCIOCULTURAL FACTORS THAT CONTRIBUTE TO VARIATIONS IN HEALTH BEHAVIOURS, HEALTH AND WELLBEING, AND HEALTH STATUS

Sociocultural factors refer to aspects of society and the social environment that impact on health, wellbeing and health status, such as poverty, employment, family, housing, health information, social networks and social support. The sociocultural factors of health and wellbeing generally relate to influences involving contact with other members of the community such as families, peers, significant adults, members of schools and workplaces, and community groups (religious, sporting or musical).

sociocultural factors: Aspects of society and the social environment that impact on health and wellbeing (e.g. income, education, employment, family, housing, access to health information, social networks, and support) and overall levels of health status.

FIGURE 3.1 Sociocultural factors that can impact the health status of Australian youth

Health behaviours

A **health behaviour** is an action relating to one's health that can have a positive or negative impact on their health and wellbeing or health status. For example, the health behaviour of being sun smart by wearing long-sleeve tops, a hat and sunscreen when in the sun can help to promote physical health and wellbeing by reducing the risk of skin cancer. This can also promote health status of youth as it can reduce the mortality rates from skin cancer.

health behaviours: A person's actions, attitudes or beliefs about their health and wellbeing.

Table 3.1 identifies a range of positive and negative health behaviours that may contribute to variations in youth health and wellbeing and health status.

TABLE 3.1 Examples of positive and negative health behaviours

EXAMPLES OF POSITIVE HEALTH BEHAVIOURS	EXAMPLES OF NEGATIVE HEALTH BEHAVIOURS
• Engaging in adequate levels of physical activity • Good eating habits • Limited or no alcohol consumption • Not smoking • Not taking illegal drugs • Wearing sunscreen • Accessing health services • Good oral hygiene habits • Socialising with a variety of people • Wearing a seatbelt	• Physical inactivity • Poor diet (i.e. high in kilojoules and lacking in nutrients) • Regular alcohol consumption • Smoking • Using illegal drugs • Exposing body to excess sun • Not accessing preventative healthcare • Poor oral hygiene habits • Social isolation • Not wearing a seatbelt

Health and wellbeing and health status

Throughout this chapter we consider a range of sociocultural factors that impact youth health and wellbeing and contribute to variations in the health status of youth. It is important that you can relate your understanding to the dimensions of health and wellbeing and health status indicators.

TABLE 3.2 Sociocultural factors that impact youth health and wellbeing

HEALTH AND WELLBEING DIMENSIONS	HEALTH STATUS INDICATORS
Physical Social Emotional Mental Spiritual	Life expectancy Mortality Morbidity Incidence Prevalence

3.2 FAMILY

The term **family** means different things to different people, and a person's experiences and culture will influence their understanding of the definition and function of a family; because of this, families can be difficult to define. While they are typically viewed as a group of related (by blood or marriage) people, this definition is not true for all families. For example, think of a single parent who lives with an adopted child or an elderly widow who no longer has children living at home. Are these people still part of a family?

family: Two or more persons, one of whom is aged 15 years or over, who are related by blood, marriage (registered or de facto), adoption, step or fostering, and who usually reside in the same household (ABS).

Family is the first social group within which individuals interact. Everyone has a family – at least a family of origin, as we all are born to a mother and have a biological father. Even if a child does not live with their parents, they are still their biological family. The definition of family, however, is much broader than this. Not all children live with their biological parents for their entire childhood, and this means that the definition of a family must take into account more than the biological bond and consider the social role of families. According to the Australian Bureau of Statistics (ABS), a family may be defined as being 'two or more persons, one of whom is aged 15 years or over, who are related by blood, marriage (registered or de facto), adoption, step or fostering, and who usually reside in the same household'.

While this is a common definition used in Australia for statistical purposes, it refers more to household families and does not incorporate the more social nature of families.

Under this definition, families may include couples with or without children, single parents with children, grandparents caring for grandchildren or other families of related adults, such as brothers or sisters living together, where no couple or parent–child relationship exists (Australian Households and Families, 2013).

FIGURE 3.2 Families have a significant impact on how we live our lives.

This definition is not inclusive of the fact that the concept of family is not unchanging and can include members who do not live together – for example, grandparents who do not live with grandchildren are still likely to view these grandchildren as family.

Defining Aboriginal and Torres Strait Islander family boundaries is even more challenging, as in some communities – especially in remote areas – households tend to be complex and fluid in their composition, with adults and children often moving between households.

According to the Australian Institute of Health and Welfare (AIHW):

> Families play a crucial role in the lives of most young people in Australia, as they provide an environment in which young people are cared for. Through interactions with daily life, family members can have important influences in shaping adolescents' behaviours and choices during the transition from dependent children to independent adults. (*Young Australians: their health and wellbeing*, AIHW, 2011)

EXTENSION QUESTION 3.1

Explain how a person's family might impact on other sociocultural factors, such as their peer group, access to health information, education, income and employment.

Despite variations in how it is defined, family is the social group that has the most significant impact on our knowledge and values in the early years of life. Family is also very important for providing social and economic support during youth. There is evidence that social disadvantages experienced early in life can impact on health, wellbeing and health status in later life, particularly adulthood.

During youth, young people are developing habits and behaviours that may stay with them for the rest of their lives. Family plays an important role in influencing these behaviours that can determine whether youth will live a life in good health. Family can also influence other sociocultural factors such as socioeconomic status (SES), education and access to health services.

FIGURE 3.3 Youth health behaviours influenced by family

During youth and early adulthood, young people experience rapid and complex physical, social and emotional changes (discussed further in Chapters 8 and 9). For most youth, these changes occur while they are also making the transition from dependence to independence. This transition can be shaped by a wide range of factors, such as income and education that are largely influenced by their family. The pathways from education to work, and from the parental home to independent living, have become more varied and complex for young people, and often extend over longer periods and are largely influenced by the family.

Variations in health behaviours

Families and caregivers have a significant influence on the development of youth into strong adults. The close proximity means family members' experience may directly or indirectly influence the health-related behaviours that are undertaken by each member. According to Mission Australia's *Youth Survey Report 2018*, when asked what they value, 83.7 per cent of Australian youth identify family as being extremely important or very important to them. This might indicate that if youth value family, they also value the lessons learned from their family. Family functioning is a term that refers to a family's ability to communicate, interact, form positive relationships, make decisions and problem-solve together. Families with effective family functioning are able to provide a positive social environment where youth can grow to be strong, resilient and mentally, socially and emotionally healthy individuals who can cope with challenges in their lives.

Positive family characteristics such as close family relationships, strong parenting skills, good communication and positive adult role models tend to favourably impact youth health behaviours. Youth are more likely to be receptive to messages about health-promoting behaviours from family members when they share positive relationships. According to Mission Australia's *Youth Survey Report 2018*, 61.1 per cent of youth rated their family as excellent or very good in regard to their family's ability to get along. The parenting needs of young people vary as their development progresses, and support – particularly through key transitional periods – is crucial to good outcomes. As youth get older, their level of independence also increases, leading to them having more control over a range of health behaviours such as their diet, activity levels and exposure to screen time.

Diet

Family has a significant influence on the diet of youth, especially in the early part of this lifespan stage. As youth get older and their level of independence increases, they start to have more control over their own diets.

Research also shows that nutritional intake is impacted by the family's income and education levels. Eating habits established during childhood and youth are often carried through into adulthood. Poor eating habits of the family can increase an individual's risk of adult obesity and other chronic diet related disease such as type 2 diabetes mellitus and cardiovascular disease.

The family tends to have more control over the diet of younger youth than it does as youth move towards adulthood and independence. For example, younger youth under 18 years of age are more likely to eat the recommended daily serves of fruit and vegetables than older youth aged over 18 years. This indicates that while families have a significant influence on the diet of younger youth, they need to work on teaching their children healthy behaviours and being suitable role models, with the aim of their children adopting these behaviours as their independence increases. The prevalence of overweight and obesity in youth increases with age. For example, young people aged 20–24 years are more likely to be overweight or obese than those aged 15–19 years. This could be due to a range of behavioural factors such as changes in activity levels and exposure to screen time, but it may also indicate that when families have greater control over diet, youth are more likely to maintain a healthy body weight. Of course, the influence that families have is dependent on them having the resources they need to make appropriate health choices.

DISCUSS

Discuss the role of family in influencing the food intake of youth.

Screen time

The family can play an influential role on the amount of screen time that a youth engages in. Parents who adopt a more authoritarian parenting style may have stricter rules around the amount of time that youth spend on devices (on social media and gaming). Parents who engage regularly with their children and provide role models for appropriate screen time and social media usage are more likely to limit their child's screen time use. Parents who adopt a permissive parenting style may have fewer limits and controls around the time their children spend on screens. Also, parents who work long hours and are busy may struggle to control the time their children spend on screens. Youth who spend greater amounts of time on screens or social media are more likely to be physically inactive leading to increased susceptibility of being overweight or obese which can influence

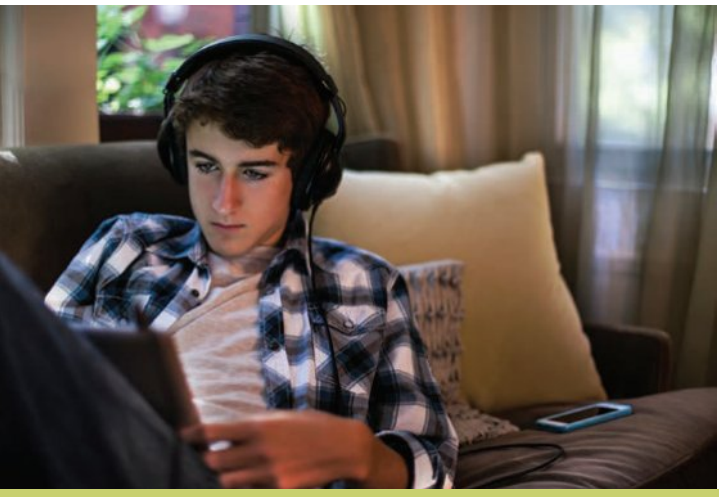


FIGURE 3.4 The Australian Government recommends that 12–13-year-olds only have two hours of screen time a day – 64 per cent of Australian 12–13-year-olds exceed this recommendation.

chronic disease levels later in life. High levels of social media use can also increase the risk of being bullied online, which can impact mental health and wellbeing.

Substance use

According to the AIHW, youth who experience poor family cohesion (the ability of family members to get along with one another) are more at risk of substance use. In contrast, positive family relationships and communication have been shown to reduce the incidence of substance misuse as family cohesion acts as a buffer to many risk-taking behaviours. Youth who live in families with low SES are more likely to smoke compared with those living in families with higher SES. Youth whose parents smoke tobacco are also more likely to smoke or take up smoking in later life than those whose parents don't smoke.

Variations in health and wellbeing, and health status

Families play a central role in providing young people with social and economic support. The degree to which families are capable of providing this support is one of the most important influences on a young person's health, development and wellbeing (AIHW, 2011).

Families can be a source of damage to health status for youth in the form of abuse, neglect or exposure to domestic violence, or they can be the most important source of protection from harm for youth by providing a sense of security, meeting the needs of youth and promoting self-esteem.

The AIHW points out that the mental health and wellbeing of youth is also influenced by family structure: in 2013–14, mental health disorders were more prevalent among youth living in step, blended or single-parent families (18.3 to 23.7 per cent) compared with youth living in their complete original families (10.4 per cent). Mental health disorders were also more common in families with poor family functioning (35.3 per cent) compared with families considered to have very good family functioning (10.9 per cent). Poor physical and mental health and wellbeing was also more commonly reported among youth living in poor-quality or overcrowded housing.

The SES of a family can impact the physical health of youth as mortality rates, the prevalence of chronic conditions and the rate of avoidable deaths are all higher and life expectancy is lower among those with lower SES.

ACTIVITY 3.1: FAMILY

1 Define 'family'.
2 Outline examples of how a young person's family can have a positive impact on their health behaviours.
3 Outline examples of how a young person's family can have a negative impact on their health behaviours.
4 Explain why the examples you provided in Questions 2 and 3 are positive or negative in relation to the impact they have on the health and wellbeing, and health status of youth.

3.3 PEER GROUP

A **peer group** a group of individuals who are similar ages and who share similar interests. Peer relationships during youth are significant, as youth really value their peers. According to Mission Australia's *Youth Survey Report 2018*, when asked what they valued, 81.8 per cent of Australian youth identified friendships as being extremely important or very important to them. Peers often provide emotional support, companionship, a sense of identity and belonging, and advice or information to each other.

peer group: A group of individuals who are similar ages and who share similar interests.

Positive peer relationships have the potential to have a positive impact on youth health and wellbeing and health behaviours. Unfortunately, the influence is not always positive. As a result of peer pressure, peers often have an influence on the decisions made by youth, which can negatively influence health behaviours in youth who participate in risk-taking behaviours.

Variations in health behaviours

According to Mission Australia's *Youth Survey Report 2018*, 65.7 per cent of Australian youth say that their friends influence their post-school plans and 84.5 per cent say they go to their friends for support and advice regarding important issues. This data indicates that, for youth, peers have a significant impact on youth behaviours. This might indicate that young people also turn to peers or friends when they make decisions on health-related behaviours such as choices about drugs, alcohol, sexual behaviours and other risk-taking behaviours. This indicates that if young people have healthy positive relationships with peers who have healthy behaviours, then they too are more likely to exhibit healthy behaviours. For example, the smoking behaviours of peers are strongly linked to youth smoking behaviours, which means those young people who have friends who smoke are more likely to take up smoking than those who have friends who don't smoke.

DISCUSS

Discuss how the peer group shown in this image may influence each other's health and wellbeing and health status.

Variations in health and wellbeing, and health status

The social support provided by positive peer relationships can promote resilience and improve wellbeing, resulting in higher levels of self-esteem and improved mental health and wellbeing. High levels of social support through positive peer relationships are also thought to protect the physical health and wellbeing of individuals, offering some protection from disease and early death. Studies of large populations have provided strong evidence that a person's health and disease are related to their social support or social networks. It was found that social connections helped to protect mortality from all causes.

3.4 HOUSING

Housing is considered to be a basic human right and an important influence on health and wellbeing. The quality of housing experienced by an individual is closely linked with their level of income.

Housing not only impacts physical health and wellbeing, and health status; poor housing is also associated with poor access to a safe water supply, washing facilities, sanitation and overcrowding.

Housing quality

Poor-quality housing can include houses that are affected by damp, mould growth or a lack of basic amenities. Living in poor housing conditions can influence the mental health and wellbeing of youth, due to the many social issues that arise from inadequate material resources. There are also links between the quality of housing and a range of hazardous and injury-causing situations; for example, the risk of tripping on uneven and unsafe surfaces.

Also of concern is not having an adequate power and electricity supply, which may restrict the capacity of youth to carry out healthy living practices such as washing, cooking and food storage; temperature control and lighting issues may also affect the ability to study or complete homework.

Overcrowding

Overcrowding is another issue related to housing, and refers to too many people living in a space that is too small to cater for the needs of those living there. Housing that is overcrowded can lead to an excessive demand on facilities such as the laundry, kitchen and bathroom. It also puts increased stress on health infrastructure, such as water supply and sewerage systems, and is closely linked to housing standards and conditions.

Overcrowding may also result in youth having to share a bedroom or space with a number of siblings. This impacts privacy and can result in greater levels of conflict and stress.

DISCUSS

Discuss the potential hazards associated with living in the house shown in this image. Explain how these hazards could impact a person's health and wellbeing.

Homelessness

An important social issue relating to housing is homelessness. The definition of homelessness is multifaceted, and there is no internationally agreed definition; however, in 2012 the Australian Bureau of Statistics developed a new definition of homelessness. With this definition, an individual is considered to be homeless if their current living arrangement:

- is in a dwelling that is inadequate or
- has no tenure, or if their initial tenure is short and not extendable or
- does not allow them to have control of, and access to space for social relations (ABS, 2012).

This definition is based on an understanding that being homeless is not the same as being roofless. It is about people having a lack of one of the following: a sense of security, stability privacy, safety and the ability to control their living space. Homelessness is linked to a range of health and wellbeing concerns, including mental health disorders. Australian census data in 2016 identified that there were approximately 27 700 homeless persons aged 12–24 years old, which is 24 per cent of the total estimated homeless population.

Youth can be homeless and on their own, or homeless as part of a family unit. While some homeless youth sleep in Specialist Homelessness Services (SHS) refuges, others who are homeless and on their own may resort to abandoned buildings, couch surfing with friends or

FIGURE 3.5 If you are couch surfing at friends' houses, you are considered to be homeless.

strangers, sleeping in a car or makeshift shelters. While it is clear that the home environment and the location of a home can have a positive impact on youth health, homelessness can certainly have a detrimental impact.

Variations in health behaviours

The location of housing can influence health-related behaviours and the accessibility of local resources and safety. For example, youth who live in well-designed urban communities with appropriate housing and transport are more able to access community resources (e.g. sporting fields, healthcare services or social workers) to improve their health. Improved access to these services can improve health behaviours, as youth are more likely to make use of services that are easier to access.

The safety of the housing environment can also impact health behaviours, as youth are more likely to access a range of community services if they feel safe doing so. Youth who live in housing located in remote or very remote areas are much more likely to use illicit substances than those in urban areas.

Youth experiencing homelessness are more likely than their peers to have dropped out of school, been involved with criminal activity and misused drugs and alcohol.

Variations in health and wellbeing, and health status

Safe and secure housing is associated with improved health and wellbeing of youth. It is widely recognised that factors such as housing quality, household size and community safety are strongly linked with health and wellbeing. Generally, poor housing can cause respiratory conditions, skin infections and meningitis, and in this way impact the physical health, wellbeing and health status of Australian youth.

Overcrowding can impact health, wellbeing and health status, as it can increase diarrhoeal diseases, eye infections, ear infections, respiratory disease and other infectious diseases such as meningococcal. In the 2020 pandemic of COVID-19, the Coronavirus spread more rapidly in overcrowded conditions and so social distancing (keeping at least 1.5 m away from other people) became important in preventing its spread. Overcrowding can also impact negatively on mental health and wellbeing through increasing stress caused by a lack of space and can increase tiredness due to interruptions of sleep. Interestingly, though, overcrowding may also have a positive impact on mental health and wellbeing by minimising stress through reducing social isolation as there are more people with whom to interact.

DISCUSS

Discuss how living in urban communities with good access to services can improve health and wellbeing.

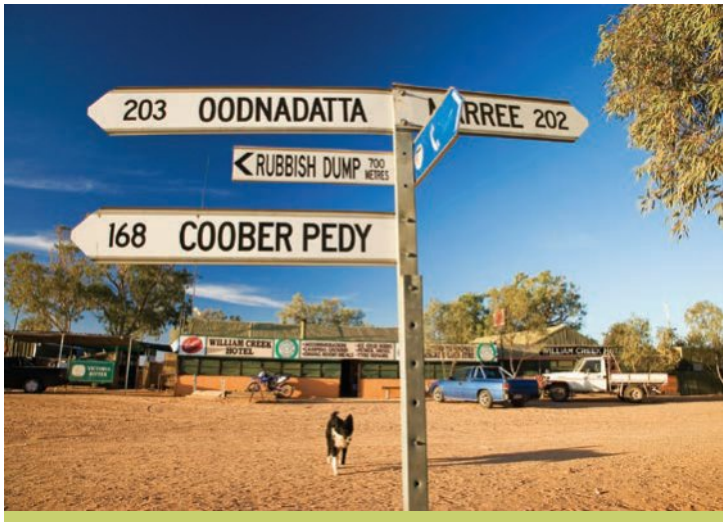


FIGURE 3.6 People who live in remote communities may struggle to access most services.

Youth who are homeless or who do not have the security of a safe and stable home environment are at much greater risk of negative social, emotional, mental and physical health and wellbeing consequences. They are at greater risk of mental health problems, such as anxiety, depression and alcohol and drug misuse. Youth who are homeless also suffer from poor nutrition (due to a lack of access to fresh food), gastrointestinal conditions, sexually transmitted infections (STIs), social isolation, violence (including sexual and physical assault) and respiratory conditions.

ACTIVITY 3.2: HOUSING

1 There are a number of issues associated with housing; identify three of these issues.
2 Explain what the term 'homeless' means.
3 Provide examples of how housing can have a positive impact on the health behaviours of youth.
4 Discuss the impact of housing in promoting the health and wellbeing of youth.
5 Outline one example of how housing can have a negative impact on the health and wellbeing, and health status of youth.
6 Explain how homelessness can have a negative impact on the health behaviours of youth.
7 Describe how being homeless can have a negative impact on the health and wellbeing, and health status of youth.

3.5 EDUCATION

Education provides health and wellbeing benefits to youth now and in the future. In Australia, school is compulsory until the end of Year 10, and youth must then participate in full-time education, employment or training (or a combination of these) until they are 17 years of age. Participation in secondary school and post-school education is becoming increasingly common for Australian youth, and more youth have completed Year 12 in recent decades.

Completing Year 12 is important for improving economic and social opportunities in life through preparing students for tertiary education and the workforce, and to become engaged citizens. Following secondary schooling, youth have several options in relation to further education or employment. Most young people will enter the workforce, undertake tertiary education, undertake an apprenticeship or traineeship, or do a combination of these.

ACTIVITY 3.3: SCHOOL-RETENTION RATES

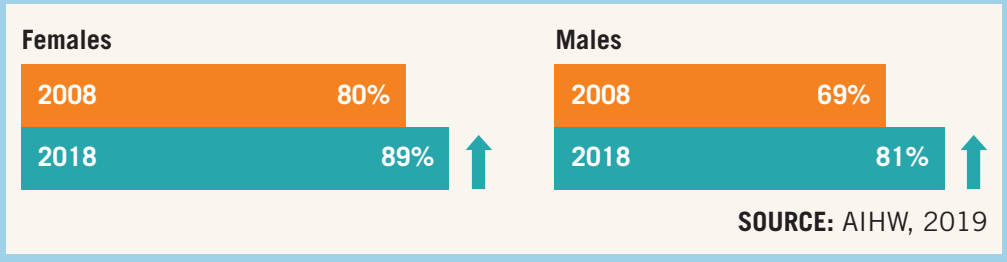


FIGURE 3.7 School-retention rates by sex, 2008 and 2018. Retention rate is an estimate of the percentage of students who stay enrolled full time in secondary education from the start of secondary school (Year 7) to Year 12.

1 Identify two trends (differences between 2008 and 2018, or differences between females and males) evident in the graph in Figure 3.7.
2 Explain how the trend from 2008 to 2018 for both females and males could improve health and wellbeing and health status in youth.

FIGURE 3.8 Apprenticeships are an example of further study and training undertaken by youth.

Higher levels of education are associated with higher income and better employment prospects, and can also affect health directly by providing knowledge of health risks and skills for a healthy lifestyle and for gaining better access to health services. Higher levels of education also allow youth to participate in and connect with the wider community. In Australia, individuals with higher levels of education report fewer illnesses and have better mental health than those with lower levels of education. Education increases an individual's health literacy, resulting in a reduced likelihood of unhealthy lifestyle choices.

Variations in health behaviours

Education equips people with skills to promote their health and wellbeing through having the knowledge that they need to engage in health-promoting behaviours and also helps them to cope with ill-health by assisting them to make informed healthcare choices. Individuals with higher levels of education are less likely to participate in some behaviours that have a negative impact on health and wellbeing, such as smoking, and are more likely to participate in health-promoting behaviours such as physical activity.

Variations in health and wellbeing, and health status

Educational attainment is associated with better health and wellbeing throughout life. Those with higher educational attainment are less likely to be overweight or obese than those with lower levels of education.

The situation regarding education is not all positive though. Mission Australia's *Youth Survey Report 2018* revealed that 37.8 per cent of Australian youth identified school or study problems as an issue about which they were extremely or very concerned. Tertiary education was also associated with higher levels of stress and poorer health and wellbeing among youth aged over 18 years, compared with those who worked.

3.6 EMPLOYMENT

Being employed refers to an individual undertaking work for pay. Employment can have a positive impact on the lives of youth, as it can provide them with income, offer opportunities to build new social relationships and fulfil social roles, and provide them with the opportunity to learn new skills. Work can bring a sense of identity, social status, improved self-esteem and renewed purpose in life. The income that youth earn through work can also enable them to afford a range of resources to promote health, such as healthy food, healthcare services and services to promote physical activity such as gym memberships.

While generally seen as being positive to health and wellbeing, employment can also have a negative impact on youth, especially if it takes

DISCUSS

Discuss the benefits of part-time employment to the health and wellbeing and health status of young people.

time away from study or family relationships, if it encourages a sedentary lifestyle, if the employment environment is hazardous (e.g. a building site) or if the individual experiences workplace bullying.

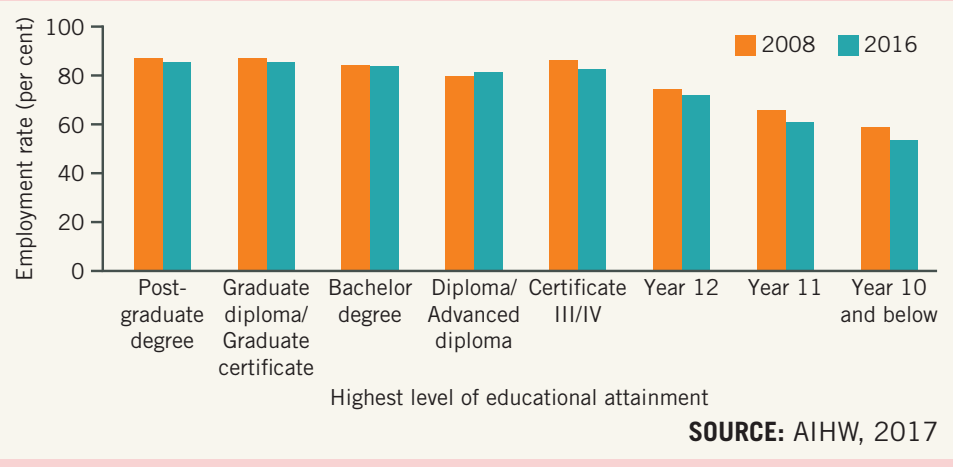
The type of work and the tasks involved with employment can influence a worker's risk of physical injury and illness. Certain jobs, such as those in the transport, construction, agricultural, mining and manufacturing industries, are also associated with higher risks and a high number of reported injuries and premature deaths. In addition to the injury sustained, the individual might need to have time away from work due to rehabilitation, and may even have to leave their job if the injury is permanent. Sedentary jobs such as office jobs that require long hours of sitting reduce opportunities for movement or exercise, which can contribute to obesity due to inactivity. In addition, workplace conditions such as inadequate ventilation or temperature control can aggravate allergies or asthma, and cause respiratory illnesses. Shiftwork can have a negative impact on the health and wellbeing of workers, as it can cause disturbances in sleep and difficulties in maintaining relationships.

Unemployment, on the other hand, is known to be detrimental to health and wellbeing. Being unable to obtain permanent work or full-time study is associated with being trapped in a cycle of unemployment, part-time work or labour market programs (work placement programs for those who are classified as long-term unemployed). Being unemployed also makes youth more reliant on parents or social welfare and reduces their independence. Youth are particularly vulnerable to the burden of unemployment and the economic and health consequences. For youth aged 15–24 years in 2018, the unemployment rate was 11.8 per cent in which was more than twice the national unemployment rate of 5.8 per cent. Of the 15–19 age group 3.8 per cent of women and 6.8 per cent of men were not in employment, education and training. These figures rise for the 20–24 age group with 13.7 per cent of women and 10.1 per cent of men not in employment education and training.

Not participating in employment or training is linked to future unemployment, and the long-term impact of this may include poor social participation, increased risk-taking behaviours, early parenthood and higher rates of criminal activity.

Lack of employment among youth who are unable to work due to ill-health or other reasons can lead to further economic and social disadvantage, and fewer resources and opportunities to improve health, contributing to a cycle of inequality.

DISCUSS

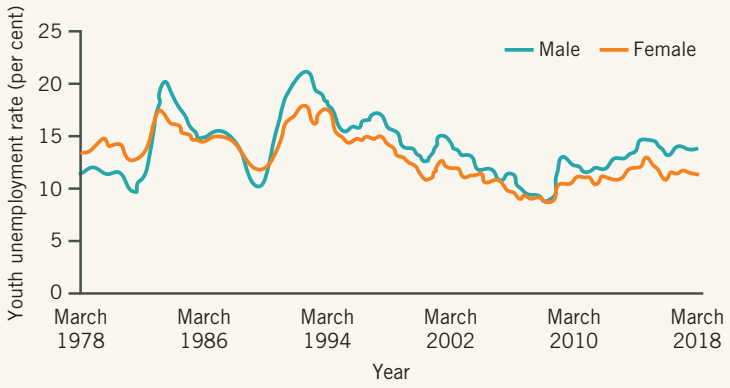


SOURCE: AIHW, 2017

FIGURE 3.9 Employment rates in 2008 and 2016 for people in categories of highest level of education

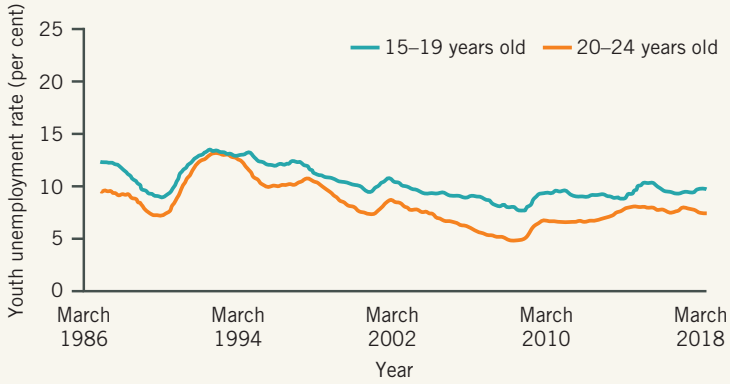
Discuss a trend evident in the graph in Figure 3.9.

ACTIVITY 3.4: YOUTH UNEMPLOYMENT



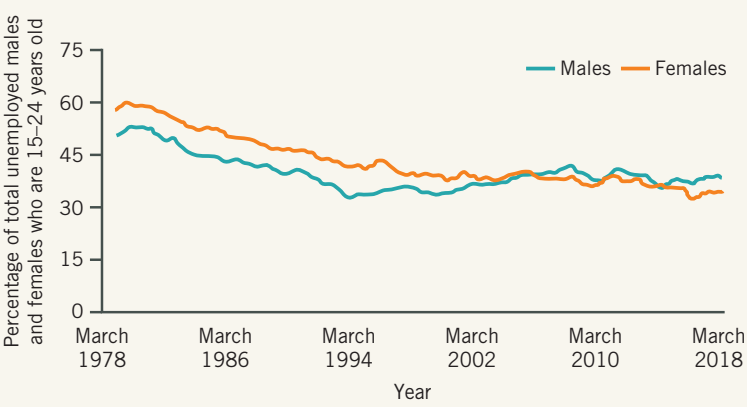
SOURCE: Youth Unemployment Statistics, Parliament of Australia, 2018

FIGURE 3.10 Youth unemployment rates for males and females (15–24 years old)



SOURCE: Youth Unemployment Statistics, Parliament of Australia, 2018

FIGURE 3.11 Youth unemployment rate by age (15–19 and 20–24 years old)



SOURCE: Youth Unemployment Statistics, Parliament of Australia, 2018

FIGURE 3.12 Percentage of total unemployed males and females who are 15–24 years old

1 Identify a trend evident in the graphs in Figures 3.10, 3.11 and 3.12.
2 Suggest a possible reason for the trend identified in Figures 3.10, 3.11 and 3.12.
3 Explain how unemployment might impact on the health behaviours of youth.
4 Explain how unemployment might impact on the health and wellbeing of young people.

Variations in health behaviours

Being employed can increase the income available for youth to enable them to access resources to promote physical activity or access healthcare. In this way, employment can promote positive health behaviours, such as eating a healthy diet, participating in physical activity and accessing healthcare.

Unemployment can result in youth having limited finances, which can also limit healthy lifestyle choices, increasing other behavioural risk factors (such as tobacco, alcohol or illicit drug use). For example, youth who are unemployed are more likely to use illicit drugs compared with those who are employed or participating in education. Being employed therefore appears to be a **protective factor** against risky health behaviours.

Variations in health and wellbeing, and health status

Unemployment has a significant adverse effect on both physical and mental health and wellbeing, and unemployed youth suffer a substantially increased risk of premature death. They have more serious chronic illnesses, greater prevalence of disability and suffer more psychological illness, stress and anxiety than employed youth.

The place of employment can influence health and wellbeing, as it can expose individuals to physical conditions that have an impact on health and wellbeing – for example, poor ventilation can aggravate allergies or asthma and cause respiratory illnesses. The workplace can also promote health and wellbeing, as it might provide a setting where healthy behaviours can be promoted, such as with VicHealth's Victorian Workplace Mental Wellbeing Collaboration, Nutrition Australia's workplace health program or the Victorian Government's Achievement Program. Those who are unemployed will miss the opportunity to benefit from these messages.

Depending on the type of job, employment can also contribute to injury or even death. Certain jobs, such as those in the transport, construction, agricultural, mining and manufacturing industries, are associated with a higher number of reported injuries and premature deaths.

protective factors: Positive factors in a person's life that decrease the chance of the person developing a problem or, if a problem exists, make it better; protective factors promote health and wellbeing and reduce the risk of harm, injury or death.

Physically demanding daily tasks such as labouring or construction can impact physical health by increasing the risk of sprains and strains, and employment that requires youth to work in uncomfortable working positions or sit for prolonged periods can lead to physical strain and injury. Jobs requiring repetitive movements and those with a high physical workload, including lifting, pushing or pulling heavy loads, put working youth at higher risk of musculoskeletal and strain injuries.

Unemployed people are less likely to have strong support networks, and long-term unemployment increases the risk of poor mental health and wellbeing, and self-harm, suicide and attempted suicide.

FIGURE 3.13 Physically laborious work can cause strains and injuries, which impact physical health and wellbeing.

ACTIVITY 3.5: EMPLOYMENT

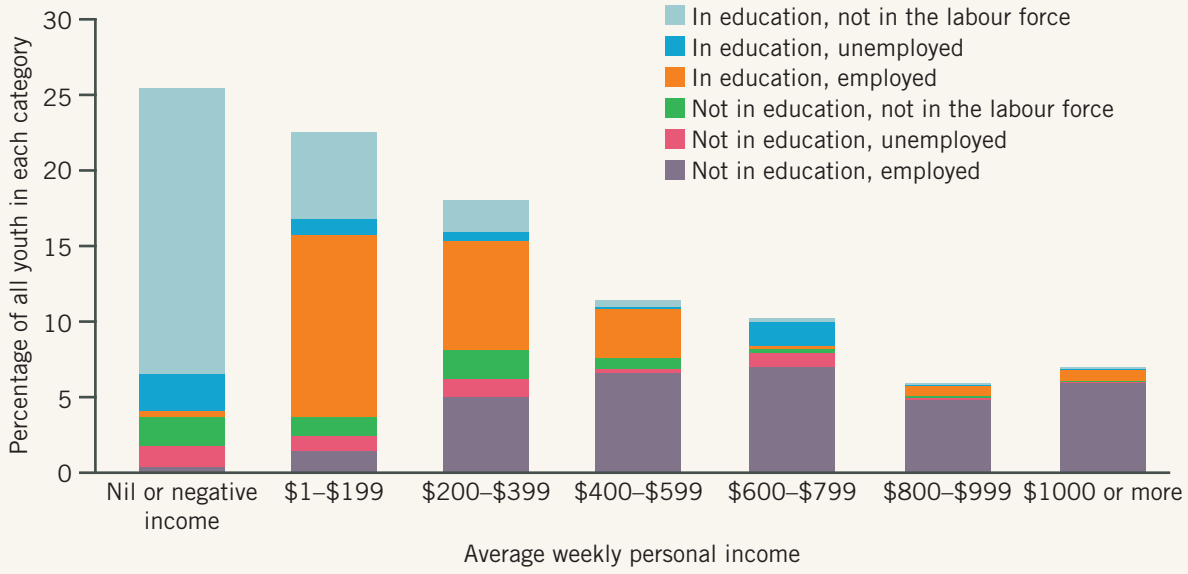
'Young Workers' was a WorkSafe Victoria campaign that ran from mid-August to mid-November 2016. The campaign ran online, including on social media.

1 Watch the following YouTube videos:
   - 'Think First – Construction' (available at https://cambridge.edu.au/redirect/8870)
   - 'Think First – Hospitality' (available at https://cambridge.edu.au/redirect/8871)
   - 'Think First – Warehouse' (available at https://cambridge.edu.au/redirect/8872).
2 Outline three reasons why young workers are particularly vulnerable to workplace injuries.
3 Explain how being employed can impact on the health behaviours of youth.
4 Outline examples of how employment can have a positive impact on the health and wellbeing of youth.
5 Other than promoting health and wellbeing, outline other advantages of youth being employed.
6 Outline examples of how employment can have a negative impact on the health and wellbeing, and health status of youth.
7 Explain, using examples, how being unemployed can impact negatively on the health behaviours of youth.
8 Outline how being unemployed can have a negative impact on the health and wellbeing, and health status of youth.

3.7 INCOME

An individual's income is often associated with their SES, as SES is determined by the key elements of income, education level, employment status and occupational type. The interplay of these factors is shown in Figure 3.14, which depicts the average income of youth by participation in education and employment. Research suggests that both physical and mental health and wellbeing are strongly associated with SES. In particular, studies suggest that low SES is linked to poorer health outcomes. Poor health may in turn decrease an individual's capacity to work, thereby reducing their ability to improve their SES.

Groups that are socioeconomically disadvantaged are also more likely to take part in health-damaging behaviours, have poorer psychosocial health, are less likely to use the healthcare system for preventative purposes and have a more adverse risk-factor profile.



SOURCE: AIHW analysis of the 2011 Census

NOTE: Data exclude those for whom education attendance, labour force status and income were not stated.

FIGURE 3.14 The average income of youth aged 15–24 years in income categories by educational attendance and labour force status, 2011

Income during youth is generally obtained from either employment or government allowance.

Youth with a low income or who live in low-income families are more likely to not have the financial resources they need to support a minimum standard of living. Having adequate income is important for ensuring that youth can access the resources they need, such as a safe home, healthy food and adequate healthcare.

Youth who have a low income not only have reduced access to these resources but also often experience social exclusion and isolation, and increased risk of homelessness.

Variations in health behaviours

Data suggest that those with lower incomes also have higher rates of smoking, even if they are not necessarily purchasing more tobacco than those with higher incomes; however, there has been a decline in the smoking rate among youth from all income groups over recent decades.

Youth with lower incomes are also less likely to participate in community support groups and less likely to practise safe sexual behaviours.

Variations in health and wellbeing, and health status

Young people on low incomes can also experience adverse health outcomes – especially mental health outcomes. Not having financial security can be a significant cause of stress and anxiety for youth on a low income. This may be due partly to their reduced ability to pay for necessities such as healthcare, food, medication and utilities. Low income, especially when combined with low educational attainment, is linked to a reduction in health over time. Not being able to afford resources such as food can lead to malnourishment and not being able to afford medication in the short term can mean that some illnesses require longer and more significant treatments to treat them in the future.

Low income can also impact social health, as it can lead to exclusion from social networks and isolation from community life.

EXTENSION QUESTION 3.2

Socioecomonic status is determined by the key elements of income, education level, employment status, and occupational type. In relation to a young person's family, describe the relationship between income, education, employment status, and occupation type and how this can influence the health and wellbeing, health behaviours, and health status of the young person.

3.8 ACCESS TO HEALTH INFORMATION AND SUPPORT SERVICES (INCLUDING THROUGH DIGITAL TECHNOLOGIES)

Youth often need support to help them during their transition into adulthood. They often turn to those around them, such as friends, parents, other family members, or teachers or support staff at school, for health-related information and informal support. Youth who use more traditional and formal health services typically use them differently from older people, as they often only access a health service once a condition becomes serious or chronic, and they rarely seek preventative healthcare.

barrier: An obstacle that may prevent or make it more difficult for people to achieve something for themselves; for example, a lack of money, poor skills, or a lack of knowledge.

Youth of both sexes and all socioeconomic groups experience **barriers** to accessing healthcare and health information. Accessibility refers to a service being geographically, culturally, financially and physically available to young people.

Youth might find it difficult to access reliable health-related information or services for several reasons, including:

- not knowing what sources are trustworthy
- not being able to get an appointment
- not knowing where to go for help
- their living arrangements
- lack of autonomy (not having their own Medicare card)
- discomfort about disclosing personal information
- language barriers
- lack of confidence
- literacy levels
- concerns about confidentiality
- a lack of information and knowledge about their own health
- stigma
- poverty
- fear of discrimination due to their identity (cultural or sexual)
- cost of service
- issues with transport
- availability of information or services.

Access to comprehensive and high-quality information relating to health and wellbeing, and healthcare, is important for ensuring that there is equity in being able to achieve optimal health for all groups within the population. An inability to access appropriate and reliable health information and healthcare services can be detrimental to health and wellbeing in a number of ways, including the misdiagnosis of illness, delayed treatment or inappropriate advice. As a result of some youth not being able to access traditional healthcare services, they often turn to the internet or peers for informal information. The internet provides an opportunity for many youth who might otherwise be excluded to freely and easily access information via their smartphone.

Youth should use media and digital technology safely, and younger youth will require appropriate parental guidance and monitoring. The growth of electronic media and digital information targeted at youth means that consideration must be given to the ways in which young people access health-related information online.

According to Mission Australia's *Youth Survey Report 2018*, when asked, 'Where do you go for help with important issues?' most Australian youth identified friends (84.5 per cent) or parents (76.1 per cent); however, many also indicated that they used online or telephone services. The internet was identified by 49.4 per cent of youth as a source of advice on issues, while 53.8 per cent accessed a GP or health professional for help and 17.4 per cent used a telephone hotline.

ACTIVITY 3.6: ADVANTAGES AND DISADVANTAGES OF ONLINE COUNSELLING

Online counselling refers to counselling services available through the internet, and includes email, chat rooms, texting and video calls. Online counselling is also called cyberspace counselling, e-therapy, e-counselling and tele-counselling.
In groups, create a PMI (pluses, minuses and interesting) chart for online counselling.

DISCUSS

FIGURE 3.15 There are many health services that can assist young people.

Make a list of the health services in your local area that young people can access. Discuss why young people may not access these services when they need them.

CASE STUDY: DOCTORS IN SECONDARY SCHOOLS PROGRAM

Doctors in Secondary Schools is a Victorian Government initiative that has seen the funding of general practitioners in approximately 100 government secondary schools for up to one day a week.

The objectives of the program are to:

- make primary healthcare more accessible to students
- provide assistance to young people to identify and address any health problems early
- reduce the pressure on working parents.

The Victorian Government has engaged Victoria's six Primary Health Networks to lead the engagement of medical centres, GPs and practice nurses to work in the program in select secondary schools across metro and non-metro Victoria.

All secondary school students enrolled in a participating school will be able to access an adolescent health trained GP, subject to providing the required consent for the services. Participating schools, students and their parents/carers will not incur any out-of-pocket expenses for student consultations with the GP.

Services such as asthma plans, mental health plans, contraception advice and many other medical concerns can be addressed by the doctor.

SOURCE: Doctors in Secondary Schools, Victorian Government Department of Education and Training, 2019

1. Summarise two advantages of the Doctors in Secondary Schools program.
2. Summarise two potential concerns young people may have about the Doctors in Secondary Schools program.
3. Explain why the Victorian Government has invested money in providing a doctors service within school grounds.
4. Based on the list of possible benefits and concerns, do you think that the Doctors in Secondary Schools program should be extended to all secondary schools in the state? Justify your response.

FIGURE 3.16 A purpose-built facility for the Victorian Government's Doctors in Secondary Schools program

FIGURE 3.17 A number of apps such as Happify have been developed to provide young people with information on health and wellbeing.

Variations in health behaviours

It is hoped that youth who seek support for their health through information provided by support services will be able to modify their behaviours and improve their health and wellbeing.

Having access to health and wellbeing resources can empower youth to take responsibility for their health and wellbeing by being able to modify their behaviours. A number of apps have been developed to assist youth; however, not all apps are appropriate for promoting healthy behaviours in youth. It is also important to note that there is minimal evidence that these kinds of apps actually have a significant impact on psychological wellbeing; despite this, they can provide youth with the information or resources they may need.

FIGURE 3.18 Besides seeing a healthcare professional in person, young people can access quality health information online.

ACTIVITY 3.7: APPS FOR HEALTH AND WELLBEING

1 Create a list of apps that young people can access to help improve their health and wellbeing.
2 Choose one of the apps you identified in Question 1 and review the app. Consider the app's strengths and limitations in promoting youth health and wellbeing.

ACTIVITY 3.8: HEALTH INFORMATION AND ACCESS

1 Explain some barriers that young people may face in accessing health information and support services.
2 Explain how accessing health information and support services through digital technologies can address some of these concerns.
3 Identify and explain some concerns with accessing health information and support services through digital technologies.
4 Find a website or online counselling service that provides young people with health information or support services. Explain how the website or online service might impact on the health behaviours of youth.

EXTENSION QUESTION 3.3

Create a mindmap showing the impact of the sociocultural factors discussed in this chapter on the health behaviours, health status, and the health and wellbeing of youth.

CHAPTER SUMMARY

- Sociocultural factors are aspects of society and the social environment that impact on health and wellbeing. Sociocultural factors include family, peer group, income, education, employment, housing, and having access to health information and services.
- Sociocultural factor – **family:**
  - refers to two or more persons, one of whom is aged 15 years or over, who are related by blood, marriage (registered or de facto), adoption, step or fostering, and who usually reside in the same household
  - family members can provide information and advice to promote healthy behaviours (e.g. eating habits) and to promote health and wellbeing
  - family members can act as role models for unhealthy behaviours (e.g. smoking) that can have a negative impact on physical health and wellbeing and health status.
- Sociocultural factor – **peer group:**
  - refers to a group of individuals who are similar ages and who share similar interests; peer relationships during youth are significant
  - young people often consider their peers' or friends' opinions when they make decisions on health-related behaviours (e.g. choices about drugs, alcohol, sexual behaviours) and other risk-taking behaviours
  - positive peer relationships can promote resilience, improve wellbeing and result in higher levels of self-esteem and improved mental health and wellbeing; strong social connections with peers can protect individuals from all causes of mortality.
- Sociocultural factor – **income:**
  - socioeconomically disadvantaged groups are more likely to engage in health-damaging behaviours, experience poorer psychosocial health, make less use of the healthcare system for preventative purposes, and have a more adverse risk-factor profile
  - low-income groups are more likely to experience adverse health outcomes, especially mental health outcomes
  - not being able to afford resources such as food can lead to malnourishment and an inability to afford essential medication and can impact physical health and wellbeing
  - having a low income can also impact social health, as it can lead to exclusion from social networks and isolation from community life.
- Sociocultural factor – **education:**
  - education provides young people with the skills and knowledge they need to practise health-promoting behaviours
  - educational attainment is associated with better health and wellbeing throughout life; those with higher educational attainment are less likely to be overweight or obese than those with lower levels of education.
- Sociocultural factor – **employment:**
  - income that young people earn through work can enable them to afford a range of resources to promote health, such as healthy food, healthcare services, and services to promote physical activity (e.g. gym memberships)

  - › employment can negatively impact young people, especially if it encourages a sedentary lifestyle, if the employment environment is hazardous (physical health and wellbeing) or if the individual experiences workplace bullying (mental health and wellbeing)
  - › employment gives young people the opportunity to make new connections and friends; this can help to reduce levels of social isolation, which improves social health and wellbeing.
- Sociocultural factor – **housing:**
  - › the location of housing can influence health-related behaviours and accessibility to local resources (e.g. an affordable food supply)
  - › homelessness is linked to increased rates of mental health disorders
  - › poor housing conditions (e.g. the growth of mould, cold drafts and overheating in summer) can impact physical health and wellbeing
  - › overcrowding can impact health, wellbeing and health status as it can increase diarrhoeal diseases, eye infections, ear infections, respiratory disease and other infectious diseases such as meningococcal.
- Sociocultural factor – **access** to health and wellbeing information and support services (including through digital technologies):
  - › having access to health resources can empower young people to take responsibility for their health and wellbeing by modifying their health behaviours
  - › when youth can access mental health services, they can be supported to improve their mental health and wellbeing
  - › access to medical doctors can ensure timely treatment and diagnosis of conditions (e.g. asthma), thus improving physical health and wellbeing and reducing the incidence and prevalence of asthma rates in youth.

KEY QUESTIONS

SUMMARY QUESTIONS

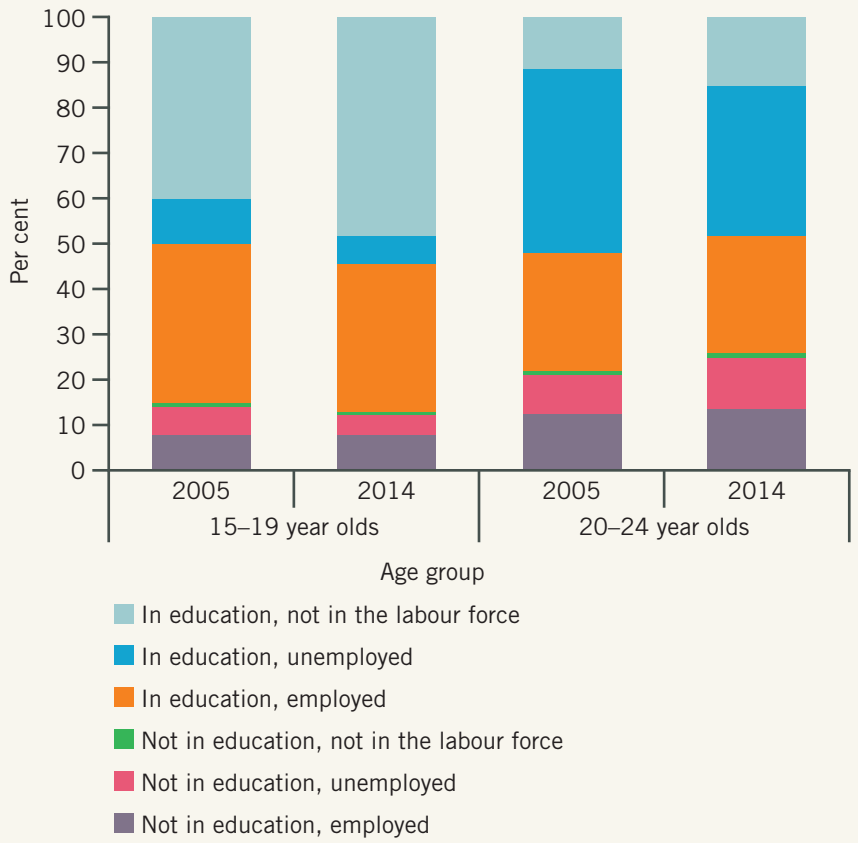
1. Outline how family can impact on the health behaviours, health status, and the health and wellbeing of youth.
2. Discuss how peers can have a positive impact on the health behaviours of youth.
3. Discuss how peers can have a negative impact on the health behaviours of youth.
4. Discuss the impact of peers on the health and wellbeing, and health status of youth.
5. Analyse how housing can impact on the health behaviours, health status, and health and wellbeing of youth.
6. Describe how education can have a positive impact on the health behaviours of youth.
7. Evaluate how education can have a positive impact on the health and wellbeing, and health status of youth.
8. Evaluate how education can have a negative impact on the health and wellbeing, and health status of youth.
9. Examine how employment can impact the health behaviours, health status, and the health and wellbeing of youth.
10. Interpret how income can have a positive impact on the health behaviours of youth.
11. Describe how income can have a negative impact on the health behaviours of youth.
12. Explain the impact of income on the health and wellbeing, and health status of youth.
13. Discuss how access to health information and support services can impact on the health behaviours, health status, and the health and wellbeing of youth.

EXTENDED-RESPONSE QUESTION

QUESTION

You have just started working for a youth health agency and you have been asked to write a grant application to the federal government, asking for funding to invest in addressing the sociocultural factors that impact the health and wellbeing of youth. Select one of the sociocultural factors discussed in this chapter (the factor that you think has the greatest potential to improve the health and wellbeing of youth) and justify why you think youth health behaviours, health and wellbeing and health status will improve if the government invests in this factor. (8 marks)

EXAMINATION PREPARATION QUESTIONS



SOURCES: ABS 2005; AIHW analysis of ABS 2015.

FIGURE 3.19 Participation in education and/or employment among young people aged 15–24, by age group, 2005 and 2014

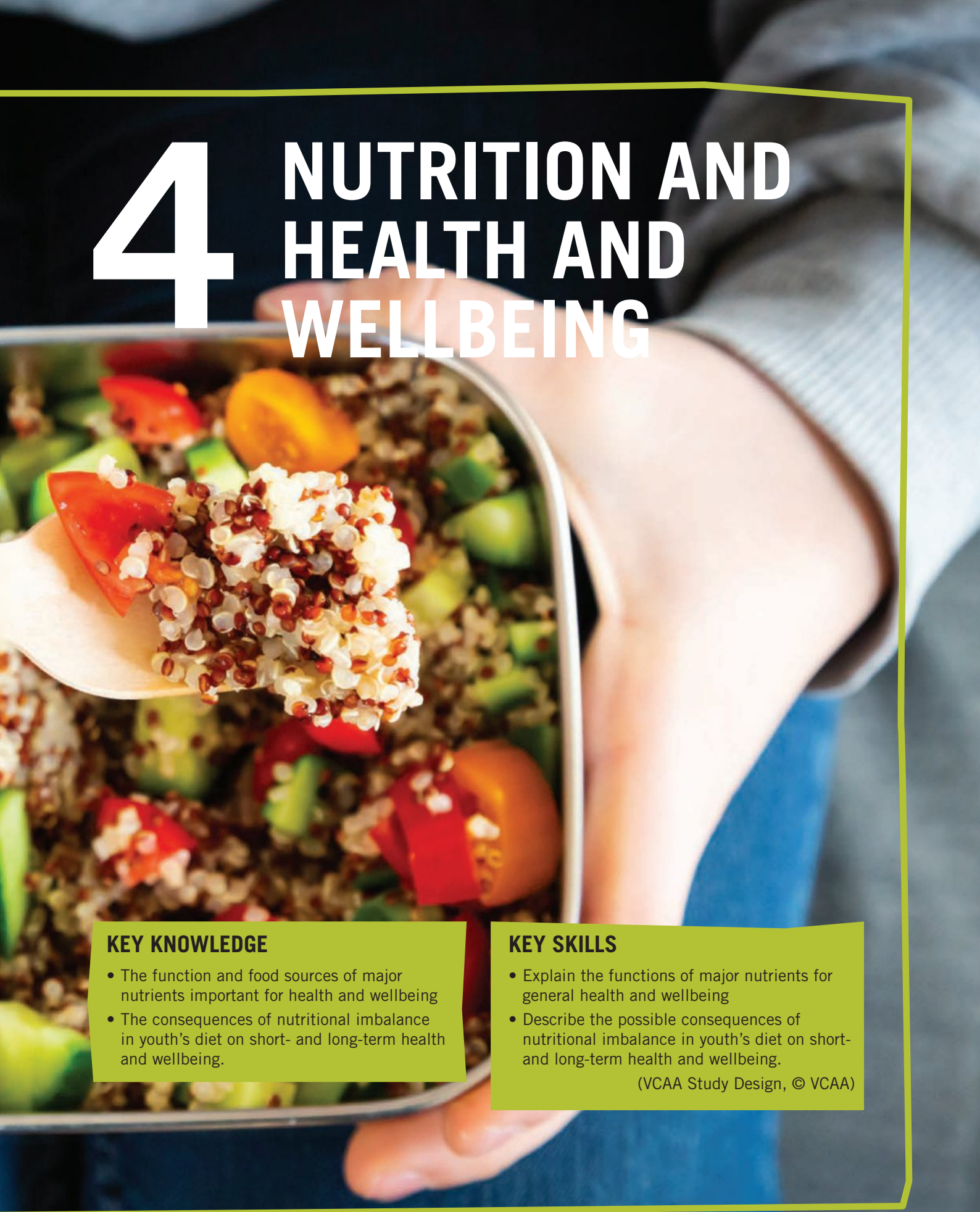
A Examine Figure 3.19. Outline two trends in relation to the percentage of youth participating in full-time study in this data. (2 marks)

B Explain how education can impact on two health behaviours of youth. (4 marks)

C Explain, using two examples, how education can impact on the health and wellbeing of youth. (4 marks)

D As youth make the transition to adulthood, the percentage of youth who participate in full-time work increases. Outline two examples of how work can impact on the health and wellbeing of youth. (4 marks)

4 NUTRITION AND HEALTH AND WELLBEING



KEY KNOWLEDGE

- The function and food sources of major nutrients important for health and wellbeing
- The consequences of nutritional imbalance in youth's diet on short- and long-term health and wellbeing.

KEY SKILLS

- Explain the functions of major nutrients for general health and wellbeing
- Describe the possible consequences of nutritional imbalance in youth's diet on short- and long-term health and wellbeing.

(VCAA Study Design, © VCAA)

AOS 2

INTRODUCTION

Achieving optimal health and wellbeing involves a range of factors, both internal and external. These factors interact with one another and ultimately contribute to each person's health and wellbeing. One of the major factors is nutrient intake, which is the result of eating patterns and food intake. During all stages of the life span, nutrient intake plays a vital role in health and wellbeing. During the youth stage of the lifespan, nutrient intake is particularly important for growth and it impacts both long- and short-term health and wellbeing.

The first part of this chapter looks at both macro- and micronutrients, their functions in the human body and their food sources. The second part of the chapter looks at causes of nutritional imbalance, in particular during the youth stage of the life span. Common dietary behaviours that cause nutritional imbalance amongst youth are explored in this section, and the over-consumption or under-consumption of particular nutrients that occurs as a result of these behaviours is explored. In the final two sections of the chapter, the short-term and long-term consequences of these nutritional imbalances for youth health and wellbeing are discussed.

What you need to know

- The function of major nutrients.
- The food sources of major nutrients.
- The impact of major nutrients on health and wellbeing.
- Dietary behaviours that can cause imbalance.
- The short-term consequences on health and wellbeing of nutritional imbalance.
- The long-term consequences on health and wellbeing of nutritional imbalance.

What you need to be able to do

- Explain the functions of major nutrients.
- Explain how major nutrients can impact general health and wellbeing.
- Describe the possible consequences of nutritional imbalance on the short-term health and wellbeing of youth.
- Describe the possible consequences of nutritional imbalance on long-term health and wellbeing of youth.

FIGURE 4.1 An overview of nutrition and health and wellbeing

4.1 FUNCTIONS AND FOOD SOURCES OF MAJOR NUTRIENTS

The basic living unit of your body is the cell. Every structure in the body is composed of a collection of many different cells, with each performing its function in support of the overall successful operation of the body. Food taken in by the body is digested, allowing the release of **nutrients**, which are transported to the cells. Nutrients are substances found in food that are required by the body for the growth and maintenance of body systems. The cells use these nutrients to perform all the functions that the body requires, including energy production, growth, repair and replacement of body cells and tissues, and the regulation of body processes.

nutrients: Substances found in food that are required by the body for growth and for the maintenance of body systems.

The essential nutrient categories include carbohydrates (including fibre), proteins, fats, vitamins, minerals and water. Some nutrients, referred to as macronutrients, are large molecules and are required in high quantities. Carbohydrates, protein and fats are all macronutrients. Vitamins and minerals are known as micronutrients. They are small in size and are only needed in small quantities for the functions they perform.

Throughout the lifespan, nutrient requirements change due to various factors including growth patterns, level of activity, and lifestyle-related stresses such as disease.

AOS 2

FIGURE 4.2 An overview of the major nutrients

4.2 MACRONUTRIENTS: CARBOHYDRATES, PROTEIN AND FATS

Carbohydrates

Carbohydrates can be classified into three categories: **simple carbohydrates**, **complex carbohydrates** and **fibre**. All three consist of combinations of sugar molecules bound together in various lengths. The simple carbohydrates are the smallest and are made up of one or two sugar molecules. The complex carbohydrates are made up of longer chains of these smaller simple sugars.

Function of carbohydrates

Both simple and complex carbohydrates are the major and preferred source of energy of the body. They provide nearly all the energy needed for daily brain function, as well as over half the daily energy needed for proper muscle, nerve and tissue development. While proteins and fats can be broken down and converted into energy, it is generally more efficient and faster for the body to use carbohydrates for this function. Complex carbohydrates are particularly important, as they deliver sustained energy to the body. Foods with complex carbohydrates usually also supply a source of fibre and are usually nutrient-dense foods, providing B-group vitamins for energy release as well.

All carbohydrates, found in starches and sugars, get converted into the body's main fuel: the simple sugar glucose. Sugars, in the form of glucose, serve as an immediate energy source for the brain and central nervous system. Glucose is the basic functional molecule of energy within the cells of the human body – it is broken down to ultimately produce adenosine triphosphate (ATP), the fundamental unit of energy. An optimal diet should consist of at least 55 per cent of total energy coming from carbohydrates obtained from a variety of food sources. One gram of carbohydrates provides the body with 16 kJ of energy.

simple carbohydrates: Simple sugars that are made up of monosaccharides or disaccharides; they include glucose and fructose, and are broken down quickly by the body.

complex carbohydrates: (Also called 'polysaccharides'.) Found in carbohydrates that are digested more slowly than simple carbohydrates, including breads, pastas and cereals; the slower digestion allows for a more stable release of energy.

fibre: A type of carbohydrate – specifically, the indigestible part of plant foods such as vegetables, fruits, grains, beans and legumes – that the body does not digest.

Food sources of carbohydrates

Sources of simple carbohydrates include table sugar (sucrose), fruit (contains fructose), honey and milk (contains lactose). Sources of complex carbohydrates include wholegrain cereals (e.g. breads, pasta, rice, etc.), vegetables, legumes (e.g. dried beans, lentils) and fruit.

FIGURE 4.3 Wholegrain bread is a source of complex carbohydrates.

FIGURE 4.4 Honey is a source of simple carbohydrates.

Fibre

Fibre is a type of carbohydrate that the body does not digest. Fibre is the indigestible part of plant foods such as vegetables, fruits, grains, beans and legumes. There are three main types of fibre: soluble, insoluble and resistant starch. Each type of fibre is beneficial to the body and an individual needs to consume a combination of these each day to maintain health, in particular healthy bowels.

Function of fibre

Fibre plays a major role in keeping the body healthy; however, because the body does not digest it, it is not used in the production of energy. Instead, fibre's main function is to regulate the digestive system by adding bulk to faeces and helping with the elimination of waste from the body. The three different types of fibre each play a role in the regulation of the digestive system and also have other benefits; refer to Table 4.1.

EXTENSION QUESTION 4.1

Discuss why eating foods containing complex carbohydrates and fibre is a better option than eating foods containing only simple carbohydrates.

Food sources of fibre

Sources of insoluble fibre include wheat bran, corn bran, rice bran, the skins of fruits and vegetables, nuts, seeds, legumes and wholegrain foods. Sources of soluble fibre include fruits, vegetables, oat bran, barley and legumes. Sources of resistant starch include undercooked pasta, underripe bananas and cooked and cooled potatoes and rice.

EXTENSION QUESTION 4.2

Explain the role that soluble fibre has in preventing type 2 diabetes mellitus.

FIGURE 4.5 Sources of fibre include fruit and vegetables.

TABLE 4.1 The functions of fibre

TYPE OF FIBRE	FUNCTIONS IN THE BODY
Soluble fibre	• Helps to slow the emptying of the stomach, therefore promotes feeling fuller for longer • Helps to lower cholesterol • Helps to regulate blood glucose levels
Insoluble fibre	• Absorbs water, which softens bowel contents, assisting in regular bowel movements. • Promotes feeling fuller for longer • Keeps bowel environment healthy
Resistant starch	• Digested in the large intestine, assists in the production of good bacteria and improves bowel health

Proteins

Proteins are molecules made of amino acids. Protein plays a large number of essential functions in the body because once the amino acids are obtained from food, they can be reformed by the body to create many different new types of proteins including enzymes and hormones. Brain cells, muscle, skin, hair and nails are some of the human body parts that are made up of protein.

Function of proteins

Protein is important for the increase in the number and size of cells in the body. It is, therefore, the major nutrient required for the growth and maintenance of soft tissue, such as organs and muscle tissue. There are many different types of proteins and they all serve important roles in growth, development and everyday functioning.

Structural proteins provide support in our bodies. For example, the proteins in our connective tissues, such as collagen and elastin, are important for the increase in number and size of cells in the body and the rapid growth of soft tissue such as organs and muscle tissue that occurs during youth.

Contractile proteins are involved in muscle contraction and movement. These proteins therefore play a major role in the development of muscle mass during the youth stage of the lifespan.

DNA-associated proteins regulate chromosome structure during cell division.

Protein is also required for the bone lengthening and hardening that takes place during the childhood and youth stages of the lifespan. Bone tissue is a type of dense connective tissue formed from a collagen matrix containing a mineral compound within the matrix to make it hard. The type of protein used for bone growth is called osteocalcin, and bones would not have any strength or function without this protein. This is because it is unique in structure and binds calcium in exactly the right geometry to keep bones strong and dense.

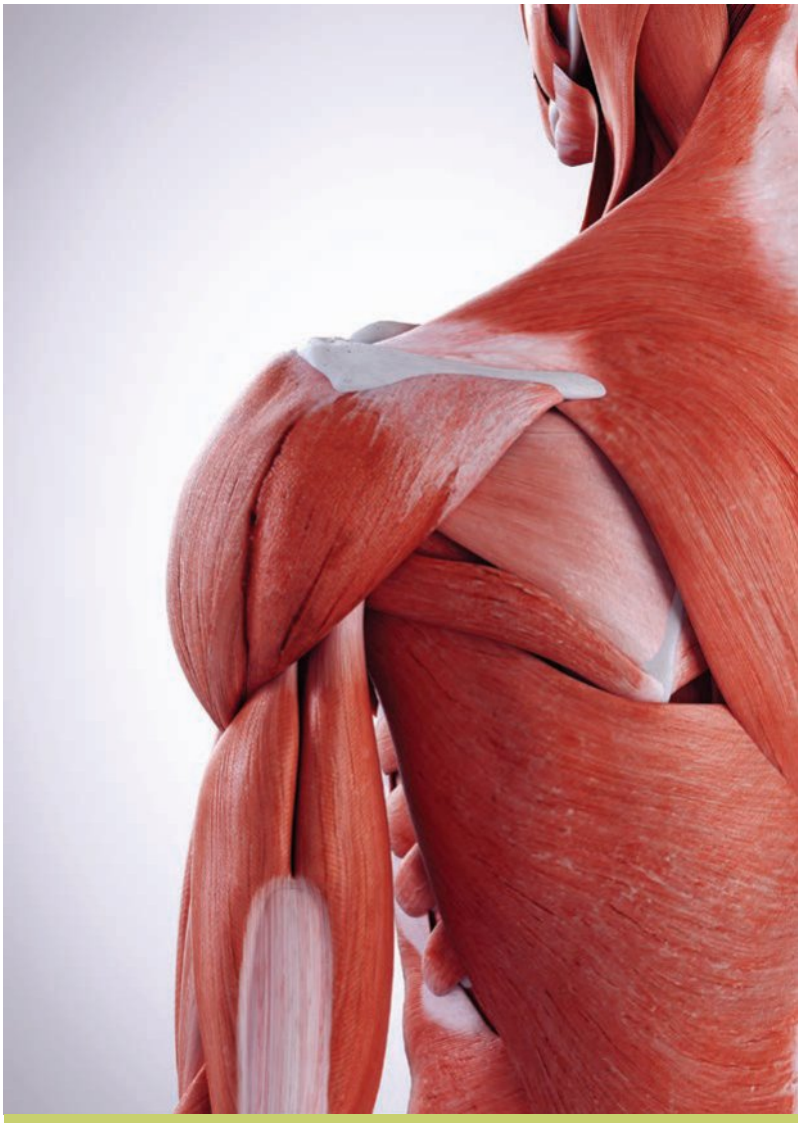


FIGURE 4.6 Protein is required for soft tissue growth and maintenance.

Protein plays a role in keeping a person's immune system strong, as it is used for the production of antibodies and red blood cells. For example, there are many different types of proteins that are found in the components of blood, and they perform many different functions within the blood. A protein called globin combines with iron (referred to as haem) in order to form haemoglobin. This protein is one example of many transport proteins that move molecules around the body. Protein is also an essential constituent of hormones, which are manufactured by the body.

While not as vital as carbohydrates and fats, proteins nonetheless have a major role to play in the area of energy creation. When the supply of carbohydrates is too low to adequately supply all the energy needs of the body, amino acids from proteins will be converted to glucose. One gram of protein provides 17 kJ of energy once it has been converted into glucose to be used as an energy source, and is therefore considered to be a secondary source of energy. It is recommended that no more than 10–15 per cent of energy needs should come from protein.

Food sources of protein

Proteins can be obtained from both animal- and plant-based foods. Foods that have protein include red meat, poultry, fish, eggs, milk and other dairy products, legumes, nuts and seeds.

Fats

There are four main classes of fats (also known as lipids): **saturated fats**, **trans fats**, **monounsaturated fats** and **polyunsaturated fats**.

Function of fats

Fats are required for the formation of cell membranes and are therefore involved in the development of all cells in the body. A cell membrane (also called a plasma membrane) is a thin casing that separates the interior of the cell from the outside environment. A cell membrane plays a vital role in the body, as the job of the cell membrane is to selectively allow other molecules to enter or leave the cell in order for it to perform its functions.

ACTIVITY 4.1: PROTEIN

Protein is a nutrient that plays an essential role in the health and wellbeing of an individual during youth. Conduct some research about protein. Using an online tool, create a summary table, concept map or infographic that outlines the importance of protein for health and wellbeing. In your summary, use images that demonstrate the function of this nutrient. Remember to include a list of the appropriate food sources of protein.

FIGURE 4.7 High-protein foods include meat, dairy, eggs and nuts.

saturated fats: Types of lipids that have a hydrogen atom attached to every chemical bond, and therefore do not have a double bond in their chemical composition; saturated fats tend to be solid at room temperature; a major source of saturated fats are animal products.

trans fats: A type of fat formed mainly from the hydrogenation of oils.

monounsaturated fats: Types of lipids that do not have a hydrogen atom attached to every chemical bond, and therefore have a double bond in their chemical composition; monounsaturated fats have one double bond; unsaturated fats tend to be liquid at room temperature (e.g. oils).

polyunsaturated fats: Types of lipids that do not have a hydrogen atom attached to every chemical bond, and therefore have a double bond in their chemical composition; polyunsaturated fats have more than one double bond; unsaturated fats tend to be liquid at room temperature (e.g. oils).

Fats play several roles in the body once consumed and digested. All of these types of fats are a concentrated source of energy, providing 37 kJ of energy per gram, and are used at certain times of energy need. Fats are not, however, the body's preferred source of energy. Fats are more difficult and take more time to break down than carbohydrates in order to be a useful energy source in the form of glucose. It also uses a lot of energy to actually convert fats into glucose in order to be used as an energy source. Nutrition experts recommend that fats make up no more than 30 per cent of the diet.

Omega 3 and omega 6 fatty acids are also important components of fat; they are found mostly in the polyunsaturated fats of oily fish (e.g. sardines, tuna and salmon) and in some nuts. These nutrients are important for the body, as they help to maintain a healthy level of cholesterol.

Fats also act as a carrier for the fat-soluble vitamins, such as vitamin A, which are necessary for body functions taking place at this time, including cell duplication.

If consumed in excess, saturated fats can contribute to raised levels of low density lipoproteins (LDLs) in the body. These are considered to be 'bad' forms of cholesterol and contribute to the risk of **cardiovascular disease (CVD)**. For more on CVD, see page 116–17.

Trans fats are not considered to be a healthy fat as they can detrimentally affect the structure of cell membranes and can also negatively affect the levels of high-density lipoprotein, HDL (good) and increase LDL (bad) cholesterol – a risk factor for CVD.

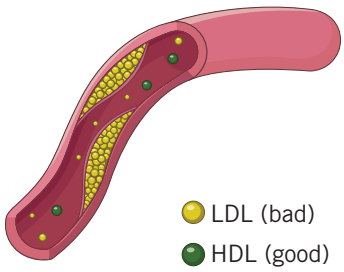


FIGURE 4.8 LDL and HDL cholesterol behave differently in the bloodstream.

FIGURE 4.9 Salmon, nuts, seeds and oils are all sources of fats.

While over-consumption of any of the types of fats can contribute to the risk of overweight and obesity, monounsaturated and polyunsaturated fats are considered to be the healthier options for fat intake as they can have positive effects on the level of LDL cholesterol in the body by lowering it, and in some instances are able to raise the level of HDL cholesterol.

cardiovascular disease (CVD): Includes all diseases and conditions of the heart and blood vessels (including heart, stroke and vascular diseases) caused mainly by a restriction of the blood supply to the heart, brain and legs.

Food sources of fats

Sources of saturated fats include red meat, dairy products such as milk, cream, butter and cheese, and eggs. Main sources of trans fats include many processed foods such as pastries and cakes, vegetable shortening and some fried foods. Natural sources where trans fats may occur in very small amounts include beef and some dairy products. Sources of monounsaturated fats include nuts such as macadamias and almonds, and oils such as olive oil and canola oil, as well as avocados. Sources of polyunsaturated fats include margarine and vegetable oils, oily fish such as sardines, nuts and seeds.

Water

Water is the most plentiful substance in the body, making up about 55–65 per cent of average body weight. Water performs many necessary functions in the human body.

Function of water

The water in the bloodstream is the primary transportation system for the distribution of essential nutrients and oxygen throughout the body. In addition, water is essential for a wide array of body processes, including the chemical reaction of cell respiration that results in energy production.

Water is a major component of the cytoplasm and nucleus in the cells that make up soft tissue. It is also required for many essential chemical reactions that take place in cells, and it surrounds cells, acting as a carrier and transportation system for many of the substances that cells need in order to function effectively, such as oxygen and essential nutrients. Water is required for all cell duplication and growth of the body.

Food sources of water

There are many available sources of water other than tap water and bottled water. Some foods have a high-water content, including many fruits and vegetables such as celery, cucumber, tomatoes, zucchini, pineapple, watermelon and oranges.

EXTENSION QUESTION 4.3

Consider the different sources of water and explain why it is recommended that the majority of intake is from tap water.

ACTIVITY 4.2: MACRONUTRIENTS SUMMARY

Create a poster that summarises the macronutrients. Your poster should combine written information with pictures and/or drawings. Outline the following information in your summary:

a Identify and define each of the macronutrients, including their sub-categories where relevant (e.g. carbohydrates has the sub-categories of simple carbohydrates, complex carbohydrates, soluble fibre, insoluble fibre and resistant starch).

b Explain the function of each macronutrient.

c List the food sources for each macronutrient, or the sub-categories where relevant.

ACTIVITY 4.3: MACRONUTRIENTS – SOURCES OF ENERGY

TABLE 4.2 Recommendations for energy intake from fats, carbohydrates and proteins

NUTRIENT SOURCE FOR ENERGY	RECOMMENDED PERCENTAGE OF TOTAL ENERGY (PER DAY)
Total fat	15–30
Saturated fats	<10
Polyunsaturated fats	6–10
Trans fatty acids	<1
Total carbohydrates	55–75
Sugars	<10
Protein	10–15

The kilojoules provided to the body by the conversion of 1 g of each of the macronutrients into an energy source are as follows:

- carbohydrates: 16 kJ
- proteins: 17 kJ
- fats or lipids: 37 kJ.

1 Discuss why carbohydrates are the body's preferred energy source, even when fats offer the body twice as much energy per gram.

2 Identify the suggested percentage of energy intake that an individual should obtain from each of the macronutrients. For each nutrient, suggest reasons why that percentage has been recommended.

3 From your reading, name the sources of carbohydrates and fats or lipids that are considered to be the most appropriate options for health and wellbeing. Explain why these are recommended.

4 Explain the function of each of the macronutrients in energy production.

5 Outline the role played by water in energy production.

6 Outline possible reasons why youth may not consume adequate amounts of water.

4.3 MICRONUTRIENTS: MINERALS AND VITAMINS

Adequate intakes of vitamins and minerals are an important part of nutrition. Minerals are vital because they are the building blocks that make up muscles, tissues and bones.

Minerals are inorganic chemical substances essential to a number of important body processes. The human body needs at least 20 different minerals to function and maintain body processes effectively. Some minerals are required in large amounts. For example, calcium – the major constituent of the hard part of teeth and bones – is required on a daily basis. Other minerals are needed in smaller, or trace, amounts. Minerals and vitamins cannot be produced by the body and must be consumed regularly in the diet.

Vitamins are organic substances present in food. They are required by the body in small amounts to regulate metabolism and to maintain normal growth and functioning. Vitamins fall into two general categories: fat soluble and water soluble.

Fat-soluble vitamins include vitamins A, D, E and K. Insoluble in water (and therefore insoluble in blood), these nutrients require carriers to travel through the bloodstream. Water-soluble vitamins include vitamin C and the eight B vitamins.

Vitamins and minerals are important for all the complex reactions that take place in the body. Although they don't provide energy directly, vitamins and minerals work together to help carbohydrates, protein and fats produce energy, to assist with protein synthesis and to help keep the body functioning normally.

Mineral: calcium

Calcium is a mineral that is essential for building strong bones and healthy teeth. Adequate calcium intake is vital for the development of strong and dense bones throughout times of growth spurts because calcium assists in bone ossification (or formation).

During youth, the growing bones absorb more calcium from the blood than at any other time of life. This is due to the preparation the body is undertaking for the attainment of peak bone mass (which usually occurs between the ages of 20–30) by dramatically increasing bone density and strength. Inadequate calcium intake during youth and young adulthood puts

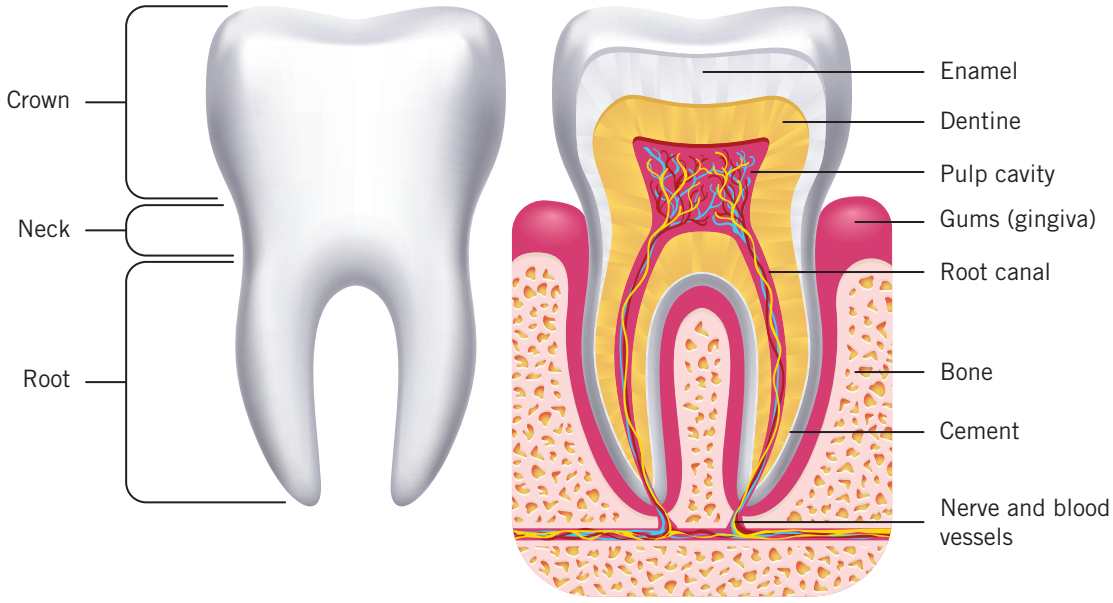


FIGURE 4.10 Calcium provides hardness to the dentine in teeth.

individuals at risk of developing osteoporosis later in life.

The efficiency of calcium absorption is only around 30 per cent so it is important that the diet supplies an adequate calcium intake to help build the densest bones possible. Calcium also helps to transport ions (electrically charged particles) across cell membranes; therefore, calcium in the bloodstream is important for muscle contraction and the conduction of nerve impulses. Components of teeth also require calcium in order to develop in a healthy way; in particular, calcium provides hardness to the dentine and the enamel of teeth.

Food sources of calcium

Dairy products such as milk, cheese and yoghurt are the most concentrated, easily absorbed sources of calcium. Other foods that can contribute to dietary calcium include firm tofu (chemically set with calcium), calcium-fortified soy products, some legumes and nuts, and green leafy vegetables such as kale, broccoli and bok choy. Calcium from oxalate-rich foods, such as spinach, is poorly absorbed by the body.

Mineral: phosphorus

Phosphorus is the second most abundant mineral present in the body (calcium is the most abundant). Approximately 85 per cent of body phosphorus is found in the bones, with the remaining 15 per cent found in the soft tissues. Calcium and phosphorus are co-dependent nutrients affecting the health of hard tissues by influencing their strength. Sufficient phosphorus intake is important throughout the lifespan, to ensure the proper balance of calcium and phosphorus in order to promote remineralisation of bones and teeth to keep them in a healthy state. The presence of these minerals in the bones is not static, and both of them are in constant turnover based on their levels in blood. In the bones, phosphorus is present in an amount about half that of the total calcium.

Food sources of phosphorus

Phosphorus is most often found in foods that are high in protein. Rich sources of phosphorus include milk, cheese, eggs, yoghurt, meats such as beef, lamb and chicken, fish, and nuts and legumes.

Mineral: iron

The body uses most of the iron (approximately 70 per cent) it absorbs in the production of haemoglobin, the protein in red blood cells that transports oxygen throughout the body.

Haemoglobin transports oxygen in the blood from the lungs to the tissues, which need oxygen to maintain basic life functions. Extra iron is needed during growth spurts – especially during youth – to increase blood volume in the bodies of both males and females. As individuals grow and gain greater muscle mass, an increase in iron is also required to help their new muscle cells obtain oxygen for energy production. Iron is also needed in females to replace blood loss during menstruation.

A deficiency of iron can cause **anaemia**. Females are often expected to have higher rates of anaemia than males because of iron lost during menstruation; however, males are also susceptible to this deficiency disease. Anaemia is a health concern because it affects growth and energy levels.

Food sources of iron

Red meat is a rich source of iron that is well absorbed. Other major sources of iron include wholegrain cereal products. Iron can also be found in some vegetables, legumes and nuts; however, iron from animal foods (known as haem iron) is much better absorbed than iron from nonanimal sources (non-haem iron). Many breakfast cereals and some breads are fortified with iron.

FIGURE 4.11 Iron from animal products is known as 'haem iron' and is more easily absorbed by the human body than iron from non-animal sources.

FIGURE 4.12 Kale is an example of a vegetable that is high in non-haem iron.

anaemia: A reduced level of haemoglobin, the protein that carries oxygen in the red blood cells; it can cause paleness, tiredness and even breathlessness.

Mineral: sodium

The main use of sodium by the body is in the regulation of blood pressure, blood volume and body fluids. Together with other minerals, sodium is found in extracellular fluid, and its concentration needs to be controlled efficiently to maintain a healthy balance of fluid both within and outside body cells.

Food sources of sodium

Sodium can be obtained from table salt, cured meats such as ham and salami, cheese, fish and many processed foods, including snack products, sauces, canned vegetables and meats (e.g. tuna), ready-made meals and breakfast cereals.

Mineral: iodine

gland: An organ in the body that produces and releases hormones.

hormone: A chemical substance produced by the body that regulates and controls a wide range of body processes, including physical growth and development.

Iodine is used mostly by the thyroid **gland**, where it forms an essential component of the thyroid **hormone** thyroxin. Thyroid hormones regulate cell activity and growth in virtually all tissues, and are essential for normal growth and development as well as energy use. Efficient iodine production is particularly important during pregnancy to prevent a deficiency that can cause intellectual disability in the foetus. Iodine also plays a role in the metabolism of the energy nutrients.

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Food sources of iodine

The iodine content of food and water depends primarily on the supply of iodine in the soil. Iodine can also be found in fish and seafood products, and there are fortified versions of table salt (iodised salt) that can also be consumed to supply iodine to the body.

Fat-soluble vitamins: vitamin A

Vitamin A is a fat-soluble vitamin that is stored primarily in the liver. Vitamin A has a role in normal cell growth. In particular, vitamin A has a major role in the development and healthy maintenance of epithelial cells (cells that line the mucous membranes, such as lungs, skin, intestine, nose and mouth). Vitamin A is also involved in the development of healthy skin, another of the body's soft tissues.

FIGURE 4.13 Green leafy vegetables are a good source of vitamin A.

Vitamin A is also essential for healthy vision as it provides some protection to the cornea (surface of the eye).

Food sources of vitamin A

Dark-green leafy vegetables and yellow and orange vegetables and fruits, such as broccoli, spinach, carrots, squash, sweet potatoes, pumpkin, cantaloupe and apricots, and animal sources such as liver, milk, butter, cheese and whole eggs are good sources of vitamin A. It can also be found in oily fish.

Fat-soluble vitamins: vitamin D

Vitamin D is essential for the absorption and use of calcium and phosphorus, and therefore helps to maintain bone growth and health by promoting bone hardening. The major function of vitamin D in humans is to maintain appropriate blood calcium concentrations by enhancing the ability of the small intestine to absorb calcium from the diet. It is estimated that the body actually absorbs as little as 20–40 per cent of the calcium in food sources. When vitamin D is in short supply in the body, even less calcium is absorbed from food, and blood levels have to be maintained by taking calcium from the bones. Vitamin D helps with increasing the absorption of calcium, promotes strong teeth and assists in bone growth and the integrity of bone. Vitamin D also plays a role in enhancing absorption of phosphorus from food intake.

There is some evidence that vitamin D may also have an impact on mental as well as emotional health and wellbeing. Many studies have been conducted on vitamin D levels and the potential positive impact of light therapy during winter on those who suffer from seasonal affective disorder (SAD). SAD is a form of mental health disorder that affects those who experience significant changes in mood and levels of depression based on the seasonal conditions. Findings suggest that there is some correlation between vitamin D levels and depression, as many people who suffer from this condition and other mental health disorders are found to be deficient in vitamin D.

Food sources of vitamin D

Small amounts of the vitamin D required by the human body are obtained from food – only 5–10 per cent. These foods include butter, cream, cheese, whole eggs, liver, salmon and fortified margarine. Ultraviolet (UV) radiation from the sun is the best natural source of vitamin D. The skin synthesises vitamin D if exposed to enough sunlight on a regular basis.

Water-soluble vitamins: vitamin C

The most important function of vitamin C in the human body is participation in the formation of collagen along with protein. Collagen is the connective tissue (the most abundant tissue in the body) that holds body structures, such as skin, cartilage, tendon and bone, together. Vitamin C actually stabilises the protein component of collagen and thereby significantly adds to its structure. Strong and resilient connective tissue is important for overall health and wellbeing, as it enables the body to fight bacteria and other microbes, and therefore vitamin C is beneficial to the immune system. Additionally, vitamin C is an antioxidant. Antioxidants remove or neutralise damaging free radicals that are produced by the body through oxidation. Vitamin C is also essential for the health of gums and blood vessels.

Eating food high in iron does not necessarily guarantee adequate iron absorption.

FIGURE 4.14 Fruit is a source of vitamin C.

Vitamin C helps with the transport and absorption of iron in the small intestine. This is particularly the case for non-haem iron. When vitamin C binds to the iron, it increases the stability of the compound and the solubility of it in the bloodstream, making it easier to transport.

Food sources of vitamin C

Vitamin C is found in citrus fruits and strawberries, tomatoes and red capsicum, broccoli and other cruciferous vegetables such as cabbage and brussel sprouts. Most other fruits and vegetables contain some vitamin C.

Water-soluble vitamins: B-group vitamins

B-group vitamins include a range of substances that, while chemically different, often work together to perform important functions. This includes the metabolism of carbohydrates, proteins and fats for energy production, the enhancement of immune and nervous system functions, and the promotion of cell growth and division. B-group vitamins are often found in the same food sources as carbohydrates such as bread and cereals, and fruits and vegetables. The B-group vitamins that play an essential role in energy production include vitamin B1 (thiamine), vitamin B2 (riboflavin), vitamin B3 (niacin), vitamin B6 (pyridoxine), vitamin B9 (folic acid – folate) and vitamin B12 (cobalamin).

Vitamin B1 – thiamine

One of the primary roles of thiamine is in the conversion of carbohydrates to glucose in order to enable energy production. It is referred to as a coenzyme because of this role. Coenzymes are organic compounds that work in conjunction with enzymes to accomplish metabolic functions. Often a coenzyme binds to an enzyme and acts as the catalyst that allows the enzyme to complete its task. Sometimes coenzymes exist freely, but still play a part in the chemical reaction caused by the enzyme.

ACTIVITY 4.4: NUTRIENTS AND THEIR FOOD SOURCES

1 Explain the terms 'vitamins' and 'minerals'.
2 Identify the nutrients that an individual can obtain from eating a selection of fruits, vegetables, legumes and nuts, such as those shown in Figure 4.15.
3 Describe the function of vitamin D in the body.
4 Outline the role that ultraviolet rays have in the production of vitamin D. Compare this to the absorption of vitamin D from food sources.
5 Outline the difference between iron found in animal foods and iron found in plant foods.
6 Identify the nutrients in which a vegetarian could be deficient without well-planned meals. Justify your response.
7 Identify the food sources of the nutrients identified in Question 6 that are suitable for vegetarians.
8 Identify the foods you would include if you were planning a dinner party for a group of young people in order to ensure your guests were receiving nutrients needed for general health and wellbeing. Justify your choices.

FIGURE 4.15 A healthy diet includes a selection of fruits, vegetables, legumes and nuts.

Because thiamine has a direct correlation with the production of energy, it is essential for the growth of cells and is necessary for normal muscle development as well as the maintenance of internal organs.

Food sources of thiamine

Wholegrains, soybeans, peas, liver, kidney, lean cuts of pork, legumes, seeds and nuts.

Vitamin B2 – riboflavin

Riboflavin works with the other B-group vitamins in carbohydrate, fat and protein metabolism, and plays an essential role in energy production. Riboflavin is also important for the growth of cells, which requires energy.

Food sources of riboflavin

Natural sources of riboflavin include eggs, milk, liver, kidney and green leafy vegetables. Breads and cereals are often fortified with riboflavin.

Vitamin B3 – niacin

Niacin is a B-group vitamin that helps with the creation of some coenzymes and is important in energy transfer. It plays an active role in the metabolism of carbohydrates, proteins and fats into energy.

Food sources of niacin

Lean meats, liver, poultry, milk, canned salmon and green leafy vegetables.

Vitamin B6 – pyridoxine

Pyridoxine is a versatile vitamin of the B-group. It aids in protein and fat metabolism, especially in the metabolism of essential fatty acids. Pyridoxine activates many enzymes and enzyme systems.

Food sources of pyridoxine

Chicken, fish, pork, liver, kidney, wholegrain cereals, nuts and legumes.

Vitamin B9: folic acid (also referred to as folate) and vitamin B12: cobalamin

Folate is required for cell division and formation, and is necessary for the synthesis of protein, which is then used for connective tissue development. Vitamin B12 is vital to the division of cells, and is integral to the production of myelin, a type of protein used for nerve tissue. Folate, in conjunction with vitamin B12, is essential for the formation of DNA, which is used in the development of every cell in the body, including the formation of mature red blood cells. The formation process of red blood cells is very different from that of other cells in the body because they do not contain their own DNA or nucleus, and therefore cannot divide for duplication. However, DNA is still required in their formation. Folate and B12 combine and play a two-part role in the production of these cells, as they are involved in DNA synthesis as well as the production of haemoglobin. They are also involved in the production of white blood cells because of their role in DNA synthesis. Folate is particularly important during pregnancy in order to help prevent the possibility of a disease known as spina bifida affecting the foetus. Vitamin B12 is also necessary for proper utilisation of fats, carbohydrates and proteins for cell growth through involvement in metabolic and enzymatic processes.

Food sources of folic acid (folate)

Folate is found in liver, yeast, dark-green leafy vegetables, legumes and some fruits.

Food sources of cobalamin

Cobalamin is found in liver, kidneys, yoghurt, milk, eggs, fish, clams, oysters, salmon and sardines.

ACTIVITY 4.5: ENERGY NUTRIENTS AND THEIR FOOD SOURCES

Find a breakfast cereal box for a cereal similar to the ones shown in Figure 4.16. Examine the box's nutritional panel, then answer the following questions.

FIGURE 4.16 Breakfast cereals

1. Describe the two major types of energy-providing carbohydrates that can be found in food.
2. Identify the ingredients in the cereal that would provide each of the major types of energy-providing carbohydrates you discussed in Question 1.
3. Outline the different roles played by each of these carbohydrates in the release of energy. Comment on which type of carbohydrate would be more beneficial for breakfast.
4. Explain the role of B-group vitamins in energy production.
5. Identify the B-group vitamins that can be found in the breakfast cereal you selected.
6. Breakfast cereals are often fortified with B-group vitamins (i.e. the vitamins are added after the main ingredients have been processed). Discuss why this is the case.
7. Identify whether there are any other nutrients that are fortified in your breakfast cereal. If so, explain why these may have been added to the cereal.
8. List any other energy nutrients found in your breakfast cereal. Explain a key function of each nutrient.

AOS 2

4.4 CAUSES OF NUTRITIONAL IMBALANCE

Nutritionists and other health professionals have long recognised the importance of establishing appropriate nutrition practices for each stage of the lifespan, this section of the chapter will consider the importance of key nutrients and the impact of nutritional imbalances during youth. Youth food choices are influenced by a range of factors, including but not limited to cultural traditions, family structure, lifestyle (school, work and leisure commitments), meal patterns, health issues (e.g. allergies and intolerances) and food availability. Appropriate eating patterns and choices adopted during this time will also set the stage for lifelong habits that may mean the difference between high levels of health and wellbeing, and disease in later years.

hypertension: (Also called 'high blood pressure'.) Persistently elevated blood pressure.

When nutrients are consumed in the quantity and variety required by an individual during the youth stage of the lifespan, the benefits can be immediate as well as long term. For example, when an appropriate amount of calcium is taken in during youth, the risk of suffering from osteoporosis during older adulthood (long term) is greatly reduced. Other benefits of an adequate food and nutrient supply to the body during this stage include:

- energy to be physically active
- appropriate muscle growth and tone
- absence of excess fat on the body
- optimal appearance, including clear skin and eyes, and healthy hair, nails and teeth
- fewer diseases related to the immune system; having a healthy and strong immune system enables young people to feel energetic and helps them to fight disease
- prevention of nutritional deficiencies
- prevention of specific health and wellbeing conditions related to nutritional imbalances during youth, such as obesity, insulin resistance, dental caries and anaemia
- prevention of chronic conditions related to nutritional imbalance during adulthood, such as obesity, type 2 diabetes mellitus, CVD, **hypertension**, colorectal cancer and osteoporosis.

Common food intake behaviours causing nutritional imbalances among youth

Unhealthy snacking choices

Healthy eating is fundamental to general health and wellbeing during youth, and in recent years there has been an increasing awareness of the relationship between youth nutrition and the development of diseases in adulthood. Young people need to provide their bodies with adequate nutrients in order to grow to their full potential, and complete daily tasks and physical activities for their continued wellbeing.

DISCUSS

Discuss the types of snacks you regularly choose to eat and what nutritional value you think they have.

FIGURE 4.17 Many young people eat unhealthy snacks.

Healthy snacks also form an integral part of meal patterns for youth. Fast-growing, active youth have immense energy needs. Even though their regular meals can be substantial, young people still may need snacks to supply energy between meals, and to meet their daily nutrient needs and maintain a good level of wellbeing.

Unhealthy choices when snacking – for example, by making energy-dense and nutrient-poor choices – can have both short- and long-term consequences for the individual. Short-term consequences can include difficulty maintaining an appropriate body weight, low energy levels, anaemia, dental caries and possibly even mood changes due to the consumption of caffeine and energy drinks. Long-term consequences may present themselves later in life, and can include serious disease.

FIGURE 4.18 Unhealthy snacks are widely available.

DISCUSS

1 Describe the main places you get your snacks from, and where you usually consume your snacks.
2 Outline snacks that have a high nutritional value. It may be a good idea to include these snacks in your diet in the future.

Skipping meals, particularly breakfast

Despite their nutritional requirements, there are many young people who skip meals for various reasons, including irregular schedules, convenience, work and social activities, lack of time, lack of hunger and the desire to lose weight. This practice has undesirable health and wellbeing consequences. Young people who skip meals, for whatever reason, have a poorer nutritional intake. Commonly, the low intake of nutrients results in deficiencies of vitamin A, folate, fibre, iron and calcium. These deficiencies are prevalent among young people, increasing the person's risk of suffering from osteoporosis later in life.

To meet nutritional needs, young people should eat at least three healthy meals a day, including breakfast. The foods chosen for consumption by youth should be rich in a variety of nutrients. Studies show that food choices affect wellbeing. It has been found that if a young person eats breakfast, they may experience higher levels of concentration and comprehension in school and be better equipped to participate in sports, contributing to a higher level of health and wellbeing.

Other effects of skipping meals include the restriction of energy intake, which may impact metabolic rate. There is also evidence that a low nutritional intake will impact not only physical health and wellbeing, but also mental health and wellbeing.

FIGURE 4.19 Drinking coffee for breakfast is not ideal.

EXTENSION QUESTION 4.4

Breakfast is often said to be the most important meal of the day because it 'breaks the fast' that occurred while a person was sleeping. Consider why people who skip breakfast tend to have a poorer nutritional intake, even if they eat a third meal at another time of the day.

ACTIVITY 4.6: SKIPPING BREAKFAST

Australian teens commonly skip breakfast
***SBS News*, 13 September 2017**

New research shows Australian teens, in particular girls, commonly skip breakfast.

There are concerns too many Australian teenagers aren't eating the so-called most important meal of the day, breakfast.

New research, published in the *Australian and New Zealand Journal of Public Health*, has found up to one in five adolescents commonly skip breakfast.

While Australian children and adolescents aren't going without breakfast every day, 'occasional skipping is more common', the authors wrote.

Natasha Murray, spokesperson for the Dietitians Association of Australia, says the results are worrying because eating breakfast is a great way to get in extra vitamins and minerals such as calcium.

'There's research out there that says people who routinely skip breakfast have lower intakes of food groups including dairy, and as you know we recommend two to three serving per day', said Ms Murray.

'Breakfast is also a great source of vitamin B, folate and fibre', she added.

Ms Murray says it's important that good breakfast eating habits are established early.

'We know habits formed in childhood and adolescence are highly likely to carry on into adulthood', she said.

Analysis of the 2011–2012 National Nutrition and Physical Activity survey found 13.2 per cent of boys and 18.6 per cent of girls were breakfast skippers.

The unhealthy habit increased with age, from five per cent of boys and 11 per cent of girls aged 2–3 years, to 25 per cent of boys and 36 per cent of girls aged 14–17 years.

Of those who did report eating breakfast, 36 out of the nearly 1600 surveyed only consumed a beverage for breakfast on one day.

The research also showed that kids who did habitually skip breakfast, most of them had a parent or primary caregiver who also skipped.

Ms Murray says for people who don't like cereal, a wholegrain toast topped with avocado or eggs is a good idea, as is a fruit-based smoothie.

'You can always blitz them up the night before and put them in the fridge ready to go in a take-away cup', Ms Murray said.

1 Identify the percentage of 14 to 17-year-old boys and girls who are 'breakfast skippers'. Discuss reasons for the differences in the percentage of girls and boys who skip breakfast.

2 With specific reference to health and wellbeing, explain the consequences of skipping breakfast for young people.

3 Other than dairy, identify a food group that may be under-consumed by those who skip breakfast. Explain the consequences (both long- and short-term) that under-consumption of this food group has on health and wellbeing.

4 Other than cereals, and eggs or avocado on wholegrain toast, provide a recommendation for breakfast and identify the key nutrients that it contains.

5 For the breakfast you recommended in Question 4, explain the protective role that consumption of this meal could play in both long- and short-term health and wellbeing.

Eating outside the home regularly – convenience meals

Good-quality, nutrient-dense foods are essential for growing youth. Unfortunately, some young people do not have a balanced diet due to the frequent consumption of unhealthy fast or takeaway foods that fail to meet the recommended dietary requirements for energy and nutrient intake. Youth are more prone to eating fast food than children and adults because it is convenient and often typically part of a social event. For youth, a higher frequency of consumption of fast food meals is associated with eating significantly fewer fruits and vegetables, and drinking less milk and water. Fast or takeaway foods can often be high in saturated fat, salt, sugar and kilojoules (energy dense rather than nutrient dense). These foods can also be low in fibre, vitamins and minerals. Food items that have smaller volumes but large surface areas, such as french fries, can also absorb more fat per portion. This increases the number of kilojoules per portion.

In the long term, regular eating of foods high in energy, salt, sugar and saturated fat can contribute to the risk of heart disease, type 2 diabetes mellitus, hip and joint problems, obesity and high blood pressure.

Inadequate intake of fruits and vegetables, and dairy

Scientific evidence suggests that fruit and vegetable intake helps to protect against cancer, heart disease, high blood pressure, osteoporosis, arthritis, stroke, type 2 diabetes mellitus and obesity. Fruits and vegetables are rich in the minerals and vitamins needed to maintain a healthy body. A benefit of a high intake of fruit and vegetables, combined with a lifestyle that includes regular activity, is the reduction in obesity, which could lead to lower cholesterol and blood pressure levels – both risk factors for CVD.

Many young people do not consume enough different types of vegetables. Fruit consumption by young people is better than vegetable consumption; however, it is still lower than the National Health and Medical Research Council (NHMRC) guidelines of a minimum of four to five serves of different vegetables and two serves of fruits per day. According to the *National Health Survey 2017–18*, 56 per cent of those aged 18–24 consumed the recommended serves of fruit, while only 10 per cent met the vegetable recommendations and approximately 9 per cent met both fruit and vegetable recommendations.

FIGURE 4.20 The consumption of soft drinks in the youth stage of the life span is particularly concerning.

Consuming soft drinks and energy drinks

In Australia, the term 'soft drink' is generally used to refer to carbonated beverages, and more specifically sugar-sweetened carbonated beverages. A soft drink refers to a beverage that does not contain alcohol. Soft drinks contain no vitamins, minerals, protein, fibre or any nutrients other than carbohydrates in the form of sugar. In addition, they also contain preservatives, artificial flavourings and artificial food colourings.

Since they have no nutritional value, the kilojoules they provide are referred to as 'empty kilojoules'. Energy drinks are high-caffeine soft drinks. These caffeine-filled energy drinks usually contain a wide range of other ingredients, with different brands having similar ingredient lists. Other than caffeine, one ingredient all energy drinks have in common is a very high quantity of some form of sugar. Consumption of too much sugar leads to health problems such as dental decay, overweight and obesity, and potentially type 2 diabetes mellitus. Consuming too much sugar can also increase the urinary excretion of essential minerals such as calcium, magnesium, zinc and sodium from the body.

In the latest *National Health Survey* it was reported that approximately 62 per cent of youth aged 18–24 consumed sugar sweetened drinks once a week and approximately 18 per cent consumed diet soft drinks once a week. The latest research by the Cancer Council of Australia has also reported that over 150 000 (17 per cent of male and 10 per cent of female) high school students drink at least one litre of soft drink a week and that in a year this equates to approximately 5.2 kilograms of extra sugar.

4.5 SHORT-TERM CONSEQUENCES OF NUTRITIONAL IMBALANCES ON HEALTH AND WELLBEING

For most young people, a healthy diet is well balanced and contains a variety of nutritious foods. While the occasional consumption of energy-dense and low-nutrient quality food may not be problematic, the consumption of an unbalanced diet even for short periods can have short-term negative consequences on health.

Health conditions of major concern that occur during youth include overweight and/or obesity, insulin resistance, anaemia and dental caries.

Overweight and/or obesity

Evidence is emerging to suggest that the prevalence of overweight and obesity is increasing rapidly among youth. In Australia, one third of young people are overweight or obese, and this upward trend is continuing.

The terms 'overweight' and 'obesity' refer to the presence of excess fat tissue in the body. The most common means of determining whether a person is overweight or obese is the body mass index (BMI). An adult is considered to be overweight if their BMI is between 25 and 29.9 and obese if their BMI is over 30 (see Figure 4.21). Obesity is also broken down into class I obesity (overweight), class II obesity (obese), and class III obesity (extreme obesity).

BMI can be used to determine whether an individual is of a healthy weight. BMI is a weight-to-height ratio that can measure the amount of body fat with the use of a chart. The BMI has been used extensively for many years to assess overweight and obesity in adults. However, the NHMRC now recommends that the BMI can also be used for children and adolescents. BMI is calculated using weight and height measurements. This measurement is then compared with the weight relative to height with other children of the same age and gender, using the BMI percentile charts.

Nutritional imbalances causing overweight and/or obesity

A high fat intake of any type of fat will increase the presence of adipose tissue in the body. If the intake is prolonged, then storage of fat will continue to increase, with little of the stored fat being used as an energy source. This is particularly the case if a high-fat diet is combined with a high-GI carbohydrate diet. There is also convincing evidence that a high intake of energy-dense foods, such as many fast foods, promotes weight gain. Energy-dense items tend to be high in fat (e.g. fried foods), sugars (e.g. soft drink), starch (e.g. savoury biscuits) or a combination of these energy nutrients. These foods often tend to be poor in overall nutrient content, as they have low amounts of vitamins, minerals (micronutrient poor) and fibre. A lower consumption of energy-dense (high-fat, high-sugar and/or high-starch) foods and energy-dense (high-sugar) drinks contributes to a reduction in total energy intake.

A high intake of sugary or starchy foods promotes the use of carbohydrates as the only energy source used by the body. This then leads to an increase in fat storage in the body in the form of adipose tissue. These foods also cause higher day-long insulin levels that can induce severe insulin resistance, leading to type 2 diabetes mellitus over time.

Low-starch and low-sugar foods such as vegetables and wholegrains are a potentially protective factor against weight gain, as they take longer to release glucose into the bloodstream. This allows the body to use fat as an energy source (since the body does not have an instant source of energy available to it in the form of glucose). An increase in the use of fat as a fuel source will decrease the overall amount of body fat. These foods tend to be more nutritious, providing a source of vitamins and minerals as well as fibre, and therefore a low intake of fruits and vegetables can be a risk factor for overweight and obesity. It is important to consider that diets that are proportionally low in fat are likely to be proportionally higher in carbohydrates.

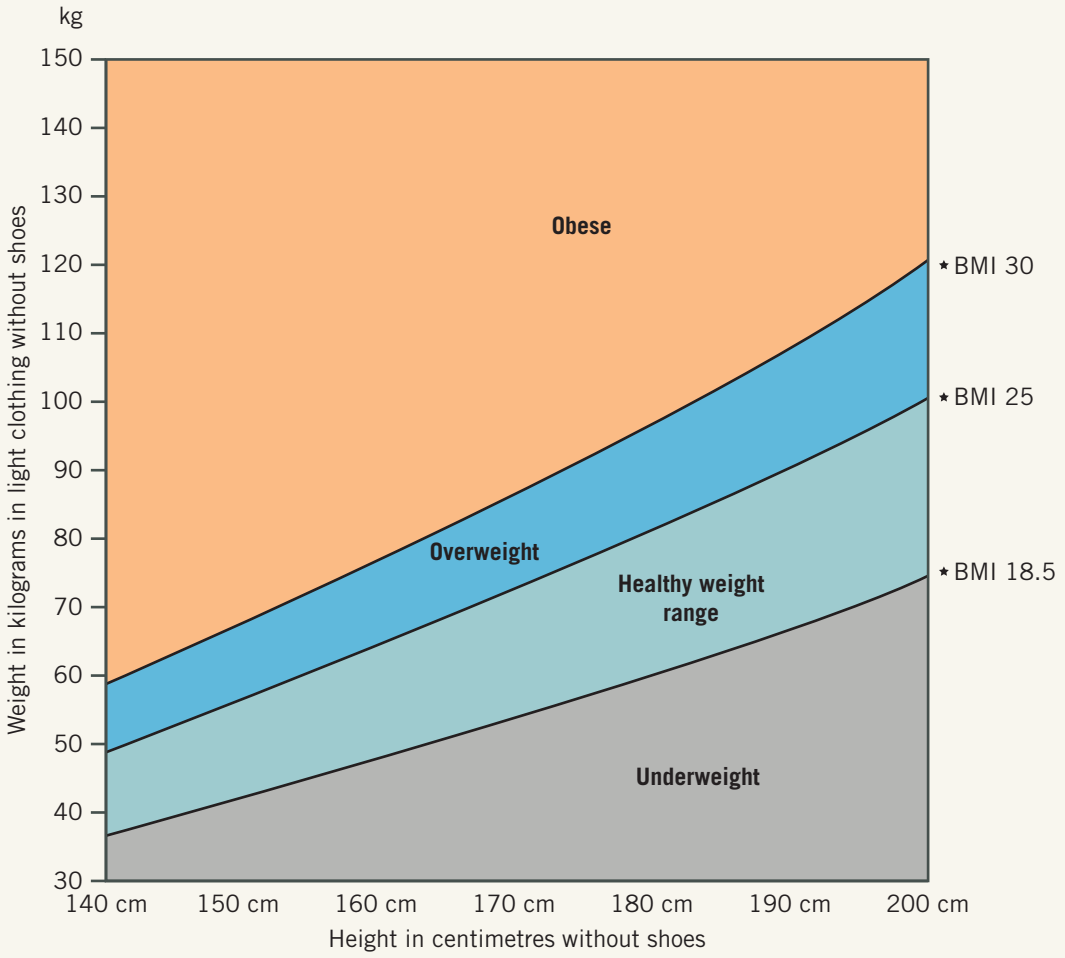


FIGURE 4.21 The body mass index chart for adults.

A low fibre intake is a risk for overweight and/or obesity. Fibre may assist with weight control, as the body will experience a feeling of satiety (fullness) after a meal rich in fibre. High-fibre foods tend to make the stomach feel full during the meal, leading to a decrease in the quantity of food consumed. High-fibre foods are almost invariably low in fat, so a high-fibre diet will usually be a low-fat diet. Wholegrain cereals, fruits and vegetables are the preferred sources of fibre.

insulin resistance: A condition in which the hormone insulin becomes less effective at managing sugar levels in the blood.

type 2 diabetes mellitus: A disorder in which a person's body produces insulin in order to metabolise blood sugar, but either does not produce enough or does not use it effectively.

Insulin resistance

Insulin resistance is a condition in which the hormone insulin becomes less effective at managing sugar levels in the blood. Normally, food is absorbed into the bloodstream in the form of sugars such as glucose and other basic substances. The increase in sugar in the bloodstream signals the pancreas (an organ located behind the stomach) to increase the secretion of a hormone called insulin. Insulin acts to open the doors of the cells, taking glucose out of the bloodstream and putting it into the cells for energy. When cells don't respond enough to insulin, blood glucose levels rise as a result. If a young person has insulin resistance, then the blood glucose levels are above the normal range but are not high enough for the diagnosis of **type 2 diabetes mellitus**. Blood glucose levels normally rise after eating a meal then gradually fall as the meal is digested. However, in people with insulin resistance, these levels remain elevated. Obesity has been found to be strongly linked to the occurrence of insulin resistance.

ACTIVITY 4.7: NUTRITIONAL IMBALANCE AND OBESITY

FIGURE 4.22 LiveLighter®

Visit the LiveLighter® website and complete the following tasks. To answer Question 1, you will need a friend or family member who is over the age of 25.

1 In 'The Facts' section of the website, go to 'About sugary drinks'. Ask your friend or family member (who is over the age of 25) to use the sugary drinks calculator to work out:
   - **a** how much sugar your participant consumes each week from drinks
   - **b** how many teaspoons of sugar this equates to (1 tsp sugar = 4 g)
   - **c** how much exercise it takes each week to 'burn off' the sugar your participant consumes in sugary drinks.

2 Go to the 'Top Tips' section of the website. Choose two of the options that relate to nutritional imbalances that lead to overweight and obesity. Summarise the information provided for both nutritional imbalances.

3 Go to the 'Recipes' section of the website. Choose two recipes and identify the foods and nutrients in the recipes that are associated with the prevention of obesity-related health conditions.

4 Under 'The Facts' section of the website, go to 'About toxic fat'. Summarise what is meant by toxic fat and the risks associated with it.

Nutritional imbalances causing insulin resistance

Any nutritional imbalances that are a risk factor for obesity will also be a risk factor for insulin resistance, as obesity is the biggest risk factor for this condition.

Some research suggests that the other main risk factor for insulin resistance is a high and regular intake of carbohydrate foods that have high simple sugar content or are very starchy. Many processed foods fit into this category. Blood glucose levels increase rapidly when simple sugars and starchy foods such as lollies and chips, soft drinks or cakes, muffins and biscuits are eaten. This requires the pancreas to produce a large amount of insulin in response, and the large insulin response will cause a rapid drop in blood glucose levels.

Some research also suggests that the high blood glucose levels and release of insulin impact on insulin sensitivity, thus increasing insulin resistance. Additionally, rapid change in blood glucose levels can lead to increased feelings of hunger and the desire for more sugary food to quickly restore blood glucose levels. This can also lead to over-eating and a higher energy intake, and eventually weight gain.

Anaemia

Anaemia refers to an inadequate level of red blood cells or an inadequate level of haemoglobin in the body. Red blood cells are manufactured in the bone marrow and contain a protein called haemoglobin. Oxygen binds to haemoglobin and is then transported to the body's cells in order for them to perform various functions, including respiration (energy release). When red blood cells or haemoglobin levels are low, the result is greater difficulty transporting oxygen around the body. The resulting symptoms can include pale skin, fatigue, breathlessness, frequent headaches and a sudden drop in blood pressure.

The bone marrow relies on adequate dietary iron and particular vitamins such as folate to manufacture haemoglobin. Iron is a major constituent of haemoglobin. Two main types of anaemia include iron-deficiency anaemia and folate-deficiency anaemia.

Iron-deficiency anaemia is the most common form of anaemia worldwide. Young people are most at risk of this deficiency because of the vast increase in demands for iron by the body due to the rapid growth and increase in number of red blood cells required. Blood volume increases dramatically at this stage of the lifespan. Menstruating females are also at added risk due to monthly blood loss during menstruation.

Nutritional imbalances causing anaemia

Inadequate intakes of iron and folate are both risk factors for this disease. Inadequate iron intake causes the body to draw on the small amount of iron stored in the liver and once depleted the red blood cells will not be able to carry oxygen around the body. Good sources of iron include lean meat, green leafy vegetables and wholegrain cereals.

Vitamin C intake is also important in the prevention of iron-deficiency anaemia, as it aids the absorption of iron into the bloodstream. An inadequate intake of fruits and vegetables can lead to a lower intake of vitamin C, as it is not found in very high quantities in other food groups such as dairy products or meats.

Folate is only able to be stored for a short period of time in the body, and therefore a deficiency can occur quite quickly. Inadequate folate intake also results in an inability to make red blood cells in the bone marrow. Good sources of folate include beans, oatmeal, mushrooms, broccoli, asparagus, beef and liver. Many foods such as breakfast cereals are fortified with folate. Skipping meals, particularly breakfast, is an added risk for folate deficiency given that folate is not stored by the body for very long.

Dental caries

The health of our teeth depends on dietary habits during childhood and youth because the foods we eat affect teeth from the point of their formation as well as after their growth is complete. Good nutrition, good eating habits and daily dental care need to be established early in life to reduce the incidence of decay. Food choices have a major impact on the prevalence of dental caries in young people.

Dental caries, also called dental cavities or tooth decay, is when the outer surface (enamel) of a tooth is destroyed through the action of bacteria that live in plaque. Sugar and starch from food particles in the mouth stick to the tooth enamel. Bacteria in this plaque produce acid, which eventually leads to the deterioration and destruction of the tooth enamel.

FIGURE 4.23 Dental caries

Tooth decay requires the simultaneous presence of three factors: plaque bacteria, sugar and a vulnerable tooth surface. Tooth decay is a common health problem and although anyone can have a problem with tooth decay, youth are at high risk. This is because of the high intake of starch and sugar found in processed and takeaway foods and soft drinks, which tend to be consumed in higher amounts by young people than at other stages of the lifespan.

Nutritional imbalances causing dental caries

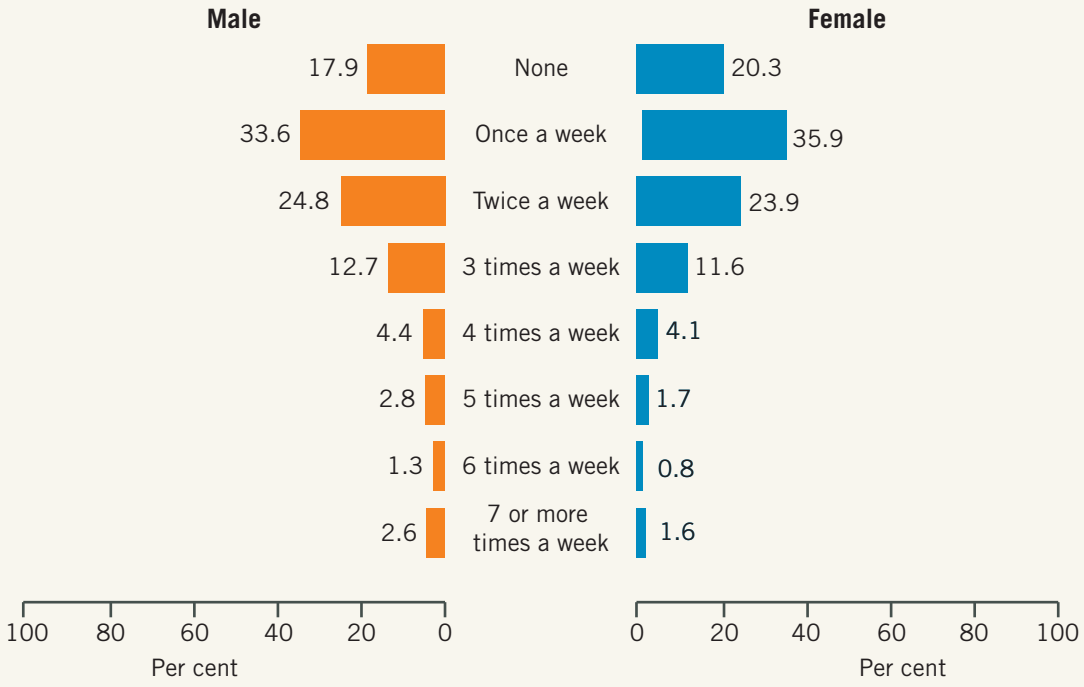
Foods high in sugar and starch – especially when eaten between meals – increase the risk of cavities. The bacteria in the mouth use sugar and starch to produce the acid that destroys the enamel. The damage increases with more frequent eating and longer periods of eating. Of particular concern these days is the high consumption of soft drink and the effect it is having on the prevalence of tooth decay. Soft drinks are high in sugar, with up to 11 teaspoons of sugar per serving in many brands. Most soft drinks (including diet soft drinks) also contain phosphoric acid and citric acid. These acids are used to preserve the sweetness of the drink. Extensive exposure of teeth to acids can erode tooth enamel, making it thinner and putting it at greater risk of decay.

FIGURE 4.24 Sugary foods contribute to dental caries.

Additionally, if a person's diet is low in other nutrients, such as vitamin A, it may be harder for the tissues of their mouth to resist infection. This may be a contributing factor to periodontal (gum) disease, the main cause of tooth loss.

A low intake of calcium can lead to an increase in dental caries, as calcium is a main constituent of the parts of teeth that gives them their hardness. A low intake of dairy foods is therefore a risk factor because of their high calcium content. It has been found that youth aged 16 and over have a lower than recommended intake of dairy foods, particularly milk. The inadequate intake is also higher in females than males. Dairy foods are good at promoting saliva production, and increased saliva flow helps to wash away acids and thus prevent cavities. Water is also beneficial for rinsing food particles from the mouth.

ACTIVITY 4.8: SHORT-TERM CONSEQUENCES OF NUTRITIONAL IMBALANCE



SOURCE: NSW Health Survey Program, 2011

FIGURE 4.25 Frequency of eating fast food, students aged 12 to 17 years, by sex

1 Identify a trend that is evident in the data presented in Figure 4.25.
2 Suggest why the consumption of fast food is so high among young people.
3 Provide an example of how regularly consuming fast food can influence health and wellbeing.
4 Regularly consuming fast food is a risk factor for a number of different health conditions. Identify a nutritional imbalance that may result from consuming fast food. Discuss how this could be a risk factor for one of the short-term consequences discussed in Section 4.5.

4.6 LONG-TERM CONSEQUENCES OF NUTRITIONAL IMBALANCES ON HEALTH

Establishing healthy eating habits early in life is incredibly important, as childhood and youth eating habits track into adulthood and changing adult dietary behaviour is difficult. Evidence suggests that unhealthy food intake behaviours during childhood and youth can affect the risk of developing certain chronic diseases in adulthood as the impact of accumulated nutritional imbalances created then becomes evident. For example, childhood obesity is associated with increased mortality from CVD in adulthood, independent of adult weight. Chronic conditions in adulthood that are of great concern and caused by poor eating habits established earlier in life include obesity, CVD (including hypertension), type 2 diabetes mellitus and osteoporosis.

Adult obesity

Overweight or obesity during youth that continues on into adulthood is associated with a number of health and wellbeing concerns that have a negative impact on an individual. According to the World Health Organization, being overweight is associated with a higher risk of disease, particularly if the body fat is concentrated around the abdomen.

Conditions for which overweight and obesity are risk factors include:

- life-threatening chronic diseases, which lead to disability and death (e.g. CVD, type 2 diabetes mellitus, hypertension, stroke and some cancers)
- non-fatal debilitating conditions, which can reduce the quality of life and are costly in terms of absence from work and use of health resources (e.g. gall bladder disease, respiratory difficulties, infertility and osteoarthritis)
- psychological problems (e.g. depression, low self-esteem).

Nutritional imbalances causing obesity

It has been found that when obesity occurs during youth, there is an increased likelihood of obesity also occurring during adulthood. This is due to a number of reasons, including a change in composition of body tissue (the fat cells to muscle mass ratio changes) as well as the creation of negative behaviours in food choices that are difficult to reverse.

One of the main causes of obesity is poor-quality food intake, specifically taking in more energy than needed to support an individual's daily activity level. One of the primary sources of the extra energy consumption during youth is regular consumption of sweetened beverages (soft drinks and energy drinks) that results in an over-consumption of simple carbohydrates. Numerous studies link consumption of sugary drinks with weight gain and obesity. Drinking these sugar-sweetened beverages also affects the intake of other foods, such as lowering milk consumption, which is a recognised issue for young people in Australia, as well as reducing water consumption.

The other major cause of an energy intake that is higher than required is regular consumption of fast foods that leads to an over-consumption of fats. As young people increasingly grow reliant on energy-dense fast food meals, the risk of obesity increases. Some scientists claim that fast food causes obesity by encouraging the sense of intentional over-eating as the average fast foods have 150 per cent more high-density energy than any traditional meal. Fast foods and many processed foods are high in saturated fat, or trans fats. Trans fats are human-made fats, referred to as 'partially hydrogenated'. Eating fast foods or processed foods that contain trans fats increases weight gain and abdominal fat. Over-consumption of these foods will also decrease fibre intake, which is another risk factor for obesity.

Another food behaviour that starts in youth and continues into adulthood for many people is increasing portion sizes of foods high in carbohydrates (e.g. starchy foods in main meals such as pasta, rice and vegetables such as potatoes) and fats, which also contributes to over-eating and over-consumption of energy. To a certain degree, having a larger portion size than is needed becomes a habit that is difficult to break.

TABLE 4.3 Dietary imbalances during youth and associated conditions later in life

DIETARY IMBALANCE	DISEASE WITH WHICH THE IMBALANCE IS LINKED
Excess energy (fat, carbohydrate and protein) intake	Type 2 diabetes mellitus, cardiovascular disease, colorectal cancer, obesity
Increased saturated fat and trans fats intake	Cardiovascular disease – heart diseases and stroke, obesity, type 2 diabetes mellitus, colorectal cancer
Excess sodium intake	Cardiovascular disease – hypertension, heart disease and stroke, osteoporosis
Decreased fibre intake	Colorectal cancer, type 2 diabetes mellitus, obesity, cardiovascular disease
Decreased fruit and vegetable intake	Colorectal cancer, type 2 diabetes mellitus, obesity, cardiovascular disease

FIGURE 4.26 The consumption of fast food increases risk of obesity.

AOS 2

Cardiovascular disease

Cardiovascular disease (CVD) describes diseases of the heart and blood vessels and includes:

- coronary heart disease
- stroke
- heart failure
- hypertension (high blood pressure).

These are caused mainly by a damaged blood supply to the heart, brain and legs, and share a number of risk factors. CVD can result in a range of conditions that include angina (heart pain), high blood pressure and blood vessel damage. The most common cause of CVD is the gradual blockage of blood vessels by fatty or fibrous material. Fatty material (plaque) gradually builds up on the blood vessel walls, narrowing the arteries. This eventually prevents oxygen from being transported around the body. As the deposits build up, the arteries become less elastic. This condition is often referred to as hardening of the arteries and is known as atherosclerosis. Any artery in the body can be affected. However, the arteries to the heart, brain or kidneys, or those to the eyes and legs, are most commonly affected.

High blood pressure is also known as hypertension. Blood pressure refers to the amount of pressure that is placed on artery walls when the heart pumps blood through them. Hypertension is an indication that blood is being pumped through the arteries harder than is normally considered healthy.

Nutritional imbalances causing cardiovascular disease

Many of the risk factors for CVD involve food consumption. Paying attention to what is eaten is one of the most important preventative measures for this disease. Atherosclerosis can partly be prevented by minimising the following major risks: high saturated and trans fats intake; diabetes; and overweight and obesity. The minimisation of these risk factors needs to start during childhood and youth. Foods containing saturated fats include meats (particularly those with visible fat), cheese, butter and eggs. Foods containing trans fats include shortening (hardened vegetable oil used for making commercial cakes, biscuits and pastry items),

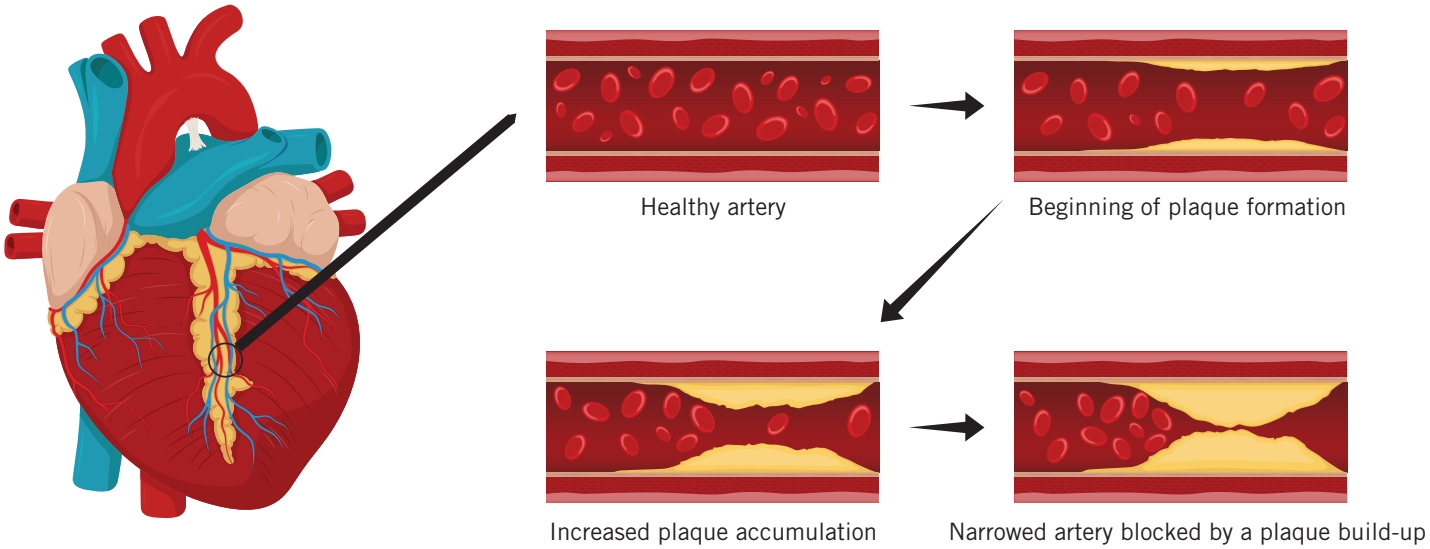


FIGURE 4.27 The narrowing of the arteries due to plaque build-up

margarine, deep-fried foods and processed snack foods. The consumption of these during youth increases the risk of CVD, as trans fats tend to increase the deposition of plaque on artery walls, thus increasing the risk of a heart attack.

A diet regularly high in sodium and low in potassium is also a risk factor for high blood pressure, which itself is a risk factor for CVD. Youth food intake tends to increasingly escalate in its sodium content due to the increase in consumption of processed foods during this lifespan stage. Some processed foods, such as snack chips, pizza and French fries, are obviously high in salt. Others that commonly are eaten, such as breakfast cereals, sauces and salad dressings, soft drinks and even some baked goods such as bread, are unexpectedly high in sodium; young people consume them without realising their contribution to their total sodium intake.

Other food-related risk factors for hypertension include a diet high in saturated fat and the consumption of a large quantity of alcohol on a regular basis.

Nutrient-rich foods, such as fruits, vegetables, wholegrains, legumes and other lean protein sources, may decrease the risk of CVD.

Type 2 diabetes mellitus

Diabetes mellitus is a disease that affects the way the body uses glucose, the main type of sugar in the blood. When food is eaten, it is broken down into its smallest units, which in the case of carbohydrates is glucose. Glucose is then absorbed into the bloodstream from the gastrointestinal tract. The glucose level in the blood rises after a meal and triggers the pancreas to make the hormone insulin and release it into the bloodstream. For people with diabetes, the body either can't make or can't respond to insulin effectively. Insulin works like a key that opens a lock on the surface of cells to allow glucose to be taken into the cell for use in energy production. Without insulin, glucose cannot get into the cells and so it stays in the bloodstream. As a result, the level of sugar in the blood remains higher than normal.

FIGURE 4.28 Having excess body fat around the waist is a risk for type 2 diabetes mellitus.

High blood sugar levels are a problem because they can cause a number of symptoms and health problems, and can eventually lead to diabetes.

Diabetes can be classified broadly into three main forms: type 1 diabetes mellitus, type 2 diabetes mellitus and gestational diabetes. Each type has its own particular characteristics and related risk factors. While the management of each type of diabetes requires management of the disease through dietary adjustments, type 2 diabetes mellitus is the one that is considered to be a diet-related disease, and its increasing prevalence in Australia is of growing concern.

Most experts believe the increasing incidence of type 2 diabetes mellitus is closely linked with higher levels of excess body fat, in particular around the waist and upper body. This is because in type 2 diabetes mellitus the body may produce enough insulin, but its action may be blocked because of excess fat around the cells. The body compensates for the resistance to the action of insulin by producing even more insulin but eventually cannot make enough to keep the balance right. Blood glucose levels therefore remain high, which can cause damage to many parts of the body, known as diabetes complications.

Nutritional imbalances causing type 2 diabetes mellitus

There are two main risk factors for diabetes that have a relationship with food intake: insulin resistance and obesity. The nutritional imbalances that cause these conditions, as discussed previously, are also relevant here. More than 80 per cent of people with type 2 diabetes mellitus are overweight or obese. Although the types of food you eat do not directly cause diabetes, what is chosen to be eaten is directly related to maintaining a healthy body weight and the body being able to regulate and use insulin effectively. If a young person's food intake is consistently high in energy and unhealthy nutrients are regularly over-consumed (sugar, saturated fat and trans fats), their food intake could be contributing to their risk of developing diabetes.

Regular consumption of high-carbohydrate foods – starchy foods that contain limited amounts of other nutrients such as fibre and protein – has a direct impact on the blood glucose level and over-consumption can lead to insulin resistance (often referred to as pre-diabetes) and, in the long term, type 2 diabetes mellitus. Eating a consistent amount of carbohydrates at each meal can help to control blood glucose levels, and choosing to eat higher amounts of more complex carbohydrate foods such as vegetables, legumes, fruit and wholegrain cereals will reduce the risk of type 2 diabetes mellitus.

Colorectal cancer

The colon and rectum are the parts of the body's digestive system that remove nutrients from food and store waste until it passes out of the body. The colon is the large intestine. Cancer that begins in the colon is called colon cancer and cancer that begins in the rectum is called rectal cancer. Cancers affecting either or both of these parts of the digestive system are referred to as colorectal cancer. Cancer is the abnormal growth of cells. Normally, cells grow and divide to produce cells as they are needed by the body. When cells keep dividing even though the body does not need them, they form a mass of extra cells called a tumour.

Colorectal cancer is strongly linked to a lack of fibre in the diet. Fibre is a type of carbohydrate that the body does not digest. There are two main types of fibre: soluble and insoluble. Both types of fibre are beneficial to the body, and an individual needs to consume a combination of both each day to maintain health and particularly to maintain healthy bowels.

Nutritional imbalances causing colorectal cancer

A long-term lack of fibre in the diet is the biggest risk for colorectal cancer, although a high saturated fat intake is also considered to be a risk factor. Skipping any meals throughout the day will usually result in a lower than recommended fibre intake. A low intake of vegetables and fruit also causes a low fibre intake – especially soluble fibre. Without enough fibre consumed, it is difficult for the body to remove waste effectively from the large intestine. This is a major contributor to the uncontrolled growth of cells, which can eventually become tumours.

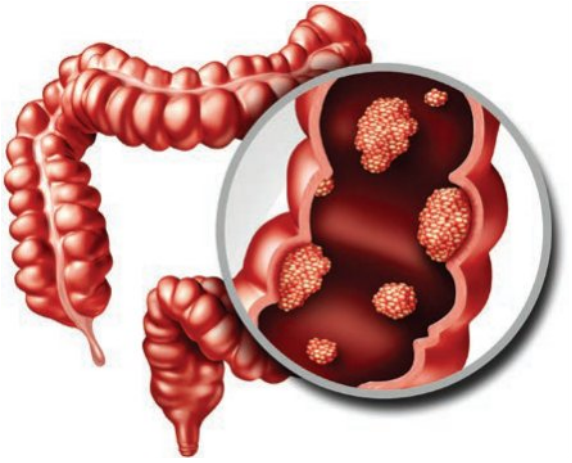


FIGURE 4.29 Colorectal cancer

Osteoporosis

Osteoporosis is a common condition affecting over one million Australians in which bones become fragile and brittle, leading to a higher risk of fractures than in normal bones. Osteoporosis occurs when bones lose minerals, such as calcium, more quickly than the body can replace them, leading to a loss of bone thickness (bone density or mass). Osteoporosis literally means 'porous bones'.

SOURCE: Osteoporosis Australia

The amount of bone tissue in the skeleton is referred to as bone mass. During youth, much more bone is deposited than withdrawn in the body, so the skeleton grows in both size and density. Bone tissue can continue growing until the approximate age of 25–30, at which time it is said that peak bone mass has been attained. Peak bone mass refers to the genetic potential for bone density. Up to 90 per cent of peak bone mass is acquired by age 18 in girls and age 20 in boys, after which the growth slows dramatically. This makes youth the best time to maximise bone health. After the age at which peak bone mass is attained, bone density cannot be increased, but bones may lose density due to a number of factors, thereby increasing the risk of osteoporosis. It is essential that youth reach their peak bone mass potential in order to reduce their risk of osteoporosis.

Nutritional imbalances causing osteoporosis

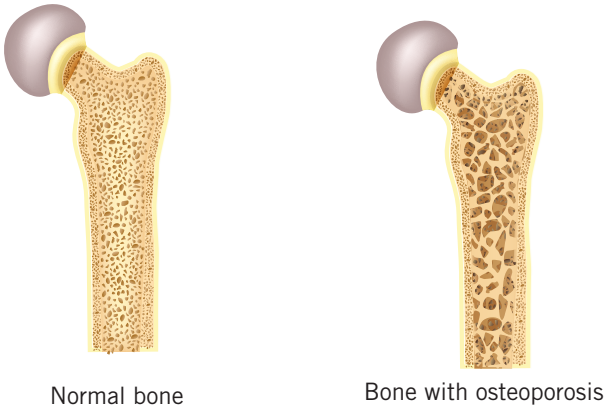
osteoporosis: A musculoskeletal disorder where the bone density thins and weakens, resulting in an increased risk of fractures.

Calcium is an essential nutrient for bone health. Calcium deficiencies in young people can account for a 5–10 per cent difference in peak bone mass, and can increase the risk of hip fracture later in life. A lack of dairy foods in the diet during youth can be a risk factor for osteoporosis later in life because it can lead to nutritional imbalance in relation to calcium intake.

Dairy foods are considered to be a good choice for calcium intake because they also contain a balance of the other bone-building nutrients protein, phosphorus and some vitamin D. If dairy foods are not eaten, these nutrients need to be obtained from a range of other foods daily.

Inadequate protein intake during the time when peak bone mass is being acquired can also be a risk factor for bone health.

A regularly high sodium intake is a risk factor for osteoporosis. When dietary calcium intake is inadequate, too much sodium in the diet can cause calcium to be lost from the body in urine.



Normal bone | Bone with osteoporosis

FIGURE 4.30 Osteoporosis refers to porous bones

TABLE 4.4 Summary of the consequences of nutritional imbalances on short- and long-term health and wellbeing

NUTRITIONAL IMBALANCE	SHORT-TERM IMPACT ON HEALTH AND WELLBEING	LONG-TERM IMPACT ON HEALTH AND WELLBEING
Excess sodium	• Issues with regulation of fluid in the cells • Increased blood volume	• High blood pressure, hypertension • Increased risks of heart failure, stroke and heart attack
Excess saturated or trans fat intake	• Increased blood cholesterol levels • Weight gain • Reduced self-esteem and feelings of self-worth, increased stress	• Overweight and obesity • Increased risk of CVD, type 2 diabetes mellitus, atherosclerosis, arthritis
Excess energy intake	• Weight gain • Reduced self-esteem and feelings of self-worth, increased stress	• Overweight and obesity • Increased risk of type 2 diabetes mellitus, arthritis
Excess simple carbohydrate intake	• Over-eating, feeling of hunger and desire for more sugary foods, weight gain • Increased risk of insulin resistance	• Dental caries and teeth loss • Overweight and obesity • Increased risk of type 2 diabetes mellitus, arthritis
Inadequate fibre intake	• Constipation • Increased blood glucose and blood cholesterol levels • Feeling tired • Over-eating	Increased risk of CVD, colorectal cancer, type 2 diabetes mellitus
Inadequate iron intake	Fatigue and weakness, including difficulty concentrating, completing schoolwork and having the energy needed for daily tasks	Anaemia
Inadequate calcium intake	Impacts to peak bone mass, decreased bone density	Osteoporosis, dental caries
Inadequate vitamin D intake	Low levels of calcium absorption	Osteoporosis
Inadequate iodine intake	• Impacts on metabolic rate and body development • Stunted growth	Goitre (enlarged thyroid gland), hyperthyroidism
Inadequate protein intake	Slow growth, impacts to muscle tissue, reduced energy, feeling tired and lethargic	• Anaemia • Wasting and shrinking of muscle tissue
Inadequate vitamin C intake	Reduced iron absorption	Anaemia
Inadequate vitamin A intake	Reduced immunity	Increase risk of health issues such as dental caries
Inadequate B-group vitamin intake	Lack of energy to socialise or participate in physical activity; difficulty concentrating on tasks such as schoolwork	Slowed growth of muscles and bones

ACTIVITY 4.9: MEDIA ARTICLE

Read the following media article and then respond to the questions that follow.

Making healthy eating cool for school in Orange

By Melanie Pearce, *ABC News*, 14 April 2016

Trained chef Andrew Farley said when he took up the contract for a school canteen in Orange in central-west New South Wales, he was told fruit would never sell.

…

Shaking up the menu

Mr Farley said when he took over the contract the menu consisted of mainly 'pies and sausage rolls and not much else'. He has kept them on the menu but added a range of healthy options including chicken salad wraps, salads, beef burgers, homemade muffins, cold-pressed apple juice, hummus cups and $1 fruit cups. As well he is provided with seasonal produce from the school's agriculture department.

FIGURE 4.31 Andrew Farley in the school canteen he runs in Orange, New South Wales

Mr Farley said he made dishes based on what was in season, for example a chicken salsa verde made with herbs from a small garden just beside the main playground.

He said the changes have been well received and now chicken burgers are his biggest seller and the healthier options are outselling pies and sausage rolls by about three to one.

A personal challenge and a life change

Mr Farley said he came to the canteen from a background as a chef in an upmarket restaurant and it was very different. 'In fine dining, especially the one I was at, there was a very concentrated number of people,' he said. 'Here we're serving upwards of 200 to 300 people a day with a captive audience of potentially 700 customers.'

However, he said he had retained the same personal challenge of making and eating healthy food. 'It's something I do live by myself and I really want to see that and extend that within the school community with everyone.'

Making healthy eating cool

Canobolas Rural Technology High School is not the first school canteen to have changed its menu to include healthier options and Mr Farley said he researched others that had gone before … 'The government's got a big push for health at the moment and one of the key areas they're pushing that is in schools and the canteen being an integral part of food in schools,' Mr Farley said.

He said he believed young people's perceptions about eating were changing and he wanted to make good, fresh, healthy food 'cool'. 'For students and young people everywhere being healthy is something they want to be; it's no longer some weird fad,' Mr Farley said.

'Being able to challenge that and say "yes, you can be healthy and it can be cool" is hugely popular and something I will be focusing on.

'Obviously with anything new and different there's going to be some resistance, but it's gotten to a point now where they are choosing the [new items] over other options.'

…

Staff and students embracing new menu

Mr Farley said the first few weeks at the canteen were a blur of chaos and mayhem but the school community had embraced him.

At lunchtime there is a crowd of students, but also teachers, and Mr Farley said every morning there was a queue of about 20–30 staff lining up.

Teacher, Nicky Nealon, is one of them who described herself as a 'serial offender' at the canteen. 'I have five children at home and I don't have time to make my lunch after organising everyone else, so I'll turn up at the school canteen and say, "Andrew, feed me",' she laughed. Ms Nealon said the variety at the canteen was good and the low prices were essential to ensure the food was affordable for the students.

She said 'word of mouth' was the biggest asset in promoting the new menu.

'So if you have a nice fruit salad and you get a bit of yoghurt and muesli on it and you go, "This is so yummy" and the kids go, "Oh, how much is that?"'

Taia McDonald, 12, bought a $1 fruit cup because she didn't have her lunch today. She said she loved eating fruit and was enjoying the new menu.

'Normally at canteens it's just junk food so now it's all healthy; it's good,' she said. Taia has tried other items such as the mushroom pasta and said she was willing to try new things. 'I'm prepared to try anything that they throw at me.'

1 Suggest why providing healthy food is such a challenge for school canteens.

2 Discuss how the things that influence the diets of young people have changed from previous generations.

3 Explain how the influences are having a positive or negative effect on the prevalence of nutritional imbalance related to the food intake of young people.

4 Outline all the factors that are an influence on the weight of young people. Suggest how many of these factors could have their impact reduced if young people were exposed to healthy food options while at school.

5 Explain why healthy food options in a canteen need to be affordable.

6 Give specific examples of the advantages for your health and wellbeing that exposure to good eating habits will provide. Relate your examples to nutritional balance obtained from healthy eating habits.

7 Indicate the short- and long-term consequences of nutritional imbalance that could be avoided if healthy food options were available in all school canteens.

8 Identify the changes that were made to the menu at the school in the article.

9 Describe what snack and lunch item you would add to a school canteen menu to improve the quality of the food that youth eat outside the home.

10 Consider your own school canteen (or a canteen you have been to before, if your school does not have a canteen). Discuss whether you think the food available at this canteen has a more positive or negative affect on youth health and wellbeing.

CHAPTER SUMMARY

- The functions of the major nutrients are:
  - nutrients are substances found in food that are required by the body for the growth and maintenance of body systems
  - nutrients are broken down into macronutrients (carbohydrates, proteins and fats) and micronutrients (vitamins and minerals)
  - macronutrients are required in large amounts by the body and micronutrients are required in small amounts
  - each nutrient is required in different amounts and has different functions within the body
  - carbohydrates – the body's preferred source of energy
  - protein – is important for the increase in the number and size of cells in the body; it is, therefore, the major nutrient required for the growth and maintenance of soft tissue (e.g. organs and muscle tissue)
  - fats – required for the formation of cell membranes; fats are, therefore, involved in the development of all cells in the body; all types of fats are a concentrated source of energy, providing 37 kJ of energy per gram
  - water – the primary transportation system for the distribution of essential nutrients and oxygen throughout the body
  - calcium – essential for building strong bones and healthy teeth
  - phosphorus – works with calcium to strengthen bones
  - iron – assists in the production of haemoglobin, the protein in red blood cells that transports oxygen throughout the body
  - sodium – assists to regulate blood pressure, blood volume and body fluids
  - iodine – used mostly by the thyroid gland, where it forms an essential component of the thyroid hormone thyroxin
  - vitamin A – has a role in normal cell growth, especially in the epithelial cells and soft tissue cells (e.g. the skin)
  - vitamin D – essential for the absorption and use of calcium and phosphorus, and therefore helps to maintain bone growth and strength
  - vitamin C – has a role in the production of collagen and the development of a healthy immune system
  - B-group vitamins – help with the metabolism of carbohydrates, proteins and fats for energy production, enhances immune and nervous system functions, and promotes cell growth and division.
- The food sources of the major nutrients are:
  - carbohydrates – simple carbohydrates include table sugar, fruit, honey and milk; complex carbohydrates include wholegrain cereals (e.g. breads, pasta and rice), vegetables, legumes and fruit
  - proteins – red meat, poultry, fish, eggs, milk and other dairy products, legumes, nuts and seeds
  - fats:
    - saturated fats – red meat, dairy products (e.g. milk, cream, butter and cheese) and eggs

    - trans fats – many processed foods (e.g. pastries and cakes), vegetable shortening and some fried foods
    - monounsaturated fats – nuts (e.g. macadamias and almonds), oils (e.g. olive oil and canola oil) and avocados
    - polyunsaturated fats – margarine and vegetable oils, oily fish (e.g. sardines), nuts and seeds
  - water – tap water and bottled water and some foods, such as fruits and vegetables (e.g. celery, cucumber, tomatoes, zucchini and watermelon)
  - calcium – dairy products (e.g. milk, cheese and yoghurt) are the most concentrated, easily absorbed sources of calcium; other foods include firm tofu, calcium-fortified soy products, some legumes and nuts, and green leafy vegetables (e.g. kale, broccoli and bok choy)
  - phosphorus – milk, cheese, eggs, yoghurt, meats (e.g. beef, lamb, chicken and fish) and nuts and legumes
  - iron – red meat, wholegrain cereal products and some vegetables, legumes and nuts
  - sodium – table salt, cured meats (e.g. ham and salami), cheese, fish and many processed foods, including snack products, sauces, canned vegetables and meats
  - iodine – vegetables grown in iodine-rich soil, fish and seafood, and iodine fortified products
  - vitamin A – dark green leafy vegetables and yellow and orange vegetables and fruits (e.g. broccoli, spinach, carrots, squash, sweet potatoes, pumpkin, cantaloupe and apricots) and animal products (e.g liver, milk, butter, cheese and whole eggs)
  - vitamin D – butter, cream, cheese, whole eggs, liver, salmon and fortified margarine; ultraviolet (UV) radiation from the sun is the best natural source of vitamin D
  - vitamin C – citrus fruits such as oranges, strawberries, tomatoes, red capsicum, broccoli and cruciferous vegetables such as cabbage and brussels sprouts
  - B-group vitamins – eggs, milk, liver, kidney, green leafy vegetables (e.g. spinach) and wholegrain cereals depending on the specific B-group vitamin.

- Dietary behaviours that can cause imbalance include:
  - unhealthy snacking
  - skipping meals
  - eating meals outside the home (e.g. convenience meals such as fast or takeaway food)
  - consuming an inadequate intake of fruit, vegetables and dairy
  - consuming soft drink and energy drinks.

- The short-term consequences on health and wellbeing of nutritional imbalance are:
  - excess sodium – issues with regulation of fluid in cells and increased blood volume
  - excess fat – weight gain, excess cholesterol, feeling self-conscious, withdrawing from social groups
  - excess simple carbohydrates – insulin resistance, weight gain, feeling self-conscious, withdrawing from social groups
  - lack of fibre – constipation, increased blood cholesterol and increased blood glucose levels
  - lack of calcium and phosphorus – decreased bone density
  - lack of iron – tiredness and lethargy.

- The long-term consequences on health and wellbeing of nutritional imbalance are:
  - excess sodium – cardiovascular diseases
  - excess fat – cardiovascular diseases, obesity, type 2 diabetes mellitus
  - excess simple carbohydrates – type 2 diabetes mellitus, obesity, dental caries
  - lack of fibre – colorectal cancer, cardiovascular diseases, type 2 diabetes mellitus
  - lack of calcium and phosphorus – osteoporosis, dental caries
  - lack of iron – anaemia.

KEY QUESTIONS

SUMMARY QUESTIONS

1. Explain the term ‘nutrients’.
2. Explain why nutrients are needed by the body. Indicate the benefits of adequate nutrition.
3. List the different types of carbohydrates. For each type of carbohydrate, explain its function and the food that contains this type of carbohydrate.
4. Explain why it is so important to consume an adequate amount of protein.
5. List the major food sources for protein.
6. List the four classes of fats. Outline the function performed by each class of fat.
7. Explain why trans fats are considered to be an unhealthy fat.
8. Describe the function of water in the body.
9. Describe the function of calcium and phosphorus in the body.
10. List the food sources for calcium and phosphorus.
11. Describe the function of sodium in the body.
12. Identify which food source of iron is considered to be the best and justify your answer.
13. Describe the function of iodine in the body.
14. Explain why vitamin A is essential and list the foods in which this vitamin is found.
15. Outline the function of vitamin D in the body.
16. Describe the functions of vitamin C in the body and list the food sources of vitamin C.
17. Describe the main function of the B-group vitamins in the body.
18. Choose one of the B-group vitamins and provide an example of its function, other than its involvement in energy production.
19. Briefly describe the specific areas of food intake that are of greatest concern in relation to the consequences for young people’s health and wellbeing.
20. Outline the reasons why young people should not skip meals.
21. Outline the reasons why the consumption of fast food should be reduced during youth.
22. Identify the ingredients in non-diet soft drinks that are of concern to health and wellbeing. Suggest some conditions that can develop in response to regular consumption of these ingredients.
23. Describe the impact that nutritional imbalances has on the physical, mental, emotional, social and spiritual health and wellbeing of youth. You may choose to use a mindmap or summary table to present your answer.

EXTENDED-RESPONSE QUESTION

QUESTION

For male and female youth, the recommended number of serves of fruit per day is two and the recommended number of serves of vegetables per day is five. Table 4.5 below outlines the percentage of young people (aged 12–15 years and 16–17 years) who consume between one to four, or five or more, serves of fruit and vegetables daily.

TABLE 4.5 Usual daily intake of fruit and vegetables (percentage of youth)

USUAL NUMBER OF DAILY SERVES	FRUIT		VEGETABLES	
	12–15 YEARS OLD	16–17 YEARS OLD	12–15 YEARS OLD	16–17 YEARS OLD
Does not eat any	3.4	5.2	0.2	1.0
Less than one serve	7.2	12.0	4.5	3.4
One serve	34.7	30.7	28.8	29.2
Two serves	34.3	32.1	29.0	25.7
Three serves	13.3	14.8	23.1	24.2
Four serves	3.7	4.5	8.6	11.0
Five or more serves	3.5	0.7	5.7	5.6

SOURCE: ABS, 2012; Australian Health Survey: First results 2011–12

Using the data in Table 4.5, discuss the short- and long-term consequences of inadequate fruit and vegetable consumption on health and wellbeing on youth. (8 marks)

EXAMINATION PREPARATION QUESTIONS

A Draw comparisons between the daily vegetable intake for youth aged 12–18 years and youth aged 19–24 years. (1 mark)

B Outline the recommended daily consumption of vegetables for those aged 12–18 years. (1 mark)

C From the data in Figure 4.32, discuss the daily vegetable consumption for young people aged 12–24. (1 mark)

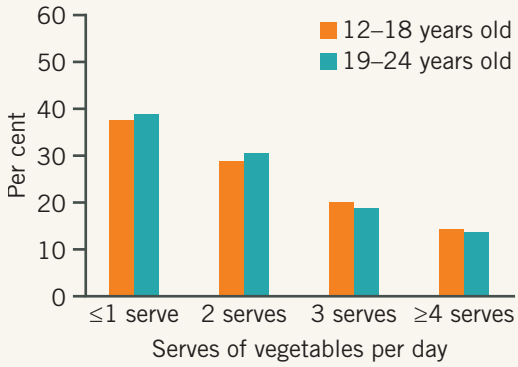


FIGURE 4.32 The daily consumption of vegetables among young people aged 12–24 years

D Identify four major nutrients that are found in vegetables. (4 marks)

E Select two of the nutrients you identified in Question 4. Describe the function of these two nutrients. (4 marks)

F Identify two possible health consequences of a low consumption of vegetables. Discuss the role that vegetables play in preventing these conditions. (4 marks)

5 PROMOTING HEALTHY EATING

KEY KNOWLEDGE

- The use of food selection models and other tools to promote healthy eating among youth, such as the Australian Guide to Healthy Eating, the Healthy Eating Pyramid and the Health Star Rating System
- Sources of nutrition information and methods to evaluate its validity
- Tactics used in the marketing of foods and promoting food trends to youth, and the impact on their health behaviours
- Social, cultural and political factors that act as enablers or barriers to healthy eating among youth, including nutrition information sourced from social media and/or advertising.

KEY SKILLS

- Evaluate the effectiveness of food selection models and other tools in the promotion of healthy eating among youth
- Evaluate the validity of food and nutrition information from a variety of sources
- Analyse the interaction between a range of factors that act as enablers or barriers to healthy eating among youth.

INTRODUCTION

Promoting healthy eating in Australia has been recognised as an area of high importance. A range of food selection models and strategies have been developed by government, non-government and community organisations. Some of these models are targeted at the general population, while other models are specifically targeted at youth. All the models aim to promote healthy eating and dietary behaviours.

The first part of this chapter looks at three food selection models that encourage healthy eating: the Australian Guide to Healthy Eating, the Health Star Rating System, and the Healthy Eating Pyramid. These models are examined with particular consideration of the impact they have on young people.

The second part of this chapter looks at the different sources of nutrition information that are available, in particular to youth. This part of the chapter explores how to critically analyse and evaluate the validity and reliability of nutrition information, with specific consideration to the large amount of nutrition information that youth may be exposed to daily.

This is followed by discussion of the marketing of foods, and the strategies that are used to sell food. Finally, this chapter explores the different social, cultural and political factors that may either enable, or be a barrier to healthy eating.

What you need to know

- The different food selection models including the Australian Guide to Healthy Eating, the Healthy Eating Pyramid and the Health Star Rating System.
- Other sources of nutrition information.
- The reliability and validity of nutrition information.
- The tactics used in the marketing of foods.
- The social, cultural and political factors that enable, or are a barrier to, healthy eating.

What you need to be able to do

- Describe food selection models including the Australian Guide to Healthy Eating, the Healthy Eating Pyramid and the Health Star Rating System.
- Evaluate the effectiveness of each of these food selection models in promoting healthy eating among youth (consider the strengths and weaknesses of each model).
- Evaluate nutrition information from a variety of sources, and identify whether the information is valid and reliable.
- Describe a range of marketing used to promote food and the impact this marketing has on youth dietary behaviour.
- Describe the social, cultural and political barriers to and enablers of healthy eating among youth and analyse the interaction between these factors.

5.1 THE AUSTRALIAN GUIDE TO HEALTHY EATING

The Australian Guide to Healthy Eating (AGHE) is a visual representation, in the shape of a plate, of the proportion of the five food groups recommended for consumption each day for a long and healthy life. It is a simple pictorial guide that summarises the advice provided in the Australian Dietary Guidelines and provides guidance on the types and proportions of foods that should be eaten in a healthy daily diet for all age groups.

The AGHE provides individuals, health professionals, the food industry and educators with information about the types of food and the proportion of the diet they should constitute to get the right balance of nutrients required for good health. It has been designed as an easy-to-use tool to guide and promote good nutrition. It includes educational support material, promotional messages, nutrition resources and healthy menus. It can also be used for patient and client counselling.

Overall, the AGHE aims to promote healthy eating habits throughout life and assist in reducing the risk of health problems in later life, such as heart disease, obesity and type 2 diabetes mellitus.

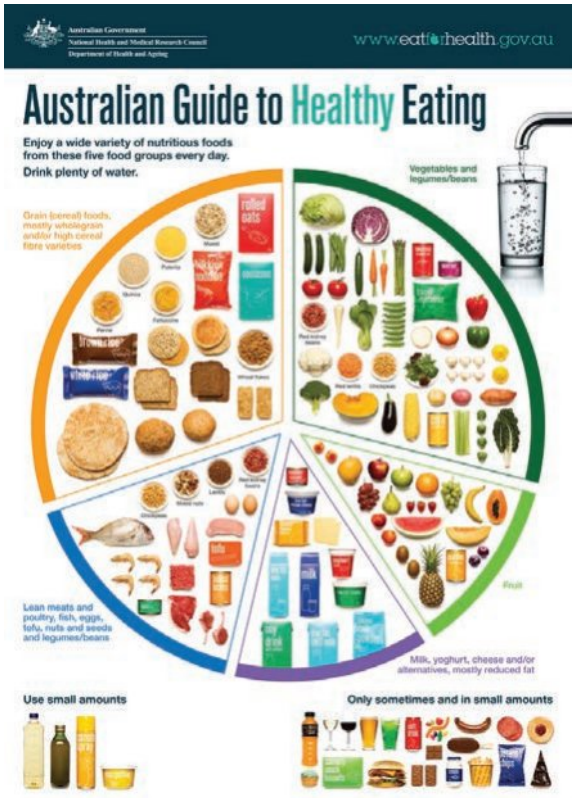


FIGURE 5.1 The Australian Guide to Healthy Eating

The overall message is to 'eat a wide variety of nutritious foods every day' and to 'drink water'.

The AGHE represents the five food groups:

- vegetables and legumes or beans
- fruit
- grain (cereals)
- lean meat and poultry, fish and eggs, nuts and seeds, and legumes or beans
- milk, yoghurt, cheese and/or alternatives, mostly reduced fat.

Each food group is represented on the plate in the proportion that it should make up in the diet. The plate proportions are based on recommended minimum serves of the food groups outlined in the Australian Dietary Guidelines, which are given a specific surface area of the plate. The AGHE also contains important information outside of the 'plate' including choosing water and foods to consume sometimes and in small amounts.

Advice from the AGHE is reported to be applicable to healthy Australians and those with common health conditions such as being overweight, but is not applicable for people with conditions that require specialised dietary advice.

Cooking oils and margarines appear in the bottom left-hand corner of the AGHE and are indicated to be used in small amounts. These foods are considered to be 'healthy fats' and contain mostly unsaturated (polyunsaturated or monounsaturated) fats. Healthy fats are needed to regulate cholesterol levels and help to reduce the risk of developing heart disease.

DISCUSS

Discuss the key nutrients in each of the food groups represented on the AGHE. Consider the nutritional imbalances and consequences to health and wellbeing that may result from over- or under-consumption of each food group.

Examples of choices that should not be included in an individual's daily food intake appear in the bottom right-hand corner of the AGHE in the section 'only sometimes and in small amounts'. These are often also referred to as 'discretionary choices'. Examples consist of a range of foods and drinks that are high in kilojoules, saturated fat, added sugars and/or salt or alcohol. These foods and drinks are considered to be discretionary because they are not a necessary part of a healthy diet. They include most sweet biscuits, cakes, desserts and pastries; processed meats and sausages; ice-cream; confectionery and chocolate; savoury pastries and pies; commercial burgers; commercially fried foods; potato chips, crisps; cream, butter and spreads high in saturated fats; and sugar-sweetened soft drinks and cordials, sports and energy drinks and alcoholic drinks (NHMRC, 2013). Many Australians consume too many foods that fit into the 'only sometimes and in small amounts' category.

Water consumption is highly recommended in the AGHE and appears in the top right-hand corner. An adult needs to drink at least eight glasses of water per day to maintain good health. More water is needed when being physically active and in hot weather. All fluids, other than alcohol, contribute to this fluid requirement. Australian tap water is safe and usually contains fluoride, which is necessary for dental health and hygiene.

Uses and limitations of the AGHE in promoting the healthy eating of youth

The AGHE focuses on foods and food groups rather than nutrients. This is a strength of the model because people eat and understand food; they don't all understand nutrients. Focusing the model on foods and food groups makes it useful to individual youth as it is easier for them to understand and apply it to their everyday food intake. This means that most young people should find the AGHE a helpful tool to enable them to make healthier food choices.

The model is visually appealing and easy to understand. Being based on pictures and requiring minimal literacy skills or nutritional knowledge makes this model easy for youth of all ages to implement.

Dividing foods into key food groups, and showing the proportion of the diet that each food group should contribute to the daily food intake based on the size of the section of the 'plate', makes it easier for youth to determine the foods that should make up the greatest proportion of their diet and those that should make up the smallest proportion.

The AGHE aims to provide consumers, health and education professionals and the food industry with information about the amounts and types of food to be eaten each day. This can help promote the healthy eating of youth as the food industry might modify the nutrients in foods, making them healthier and therefore helping youth to consume healthier diets.

Educators can use the guide to educate youth about the types of food and the proportions they should be eating each day. If young people understand and are able to implement this advice, it might help to improve healthy eating.

One limitation of the AGHE is that some foods can be difficult to classify into one section; for example, foods that combine several ingredients, like a homemade pizza or tacos.

FIGURE 5.2 Some foods don't fit into just one section of the AGHE.

Another limitation is that it may be difficult for youth to determine the best choices within a category. Without adequate knowledge about nutrition, youth may not understand that not all foods in each section are equal; for example, red kidney beans and corn are more energy dense than other vegetable choices due to their higher carbohydrate content.

TABLE 5.1 Recommended servings of each food group for youth

AGE AND SEX	VEGETABLES, LEGUMES, BEANS	FRUIT	GRAINS (CEREALS)	LEAN MEATS, POULTRY, FISH, EGGS, TOFU, NUTS, SEEDS, LEGUMES, BEANS	MILK, YOGHURT, CHEESE AND/OR ALTERNATIVES
Boys 12–13 years	5½	2	6	2½	3½
Boys 14–18 years	5½	2	7	2½	3½
Girls 12–13 years	5	2	5	2½	3½
Girls 14–18 years	5	2	7	2½	3½

TABLE 5.2 Examples of standard serves for each of the five food groups

FOOD GROUP	STANDARD SERVING SIZE – KILOJOULES (KJ)	EXAMPLES OF THE RECOMMENDED SERVING SIZE
Vegetables	100–350 kJ (equivalent to 75 g)	One cup of raw salad Half a cup of cooked vegetables (e.g. carrots, green beans, pumpkin) Half a medium-sized potato or starchy vegetable
Fruit	350 kJ (equivalent to 150 g)	One medium-sized apple, orange, banana One cup fresh diced fruit (or canned with no added sugar) Two small fruits such as kiwi fruit or plums
Grains (cereals)	500 kJ	One slice of bread Half a medium roll Half a cup of cooked grain such as rice or pasta Half a cup of cooked porridge Two thirds of a cup of cereal flakes (with no added sugar)
Lean meats, poultry, fish, eggs, tofu, nuts, seeds, legumes/ beans	500–600 kJ	100 g raw lean meat such as beef, lamb, pork (65 g when cooked) 100 g raw poultry (80 g when cooked) Two large (60 g) eggs One cup of cooked legumes (lentils, chickpeas) 170 g tofu 30 g nuts or seeds
Milk, yoghurt, cheese and/or alternatives	500–600 kJ	One cup of milk Two slices of cheese (or 40 g of hard cheese) Half a cup of ricotta cheese Three quarters of a cup of yoghurt One cup of soy, rice, almond (etc.) milk fortified with at least 100 mg calcium per 100 mL

ACTIVITY 5.1: EXPLORE THE AUSTRALIAN GUIDE TO HEALTHY EATING

1 Briefly describe the AGHE.
2 Which population groups does the AGHE target? Justify your response.
3 Explain why the Australian Government developed the AGHE.
4 Outline three strengths of the AGHE.
5 Outline three weaknesses of the AGHE.
6 Discuss whether you would find using the AGHE easy in your life. Explain areas that you would find simple and areas that would be difficult.

ACTIVITY 5.2: USING THE AUSTRALIAN DIETARY GUIDELINES AND THE AUSTRALIAN GUIDE TO HEALTHY EATING AS TOOLS TO PROMOTE HEALTHY EATING

Read the following text and answer the questions that follow.

Nikita is a 15-year-old girl who attends school five days a week. She plays in the school netball team once a week and also plays in a local hockey team. She trains for hockey once a week and plays a match on Saturday mornings. Nikita eats fairly healthy meals when she is at home with her family; however, she often buys lunch at the canteen and enjoys going out for meals with her friends on the weekend. Nikita's typical food intake for one weekday is as follows:

BREAKFAST	LUNCH	DINNER	DRINKS	SNACKS
Two slices of toast with one slice of cheese	One sausage roll with sauce	One serve of roast chicken Half a roast carrot Half a cup of cooked peas Half a roast potato	One cup of tea Four glasses of water	One apple One muesli bar One tub of strawberry yoghurt Two chocolate-chip cookies

1 Using the information above and in Tables 5.1 and 5.2, copy and complete the table below.

	BREAD AND CEREALS	FRUIT	VEGETABLES AND LEGUMES	MILK, YOGHURT AND CHEESE	MEAT, POULTRY, FISH AND EGGS	EXTRA FOODS
Recommended intake (serves)						
Nikita's intake (serves)						

2 Evaluate Nikita's food intake according to the information in the AGHE. Identify the food groups she may be over-consuming. Identify the food groups she may be under-consuming.

3 Taking into account the food groups that are under- and over-consumed, identify the nutrients Nikita may be lacking and the nutrients she may be over-consuming.

4 If Nikita was to continue these dietary trends, identify the possible impact on her short- and long-term health and wellbeing.

5 Use the AGHE to suggest three modifications to Nikita's food intake. Justify your answer.

6 Justify how effective you feel the AGHE is in promoting healthy eating in Australian youth.

5.2 THE HEALTH STAR RATING SYSTEM

The Health Star Rating System was developed by the Commonwealth, state and territory governments in collaboration with industry, public health and consumer groups. It was implemented from June 2014 over a five-year period on a voluntary basis. It is a labelling system that rates the overall nutritional profile of packaged food and assigns it a rating from half a star to five stars that is visible on the front of food packaging. It provides a quick and easy method to compare packaged foods from the same group; for example, comparing one type of breakfast cereal with another. The more stars a product has, the healthier the choice. The Health Star Rating System was developed to make it easier to read labels by taking away the guesswork. It aims to help Australians to quickly and easily compare similar packaged foods and make healthier choices. The nutrition labels will still appear on packaged foods, and these are a good source of additional information for those who want to make more informed choices.

FIGURE 5.3 The Health Star Rating System is used on packaged foods.

The calculation takes into account the amount of select components that are linked to increased risk of developing certain chronic diseases if consumed in large amounts as well as the quantity of select beneficial components. Health Star Ratings are based on:

- total energy (kilojoules) of the product
- the saturated fat, sodium (salt) and sugar content
- the fibre, protein, fruit, vegetable, nut and legume content.

A high Health Star Rating doesn't mean that the food is healthy; it is simply a tool to assist individuals to follow a healthy diet, and consideration should be given to other information such as the Australian Dietary Guidelines.

The focus of the Health Star Rating System is processed and packaged foods, and it is not intended to be used on fresh fruit and vegetables. Consumers are encouraged to consume a balanced diet that includes fresh foods where possible.

FIGURE 5.4 The Health Star Rating System is a labelling system that rates the overall nutritional profi le of packaged food.

Uses and limitations of the Health Star Rating System in promoting healthy eating of youth

The Health Star Rating System is designed specifically for individuals to help them make healthier choices while in the store. The more stars a product has, the healthier the choice is. This makes it a simple system to use and therefore helps to promote healthy eating in youth.

The Health Star Rating System can also encourage manufacturers to modify their products so that they can be awarded more stars. This can promote healthy eating in youth as if manufacturers are making healthier products, it can improve healthy eating without youth having to change their buying patterns.

One limitation of the Health Star Rating System is that youth need to remember that the stars are designed only to compare similar products; for example, it can be useful when comparing one breakfast cereal with another. It is not useful in helping youth to decide between foods from different categories. For example, if looking for a snack food and a decision is being made between a yoghurt and a muesli bar, the Health Star Rating System is of little use, as it is not designed to compare products from two different categories.

Like the AGHE with its food-based approach, the Health Star Rating System aims to assist consumers with making healthy food choices. However, not everyone favours their nutrient-profiling system. For example, Dr Christina Pollard and Mark Lawrence stated that the AGHE promotes:

> enjoyment of a variety of nutritious foods from all five major food groups and limiting or avoiding highly processed, energy-dense and nutrient-poor 'discretionary' or junk foods and drinks. People eat foods rather than nutrients in isolation and because of this it makes more sense to give nutritional advice on whole foods, rather than nutrients. The Health Star Rating System looks at nutrients in isolation and awards stars irrespective of whether a food is from the 'discretionary' category, such as confectionery (*The Conversation*, 2015).

This can cause confusion for youth who are selecting foods based on stars; they may select a confectionary-based snack over a yoghurt simply because it has more stars. The fact that whole foods such as fresh fruit and vegetables are not intended to apply the system can add even more confusion.

The Health Star Rating System also bases the number of stars a product receives on the total energy of the product, specific nutrients such as saturated fat, sodium and sugar content, and the fibre, protein, fruit, vegetable, nut and legume content. It does not provide any information on the intake of other specific nutrients such as the amount of calcium or iron in the product. This can prove to be a limitation, as youth are not able to get a full overview of the nutritional value of a product if they are using the Health Star Rating System as the basis for their food selection.

The main limitation of the Health Star Rating System is the fact that is it voluntary. This means that food manufacturers can decide whether or not a product will display health stars, so while some manufacturers might be willing to display stars on foods that attract a high number of stars in their category, they are less likely to put one or half a star on their products. This means that they might simply decide not to put any stars on their product at all.

ACTIVITY 5.3: THE HEALTH STAR RATING SYSTEM

1 Go to YouTube and watch the 'Seeing stars' video produced by ABC TV's *The Checkout*.
2 List and explain two examples of how the Health Star Rating System aims to improve food selection in Australia.
3 Outline some of the limitations of the Health Star Rating System for young people.
4 Justify how successful you feel this program will be in promoting healthy eating in youth.
5 Consider the role of manufacturers and the fact that the star system is voluntary. Do you think that the star system would be more effective if all products had to display their star rating?

ACTIVITY 5.4: MEDIA ANALYSIS – HEALTH STAR RATING SHAKE UP

Health Star Rating system shake-up proposes penalising cereals that contain added sugars

By Stephanie Daizell, *ABC News*, 25 June 2019

Sugary cereals like Nutri-Grain and Milo would be the biggest losers in a shake-up to the federal government's Health Star Rating System, proposed by the nation's largest consumer advocacy group.

Key points:

- The Health Star Rating System gives packaged and processed foods a rating of up to five stars
- The rating takes into account the 'positive nutrients' and 'risk nutrients' foods comprise
- Currently, only 30 per cent of food products in Australia have Health Star Ratings

CHOICE wants the algorithm used to score food products changed, to penalise 'added sugars' that are not naturally found in foods.

When it applied the alternative algorithm to more than a dozen products, it found the Health Star Ratings of cereals like Nutri-Grain, Uncle Toby's Plus Protein and Milo dropped from four out of five stars to just one-and-a-half stars.

Meanwhile, Sanitarium Soy Milk Vanilla Bliss and Golden Days Apricot Delight lost one star each.

CHOICE policy and campaigns adviser Linda Przhedetsky said its modelling showed a lot of products were not being accurately represented by the Health Star Rating System.

'Some of the findings from our work really surprised us, because we found some products could actually lose as much as two-and-a-half health stars – that's extremely significant.'

The Health Star Rating System is designed to give you an 'at-a-glance' overall health rating of packaged and processed foods.

Foods are rated from half a star to five stars, depending on how many 'positive nutrients' and 'risk nutrients' they comprise.

They lose points for energy, saturated fat, sugar and salt, and gain points for fruit and vegetable content, protein and fibre.

But Ms Przhedetsky said not all sugars are created equal, and the Health Star Rating algorithm should treat them differently.

'The system doesn't distinguish between the extra sugar that's added to foods like breakfast cereals, and the naturally occurring sugars in dairy or fruits,' she said.

'Health Stars are an important tool for making decisions about the food and drinks that we buy, and incorporating a penalty for added sugars will ensure that the algorithm better reflects current nutrition advice.'

FIGURE 5.5 Under the federal government's revised Health Star Rating System, Nutri-Grain's score would drop from four out of five stars to just one-and-a-half stars.

Companies sugar-coating products

Health advocates have been pushing for the federal government to adopt a range of recommendations from a draft report into the system, after a review was agreed to by state and federal ministers five years ago.

One recommendation is for governments to set an uptake target of 70 per cent by the end of 2023.

Currently, only 30 per cent of products in Australia have Health Star Ratings, and the Cancer Council's Nutrition and Physical Activity Committee's chair, Wendy Watson, said that percentage was far too low.

'If a food company is only choosing the products they want to choose to put the health star rating on, they're using that as a marketing advantage,' she said.

'The idea of the Health Star Rating is for consumers to be able to make healthier choices … it was mandated, it would be a level playing field, and all food manufacturers would have to put the Health Star Rating on all their products, not choose which products to put it on.'

But a spokesman for the Australian Food and Grocery Council said the industry already had widespread uptake.

'According to research by the Heart Foundation delivered to the forum on food regulation, over 13 000 products have carried the [Health Star Rating], which is the fastest uptake of any voluntary system in Australia and is quicker than international versions,' the spokesman said.

There are also calls for the government to go even further than the draft report's recommendations, with some advocates saying added sugars should be included on nutrition information panels.

Currently, they only contain a total amount of sugar.

'The sugar that's now on the nutrition information panel is made up of natural sugars that are occurring in the products such as sugars from milk, and sugars from fruit, but also added sugars, and at the moment you can't tell the difference,' Ms Watson said.

'Added sugar is what affects people's health and we know if we eat too much added sugar, we're likely to gain weight, and that puts us at risk of a lot of chronic diseases, including 13 different cancers.

'If people can see how much added sugar is in their food, they'll be able to choose more wisely.'

…

1 'CHOICE wants the algorithm used to score food products changed, to penalise "added sugars".' Explain what is meant by 'added sugars'.
2 Explain the short- and long-term consequences to health and wellbeing of having sugars added to food.
3 Under the proposed amendments to the Health Star Rating System, Nutri-Grain would change from a four-star product to a one-and-a-half star product. Look up the nutrition panel of Nutri-Grain online. Identify the possible reasons for this change in the product's star rating.
4 Consider the call for added sugar to be clearly labelled on the nutrition panel. Would this assist young people to make better dietary choices? Would any other stage of the life span benefit from this?

5.3 THE HEALTHY EATING PYRAMID

Nutrition Australia is a non-government, non-profit, community-based organisation that aims to promote the health and wellbeing of all Australians. Originally founded in 1979 as the Australian Nutrition Foundation, Nutrition Australia is Australia's primary community nutrition education body, providing scientifically based nutrition information to encourage all Australians to achieve optimal health through food variety and physical activity.

The Healthy Eating Pyramid has been Nutrition Australia's iconic guide to a healthy and balanced diet for over 30 years. It is a simple to read visual guide created to advise Australians on the types and proportions of foods that we should eat every day from the key food groups for good health.

The Healthy Eating Pyramid has continually evolved as a guide for Australians towards a balanced and varied diet in line with current dietary guidelines. Originally, the Healthy Eating Pyramid was launched in the 1980s; however, the current edition was launched in 2015 to reflect current dietary advice.

The Healthy Eating Pyramid categorises into four main layers and six main food groups the different types and proportions of foods people should eat every day to attain good health. The Healthy Eating Pyramid includes healthy fats in addition to whole foods and minimally processed foods in the five main food groups as the basis of a balanced diet.

Although the placement of each food group on the Healthy Eating Pyramid can be applied to Australians of any age between 1–70 years, it is specifically designed to provide information on the recommended daily food intake for Australians aged between 19–50 years.

The bottom of the pyramid includes the plant-based food groups that should form the base of our diet and should contribute the largest portion of our daily food intake. It is recommended that foods from these layers make up approximately 70 per cent of our diet. This is the biggest section of the Healthy Eating Pyramid; these layers are collectively referred to as the 'foundation layers'. These layers contain three core, plant-based food groups: legumes and vegetables, grains, and fruit.

From late childhood to adulthood, the recommendation is to eat at least two serves of fruit and five serves of vegetables or legumes each day. When consuming fruit, it is recommended individuals consume mainly whole fruit (rather than juice) and include a variety of different fruits. Individuals should also aim to include in their diet a wide variety of

FIGURE 5.6 The Healthy Eating Pyramid

vegetables, such as root vegetables, legumes and green leafy vegetables, both raw and cooked. When selecting foods from the grains section of the pyramid, preference should be given mostly to wholegrains including oats, brown rice and quinoa.

Other whole foods such as dairy foods (milk, yoghurt, cheese) and alternatives and lean meats, poultry, fish, eggs, legumes, seeds and nuts make up the next layer of the pyramid which is referred to as the 'middle layer'. Reduced fat options of milk, yoghurt and cheese are recommended along with lean cuts of meat to limit excess kilojoules from saturated fat.

At the top of the Healthy Eating Pyramid is the 'top layer', which is made up of healthy fats such as extra virgin olive oil, avocado, seeds and nuts. Individuals need a small amount of these each day to promote good health and wellbeing including the promotion of heart health and brain function. The Healthy Eating Pyramid recommends selecting these types of healthy fats over foods that contain trans fats and saturated fats.

The success of the Healthy Eating Pyramid as an educational tool lies in its simplicity, and it continues to be in great demand from educators, health workers and the general public. It has been designed as a simple, conceptual model for people to use as a first step to adequate nutrition. It represents basic foods only and facilitates individual food choices in the ways that these foods can be mixed to create flavours and textures that please Australia's diverse population.

Uses and limitations of the Healthy Eating Pyramid in promoting healthy eating of youth

Traditionally, the Healthy Eating Pyramid has been used as an educational tool to help build an understanding of the importance of different foods in achieving dietary balance. The Healthy Eating Pyramid is a simple to use model to help youth make healthy food choices by using the visual images to make their food choices.

The Healthy Eating Pyramid focuses on foods and food groups rather than nutrients.

ADDITIONAL MESSAGES IN THE HEALTHY EATING PYRAMID INCLUDE:

- Enjoy herbs and spices, which give colour and flavour to meals without having to add salt.
- Choose water over sugary options such as soft drinks, sports drinks and energy drinks. Water is the best drink to stay hydrated and it supports many functions in the body.
- Limit salt and added sugar intake. This includes avoiding adding salt or sugar to food when cooking or eating and avoiding packaged foods and drinks that have salt or added sugar in the ingredients.

SOURCE: Nutrition Australia, 2017

The model is visually appealing and easy to understand. Being based on pictures and requiring minimal literacy skills or nutritional knowledge makes this model easy for youth of all ages to be able to implement.

By dividing foods into key food groups, showing the proportion of the diet that each food group should contribute to daily food intake based on the size of the section of the 'pyramid', it is easier for youth to determine which foods should make up a larger portion of their diet and which foods should make up a smaller proportion of their diet. It can be used by youth to help highlight the importance of nutrient-rich vegetables making up the largest portion of an ideal food intake.

One limitation is that it may be difficult for youth to determine the best choices within a category. Without adequate knowledge about nutrition, youth may not understand that not all foods in each section are equal; for example, quinoa is a more nutrient-dense and less- refined option than some types of dry grain-based crackers, and potatoes are more energy dense than other vegetable choices due to their higher carbohydrate content. Also having fruit as part of the foundation layer with vegetables (albeit in a smaller section) may lead some youth to believe that these food groups are of equal importance and should be shared equally as the foods that make up the largest portion of the diet. The problem with this is that many fruits are considerably higher in sugar than most vegetables, and over-consumption of this group can contribute to excess energy intake and may result in weight gain.

FIGURE 5.7 Fruits are good for you, but they also contain a lot of sugar.

ACTIVITY 5.5: THE HEALTHY EATING PYRAMID

1 Give examples of when and where you have come into contact with the Healthy Eating Pyramid.
2 Refer to Nikita's food intake in Activity 5.2. Use the Healthy Eating Pyramid to evaluate Nikita's diet. Identify the food groups she may be over-consuming and those she may be under-consuming.
3 Use the Healthy Eating Pyramid to suggest three modifications to Nikita's food intake. Justify your answer.
4 Outline three strengths of the Healthy Eating Pyramid.
5 Outline three weaknesses of the Healthy Eating Pyramid.
6 Justify how effective you think the Healthy Eating Pyramid is in promoting healthy eating in Australian youth.
7 Referring to Figure 5.1 and Figure 5.6, identify three similarities and three differences between the Australian Guide to Healthy Eating and the Healthy Eating Pyramid.
8 Identify which model you would prefer to use as a means of improving your own diet. Explain your choice.

5.4 SOURCES OF NUTRITION INFORMATION

Reliable nutrition information is important to enable healthy food choices. This information, however, is only useful if the general population is able to understand it.

Research indicates that key messages from the Australian Dietary Guidelines are received by the community; however, the understanding of this information and the ability to convert it to making positive food choices are poor. Knowledge tends to be higher among those from higher socioeconomic groups, those who have a tertiary degree, employed people and women.

Nutrition information can be gained from a range of sources, such as school, food labels, the media, health professionals, the internet, family and friends, and nutrition agencies. Every day, information about food and nutrition appears in the media. Sometimes this information can be confusing and even contradictory. It can be challenging for youth to decide whether the information that they access in newspapers, on television cooking or lifestyle programs, on the radio or via the internet is reliable and trustworthy.

Celebrity cooking shows, weight-loss programs such as *The Biggest Loser* and reality programs such as *My Kitchen Rules* and *MasterChef* attract large followings, and can inspire an interest among youth in learning how to prepare and enjoy food. They may also offer tips on developing healthier eating habits. Many of these programs also provide accompanying websites with a range of information and advice.

Instagram personalities also attract large amounts of followers, particularly youth followers. These influencers often offer weight loss and diet and exercise advice. However, it may be difficult for youth to determine which advice is reliable.

A wide range of mobile phone apps are available to help youth choose healthier products. Accessing information about nutrition and healthy eating is not difficult for most young people; however, determining which advice is reliable can be significantly more challenging.

Food labels

The information that needs to be included on food labels is regulated by Food Standards Australia and New Zealand (FSANZ) and is outlined in the Australia New Zealand Food Standards Code. The information that appears on the labels of most food products aims to help consumers to make safe and healthy food choices. Some information that appears on labels is mandatory, while other information such as Health Star Ratings can be included voluntarily by manufacturers. Some regulations of food labelling include that the label must be in English, the font must be legible, information on labels must be truthful (e.g. providing accurate weights) and the label should provide an accurate description of the product. Additionally, packaged food must include a nutrition information panel, and provide a list of ingredients and food additives (including any potential allergens), date marking, country of origin data and contact details for the manufacturer or importer.

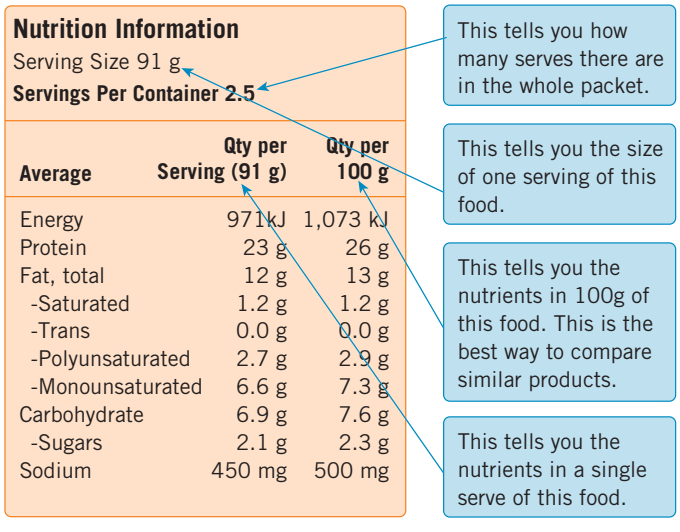


FIGURE 5.8 Food labels

Youth may use food labels for a range of reasons, such as helping to reduce intake of saturated fat, salt or sugar, to avoid a particular ingredient or food additive, or to avoid foods for personal reasons, such as choosing to purchase grass-fed beef or Australian-grown foods. The main reasons why people refer to labels include health concerns, weight management and food allergies. The main information people look for on a label includes the 'best before' date, fat content, country of origin information and sugar content.

Food safety and nutrition agencies

A number of government and non-government agencies can provide information about nutrition. It is important that youth use reputable agencies that base their advice on unbiased research, in contrast to some commercial organisations, which are focused primarily on increasing their profits.

Nutrition Australia

Nutrition Australia is Australia's leading nongovernment, not-for-profit, community-based and independent nutrition agency. It is considered Australia's peak community nutrition education body. Nutrition Australia is well known for the development of the Healthy Eating Pyramid, but it also provides a range of other services, such as:

- providing information to the public on nutrition information and current food trends
- coordination of nutrition events in the annual National Nutrition Week campaign
- media commentary
- food industry consultations
- menu assessments
- facilitation of workplace programs
- nutrition training and presentations.

Being a reliable and expert nutrition organisation, Nutrition Australia can assist youth to make healthy food choices throughout the lifespan.

Non-government organisations

A range of non-government organisations in Australia, such as the Cancer Council, the Heart Foundation and Diabetes Australia, all offer nutrition advice. Information on these sites is typically based on government guidelines and the latest research, and can therefore be considered reliable. It is important that individuals remember, when they access this material, that it may have been written or prepared for people suffering from a specific condition, and may therefore not be suitable advice for all Australians – particularly during youth.

Food Standards Australia and New Zealand (FSANZ)

FSANZ is a bi-national government independent statutory agency established by the *Food Standards Australia New Zealand Act 1991* (Cth). It is responsible for the development and administration of the Australian and New Zealand Food Standards Code. The code outlines the requirements for foods such as additives, food safety, labelling and GM foods. In Australia, the enforcement and interpretation of the Code are the responsibility of state and territory departments. While not directly involved in providing nutrition information, FSANZ is responsible for labelling regulation in Australia, which can assist young people in determining the nutritional value and composition of the food they are eating.

Food selection models

As discussed earlier in this chapter, the AGHE is a food model that was developed by the Australian Government. It specifies recommendations for food intake based on the Australian Dietary Guidelines. The AGHE provides visually appealing and easy-to-understand information to help Australians make healthier food choices.

The Health Star Rating System is another initiative that aims to provide information to assist individuals to make healthy food selections. The Healthy Eating Pyramid is

FIGURE 5.9 Fast food menus often display dietary information so customers can make better choices.

the trademark of Nutrition Australia, and is commonly used in schools to help educate youth on how to improve their food intake.

Media campaigns

Various media campaigns provide nutritional information, although some are more trustworthy than others. Government media campaigns – such as LiveLighter® and Rethink Sugary Drink – are based on government nutrition guidelines, while other media campaigns are simply designed to advertise or market a specific product, so they may be less reliable.

ACTIVITY 5.6: MEDIA ANALYSIS

1 Watch the video, 'Milo, the official drink of play' (available at https://cambridge.edu.au/redirect/8873). This video was made by Nestlé, which manufactures Milo in Australia and New Zealand. Outline the nutritional information that is provided in this Milo advertisement.
2 Visit the Milo Australia website (available at https://cambridge.edu.au/redirect/8874). Outline other nutritional information about Milo provided by Nestlé and the marketing techniques used to promote Milo.
3 Watch the video, 'Legendairy Deb Poole – waterslide tester' (available at https://cambridge.edu.au/redirect/8875). Outline the nutritional information about milk that is provided by Dairy Farmers in this advertisement.
4 Watch the video, 'You wouldn't eat 16 teaspoons of sugar, so why drink it?' (available at https://cambridge.edu.au/redirect/8876), from the Rethink Sugary Drink campaign. Outline the nutritional information that is provided in this campaign video.
5 Watch the video, 'Bananas make those bodies sing' (available at https://cambridge.edu.au/redirect/8877). Outline the message that this advertisement is trying to get across. With reference to specific nutrients, explain how bananas can make 'bodies sing'.
6 Suggest factors that should be considered about nutrition information provided in media campaigns.

LIVELIGHTER®

LiveLighter® started in June 2012 in Western Australia and was launched in Victoria in 2014. In addition to mass media advertising, the LiveLighter® campaign engages with Australian adults through social media, online and printed resources, advocacy and via retailers.

The LiveLighter® campaign is part of the Healthy Together, Victoria initiative, which is run by the Cancer Council Victoria and the Heart Foundation, with funding from the Victorian Government.

FIGURE 5.10 One of the campaigns run by LiveLighter®

In addition to running campaigns on television, radio and social media, LiveLighter® has an informative website that provides nutritional information, sample meal plans, recipes, risk calculators and fact sheets. The LiveLighter® website provides about 300 healthy recipes that are consistent with the AGHE and all contain a nutrition information panel. The recipes include plenty of vegetables, wholegrains and lean meats.

LiveLighter® – through its media campaigns and website – provides people with a range of different types of nutrition information that is in line with current government guidelines. While LiveLighter® is not designed specifically for youth, it is a reliable source of nutrition information for adults.

Rethink Sugary Drink

Rethink Sugary Drink is a partnership program between a wide range of community and health organisations including Cancer Council, Diabetes Australia, LiveLighter®, the Young Men's Christian Association (YMCA), the Victorian Aboriginal Community Controlled Health Organisation, the Obesity Policy Coalition, Australian Dental Association and Dental Health Services Victoria and is proudly supported by a number of organisations including Nutrition Australia.

The purpose of the program is to encourage Australians to rethink their sugary drink intake by highlighting the amount of sugar in sweet drinks such as sports drinks and soft drink. The aim is then to encourage them to drink water, unsweetened milk or other unsweetened beverages in place of these other more sugary options.

This program can be a valuable source of information for youth, because in addition to the media campaign there is an informative website with a range of tips and resources, including a drinks calculator to help youth understand their sugar intake. It also has specific information and resources to target the Aboriginal and Torres Strait Islander youth.

Internet

The internet can include websites, social media and online advertising. On the whole, the internet is an incredibly useful tool that can enable youth to access information at any time and from anywhere in the world. The problem is determining which sources are reliable and trustworthy. As discussed below, it is important when researching nutrition information that youth refer mainly to government or education websites to ensure that the information they are accessing is safe. They should also refer mainly to Australian websites, as advice about nutrition can differ between countries.

Health professionals

A range of health professionals offer advice, information and support related to healthy eating. These may include, but are not limited to, dietitians, nutritionists, naturopaths, general practitioners, personal trainers and health coaches. It is important for youth that they check the credentials of the person from whom they are getting professional nutrition-related advice, to ensure that the advice is credible, but more importantly appropriate for them personally and their stage in the lifespan.

Health professionals may offer a range of services relating to healthy eating such as dietary assessment, providing recipes and meal and menu planning, and cooking and food preparation advice.

Dietitians and nutritionists

Dietitians have a university qualification and are able to provide personalised advice on a range of conditions such as food intolerances, obesity and diabetes. They can work in a wide range of settings such as hospitals, the food industry, community health centres, private practice or in the field of research. They play an important role in promoting healthy eating messages.

Nutritionists who are accredited by the Dietitians Association of Australia also have a tertiary qualification and can provide nutrition-related advice in a range of settings, including community health and tertiary education; however, they do not provide individual diet or nutrition consultations or group therapy.

FIGURE 5.11 Professionals, like this diabetes healthcare specialist, can help patients improve their eating habits.

General practitioners

General practitioners (GPs) play an important role in identifying people who may require additional nutrition information, support or counselling, and are effective at disseminating nutrition information.

Family and friends

This type of advice or nutrition information tends to be largely hearsay and opinion. It is important when taking advice about nutrition that youth ask questions about the original source of information. A friend may have read something on Facebook or Instagram about the importance of excluding a particular food; however, without seeing the source of this information and the reasons why it was suggested that it be avoided, individuals should exercise caution in following such advice. Family members can also pass on advice from one generation to the next; again, it is important to check this type of advice, as current guidelines relating to healthy eating are constantly being reviewed and updated.

School

Schools typically teach youth about nutrition using the Australian Dietary Guidelines and the AGHE or Nutrition Australia's Healthy Eating Pyramid. All these food-selection models and tools are reliable sources of nutrition information and can provide a good basis for youth in making changes to their diet.

5.5 METHODS AND STRATEGIES TO EVALUATE THE VALIDITY OF NUTRITION INFORMATION

There is so much information available in the community about food and nutrition, especially with the expansion of the internet. Gone are the days when individuals had to go in person to a nutrition specialist to access information about the food they were eating. Now, with the help of the internet, they can access information from a range of people with different perspectives, anytime and anywhere in the world. People are using a range of online tools such as Twitter, YouTube, blogs and Facebook, and creating webpages as a means of communicating their message.

This is not always a bad thing: with health and nutrition information and advice constantly changing and being updated as society learns more about these issues, online sources are able to share new information with the world quickly. The problem, of course, is determining the reliability and validity of this information. With more people now turning to the internet than the print newspaper, there needs to be a way for them to determine the validity of the information they find.

It may be helpful for individuals to consider the following questions:

Where does it come from? When looking at nutrition information online, consider where the information comes from. Generally, websites that end in '.edu.au' (educational institutions) or '.gov.au' (government agencies) are the most credible sources of nutrition information. Websites ending in '.org.au' (organisations, often not-for-profit) can also be a good and reliable source of information. Extra care must be taken when viewing some sites ending in '.com.au' (commercial sites).

The key is to be an informed consumer. If in doubt, get a second opinion from a registered dietitian or other healthcare provider. Consumers should also check the references or sources of the information on these sites. If there aren't any, consideration must be given to the reliability of the information.

What is the purpose of the information? Is the information presented about providing an advertisement for a particular product? If this is the case, then often the information will be biased towards the product. Even if research is used to support the product, this can often be manipulated to provide a more favourable view of the product.

When was it updated? It is important to look at the date when the online information was shared and when it was updated. Nutrition information can easily become out-dated, and it is therefore important that online sources are checked regularly and updated to make them a reliable source of information.

Who is providing the advice? Is the information provided by a credible source such as a suitably qualified person or, even better, a group of people, and is their advice free from the influence of commercial sponsors? When information is provided on behalf of a group of professionals who use a range of studies to support their advice or information, it is more reliable as it then becomes more than the 'expert opinion' of just one person. A professional such as a dietitian, nutritionist or medical doctor may be suitably qualified; however, it is still important to check whether they are offering the advice themselves or are being employed to offer it on behalf of a particular product or company. For example, a nutritionist who is employed by a confectionery company might be less likely to promote a low-sugar diet or might promote the consumption of one product over another because it is produced by the company that employs them. It is important, when looking at nutritional advice, that consideration is given to who sponsors the information. There might be advice about a particular nutrient; for example, eating more meat to increase iron in your diet. While this advice may be true, if the information is sponsored by Meat and Livestock Australia, we may need to question its reliability.

How is the information supported? It is important to check whether the information is supported by unbiased, population-based research and factual references rather than just being based on opinion. This means looking at the research and references provided and questioning the validity in cases where this information is not provided.

Individuals should question information when:

- the information provided is anonymous or does not provide a source
- the information appears to be biased or one-sided without obvious reason
- the information is old or out-dated and has not had any recent updates
- the information is not supported by research or a body of evidence provided by a group of experts
- the qualifications of the so-called expert are not provided
- the information claims to be a miracle cure or is only available from this one source – chances are that if it seems too good to be true, it probably is
- there is a conflict of interest, such as sponsorship of information
- the information provided promotes the reader having to pay for something or buy a specific product, such as a certain brand of vitamins.

FIGURE 5.12 Nutrition information can be found from a variety of sources.

CASE STUDY: HEALTH AND WELLBEING IN THE MEDIA

Read the four articles below and then answer the questions that follow.

- **Article 1:** 'Dear Pete Evans, please spare us the toxic advice. Yours, parents', *The Sydney Morning Herald*, 14 March 2019 (available at https://cambridge.edu.au/redirect/8878).
- **Article 2:** '"Irresponsible": Streaming services under fire over controversial documentaries', *The Age*, 9 October 2019 (available at https://cambridge.edu.au/redirect/8879).
- **Article 3:** 'Expert slams "Breatharianism" claims, says 97-day fast is "dangerous"', *Fox News*, 3 July 2019 (available at https://cambridge.edu.au/redirect/8880).
- **Article 4:** 'Belle Gibson may have been delusional when blogging fake brain cancer claims: court', *ABC News*, 13 March 2017 (available at https://cambridge.edu.au/redirect/8881).

1. Identify some of the nutrition or health claims made in the above articles.
2. Explain the factors that may have influenced people's decision to believe or follow the claims or advice in these articles.
3. Explain some of the possible risks to health and wellbeing of such claims in the media.
4. Outline how access to the internet and social media influences the availability of such information.
5. Other than Audra Bear, identify an Instagram influencer who is providing information about nutrition that is dangerous to health. Outline the issues with the advice provided.
6. Identify and explain factors young people should consider when determining the validity of nutrition information.

5.6 MARKETING OF FOODS

Marketing is used by manufacturers to increase awareness and draw attention to their product in an attempt to encourage people to purchase it. Marketing is big business, and it is well researched and sophisticated. Marketing can include television, print or radio advertisements, social media advertisements, sponsorship, product placement and sales promotions.

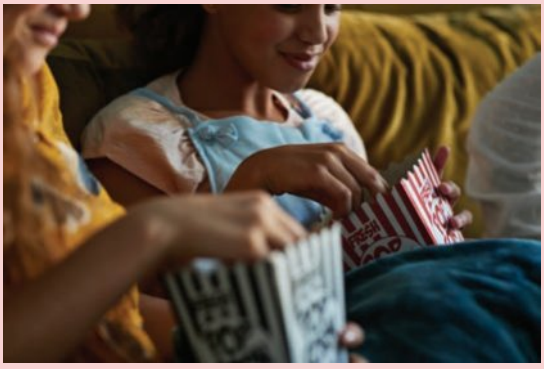
Television is the most popular type of marketing for food and beverage products. Television marketing is increasingly being integrated with a range of other marketing techniques that focus on branding, such as sponsorship, text messaging, emails, websites, product placement, competitions, use of celebrities, brand mascots and point-of-sale displays.

According to the Obesity Policy Coalition, featuring nutrient content claims and sports celebrity endorsements on unhealthy food products can tip food preferences towards less nutritious products. These findings add to the evidence base on the effect of common food packaging promotions on young people's food choices.

Youth access to digital media is increasing and thus youth exposure to food marketing is also growing. The World Health Organization states that digital marketing is 'promotional activity, delivered through digital medium, that seeks to maximise impact through creative and/or analytical methods.'

The use of social media and video sharing sites by youth increases their vulnerability to targeted marketing. Targeted marketing is where companies (such as food companies) use a range of techniques to establish purchasing habits and target marketing towards individuals. For example, personal data may be collected through things that have been liked on social media and purchasing history, to ensure that food marketing is targeted to the individual and more likely to be effective. Currently, there is no effective method of regulation to protect youth from this type of marketing.

DISCUSS



1 Discuss the marketing of foods that you have seen in the last 24 hours. What types of foods were you exposed to? Were these foods high in nutritional value?

2 Do you think the marketing you have seen is different to the marketing that an adult has seen?

Celebrities

The use of celebrity or expert endorsements is a relatively inexpensive marketing technique that can increase the trust youth have in a product and create brand loyalty. This can be particularly true if it is a sporting celebrity that associates their name with a product. Youth who idolise that sporting celebrity are usually able to identify the sponsor of their favourite athlete and are more likely to have trust in a product that their sporting idol promotes.

Social media

Food manufacturing companies use social media (e.g. Facebook and Instagram) to market their products to youth consumers and bypass the television advertising regulations. Companies' social media pages are part of an overall marketing strategy and are professionally moderated. Social media marketing campaigns include features to increase consumer interaction, such as competitions, interactive games and apps.

Targeted social media campaigns result in youth being exposed to marketing messages several times a day. Also, some companies use a Facebook app that enables consumers to order products without having to leave the social media site, and these apps often offer special deals to Facebook users.

Many youth report that they are always on their smartphones, and they consider social media to be important for social interaction. Therefore, advertising on social media has the potential to reach youth 24 hours a day and target advertising to their lifestyles.

Television advertising

Although spending on television advertising is not growing at the rate it once was, television marketing remains a significant marketing tool for marketing food and beverages to youth, particularly soft drinks and fast food.

A range of promotional techniques are used in television advertising that targets youth, including offers or promotional giveaways, appearances or endorsements by celebrities, health and nutrition claims, and appeals to taste and fun. Many of these techniques are often used together.

Digital advertising

Advertising delivered to users on the internet is tailored either to the content that a user is viewing on a site or to characteristics and preferences of the individual user. The internet and apps on mobile devices are used by food manufacturers to promote their products to youth. The marketing techniques are similar to those used in television advertising (promoting fun, taste and nutrition); however, the methods are different. For example, many product websites present information about the product as educational material and others use games to advertise products. Many websites also encourage youth to sign up for special offers and alerts, which provides them with the opportunity to reinforce their brand via online alerts. Marketing companies are also using new neuro-marketing techniques, such as in-device cameras to record facial responses to marketing content, to tailor marketing to the individual.

Sponsorship and product placement

As with social media advertising, sponsorship and product placement constitute one form of advertising that has the potential to reach a wide target market while bypassing the existing television advertising regulations. For example, sponsorship of television programs that are popular among youth means they will be exposed to the brand several times during the program without the company having to run specific advertisements for products during these hours. Sponsorship of sporting teams and sporting events also means that youth are exposed to junk-food advertising throughout the duration of a game, not just during commercial breaks. For example, KFC sponsors the Big Bash and many unhealthy products have sponsored the AFL over the years, including Coca-Cola. Thanks to new technology, product placement is now able to be added after the filming of a program. This has been used in recent years, where an image of a product or brand name has been digitally inserted into a television program or reality show to promote a particular product such as a breakfast cereal or junk food.

Packaging

Food packaging is covered by the FSANZ Food Standards Code, but not by advertising codes. Food packages can influence the purchasing patterns of youth in Australia and their parents. Techniques such as using bright colours and appealing images to make youth believe the product will taste a certain way are commonly used, along with the inclusion of marketing messages to promote the product's taste, nutritional value or convenience. Other techniques can include using a celebrity endorsement or making reference to the nutritional value of a product by claiming that it is 'all natural' or 'healthy' without breaking specific rules outlined in the Food Standards Code.

ACTIVITY 5.7: MEDIA ANALYSIS, AFL SPONSORSHIP

Richmond Football Club sets benchmark for healthy sponsorship in AFL

Media release, Curtin University, 25 September 2019

The overwhelming majority of AFL clubs were sponsored by at least one company that promoted junk food, alcohol or gambling products during the 2019 AFL season, a review by the Curtin University-based Public Health Advocacy Institute of WA (PHAIWA) has found.

The review found that 17 of the 18 AFL clubs were sponsored by at least one 'red' sponsor, with six of the teams having unhealthy sponsors on their playing uniform. For the second year in a row, Richmond Football Club was the only AFL club that had zero 'red' or 'amber' sponsors.

The sponsors were classed on a traffic light system as 'red' or 'amber' depending on how much fat, sugar, salt and fibre was included in the product. Red sponsors also included companies that promoted alcohol and gambling.

Ms Julia Stafford, Research Fellow with the Alcohol Programs Team at PHAIWA, said the AFL sponsorship ladder highlighted a growing issue with alcohol advertising and unhealthy sponsorship promotion in Australian sport.

'AFL is a major part of the Australian lifestyle and we know hundreds of thousands of Australian kids watch AFL each year. It is concerning that alcohol, gambling and junk food companies are promoting their products during sports they know children and teenagers are watching,' Ms Stafford said.

'This review found that all but one of the AFL clubs were sponsored by an unhealthy sponsor and 16 of the clubs were sponsored by alcohol companies. Previous research has shown that exposure to alcohol marketing can have a significant impact on young people and the close connection between alcohol and sport is damaging.'

Ms Stafford said that it is important for Australian children to associate their sporting heroes with healthy behaviours, not junk food, alcohol, and gambling.

'As a supporting organisation of the End Alcohol Advertising in Sport campaign, we are calling on the federal government to phase out unhealthy sponsorship of sport, including alcohol,' Ms Stafford said.

Cancer Council WA's Director of Cancer Prevention and Research, Melissa Ledger, said it is disappointing how junk food companies have infiltrated every available advertising space, particularly through sports advertising and sponsorship.

'Cancer Council WA has recently called for all sectors, including sporting clubs, to help build environments that support health so it's great to see such leadership from an AFL club like Richmond and we would really like to see more clubs following their example,' Ms Ledger said.

'In WA we've seen elite sporting teams like Perth Glory, Perth Heat and West Coast Fever say no to unhealthy sponsorships, and we encourage our AFL teams to do the same.'

The Adelaide Crows Football Club came in at last place, while both the West Coast Eagles and the Fremantle Dockers were tied in ninth place after being sponsored by six 'red' category sponsors.

1 Consider the impact that sponsorship of sporting teams by junk food companies could have on youth. Use the examples discussed in Section 5.6 to explain the degree of the impact.

2 The media release mentions high sugar, salt and fat content. Explain how these factors contribute to youth health and wellbeing.

3 'We are calling on the federal government to phase out unhealthy sponsorship of sport, including alcohol.' To what extent do you agree with this statement?

ACTIVITY 5.8: FOOD MARKETING

1 Visit the Parents' Voice website and investigate the 'Fame and Shame' campaign.
   - **a** Watch some of the 'shamed' ads on YouTube. Identify the marketing strategies that are used to encourage youth to consume these products.
   - **b** Explain the food trend(s) being promoted.
   - **c** Outline how the food trends outlined in Question 1b can impact the health of youth.

FIGURE 5.13 Supermarkets offer a large range of products; this forces companies to find ways to stand out from their competitors.

2 Visit the Coca-Cola Australia website. Identify the marketing strategies used by Coca-Cola to target youth.
   - **a** Explain how these strategies aim to influence youth food trends. Outline the possible impact of these trends of the health of youth.

3 On YouTube, watch the video, 'Facebook friends', made by ABC TV's *The Checkout*.
   - **a** Explain the tactics that Facebook is using to market foods.
   - **b** Outline how these tactics might influence the eating behaviour of youth.

The 4Ps of marketing

The 4Ps are widely recognised marketing elements designed to increase the sales of a company's product(s). Marketing involves a range of strategies or activities that are designed to increase the number of sales of a product. The 4Ps are:

- product
- price
- promotion
- place.

Product

This refers to what the item being sold is all about. It refers to the actual features of the item or product, and how it might be different from other items on the market. In relation to food marketing, this would include the portion size, level of convenience offered, product packaging and branding. In Australia, there are rules and regulations about the claims that can be made about food products and the packaging of food products.

Price

This refers to the set prices for products or services. It can also refer to how you can use price as a marketing tool. Food manufacturers regularly reduce the size of products to avoid increasing the price, as the price point is seen as an important marketing tool. Setting a suitable price is important to ensure that the product is not only affordable and therefore competitive in the market, but also profitable. If a product or service costs more than consumers are willing

to spend, then work may need to be done to reduce the cost of the item.

Promotion

Refers to all the activities and methods used to promote the product or service and its benefits, such as television advertising, social media, brochures, giveaways, sponsorship, displays at trade shows or other industry events such as food and wine festivals, special deals or in-store advertising.

Place

Refers to how the product or service is delivered to customers; for example, physical location (in store or online).

The 4Ps model was developed many decades ago, when mass marketing first became widespread, and it continues to be used commonly in food marketing today. Since the original model was implemented, some versions of this model have added other Ps, such as people, process and packaging.

CASE STUDY: FOOD MARKETING

Nutrition Australia: Using the 4Ps in school canteens

4Ps: price, product, placement, and promotion

The key to being a successful GREENer canteen is understanding the 4Ps and letting everyone know you are there. It is no good taking the time and making the effort to make GREENer food if it is not chosen, purchased and eaten. Marketing is the key and it has been proven to increase profits!

Price. GREEN items should be priced competitively with AMBER and RED items. You should use a pricing policy to price your products. Use standardised serve and portion sizes to ensure accuracy of price.

Product. Have products that students want to buy. Ask students what new foods they would suggest for the menu. Also use plenty of colourful foods that are fresh and visually appealing (wrapping food in plastic and using clear containers helps).

Placement. This involves putting the GREENer foods you want to promote and sell at the front of the canteen, at eye level where they can easily be seen.

Promotion. Tell the school community – teachers, children and parents – what you have and get the children involved!

1. On YouTube, watch the video, 'How to have a healthy school canteen with Buckley Park College'.
2. Explain how Buckley Park College uses the 4Ps to promote healthy eating.
3. Think about your own school canteen. Does your school canteen meet any of the 4P recommendations? Complete the summary table below. Comment on your school canteen and what they are doing in this area, as well as the impact you think this has on what students choose to purchase.

	WHAT IS YOUR SCHOOL DOING?	HOW DOES THIS IMPACT ON WHAT STUDENTS CHOOSE TO PURCHASE?
Price		
Product		
Placement		
Promotion		

5.7 SOCIAL, CULTURAL AND POLITICAL FACTORS THAT ACT AS ENABLERS FOR, OR BARRIERS TO, HEALTHY EATING

What, how, where, when and how much people eat is influenced by a wide variety of factors. Some of these factors are **enablers**, having a positive impact on healthy eating, while others are barriers, with a negative impact on healthy eating. The term 'enabler' refers to something that can support or assist someone in doing something for themselves. In this way, enablers to healthy eating for youth are factors such as having knowledge, skills, access to information, family, time and money that can help youth to eat a healthy diet. The term 'barrier' refers to something that is an obstacle or hurdle that may prevent or make it more difficult for someone to achieve something. In this way, barriers to healthy eating in youth are factors such as a lack of money, poor skills, taste/habits or lack of knowledge that can prevent youth from eating a healthy diet.

enabler: A factor that can support or assist people in doing something for themselves; for example, having knowledge, skills, access to information, family, time and money.

AOS 2

Personal taste preferences represent a significant barrier to youth developing healthier eating practices. Most youth make their food choices based on the fact that they enjoy the taste of particular foods. Individuals who consistently consume a high-sugar, high-sodium and high-fat diet can find foods lower in these substances unpalatable and unsatisfying. Most youth find the thought of giving up their favourite foods quite overwhelming, and even with adequate knowledge, skills and support it can take a great deal of willpower to make these changes, representing a significant barrier to healthy eating in youth. Conversely, youth who may have been raised eating nutritionally dense, low-energy foods such as fresh fruit and vegetables are more likely to find these foods appealing. This can act as an enabler for healthy eating in youth.

In addition to personal factors such as taste preferences, a wide range of factors can act as barriers or enablers to healthy eating in youth, including social, cultural and political factors.

Family

Family can act as both an enabler and a barrier to healthy eating in youth. Dietary habits and choices can develop early and, as a result, parents have a significant influence on establishing the early eating patterns of their children, many of which will continue into youth. For example, in childhood food may have been used as a reward for good behaviour. This can act as a barrier to healthy eating for youth, as they may turn to these foods to reward themselves. There is strong evidence that children's intake of fruit, vegetables and energy-dense foods influences their intake in adolescence. This indicates that if the family can establish these positive dietary patterns early in life, it can have a positive impact on healthy eating in youth.

Parental attitudes also affect youth indirectly through the foods purchased for and served in the household, influencing family members' exposure to different foods, and their habits and preferences. If the parents purchase a high volume of processed foods, then youth may be more likely to eat these types of foods. The SES of parents may also influence the dietary habits of youth, as families with a higher SES typically consume more fruit and vegetables than those with lower SES.

Conversely, if the family tends to typically purchase and prepare fresh and healthy foods and consistently serves them in the family home, youth are more likely to consume these foods. Likewise, if the family teaches children from an early age about healthy eating and teaches them the skills they need to prepare healthy food, then youth are more prepared to be able to purchase, prepare and therefore consume these types of foods once they are responsible for their own food intake.

FIGURE 5.14 The social, cultural and political influences on food selection

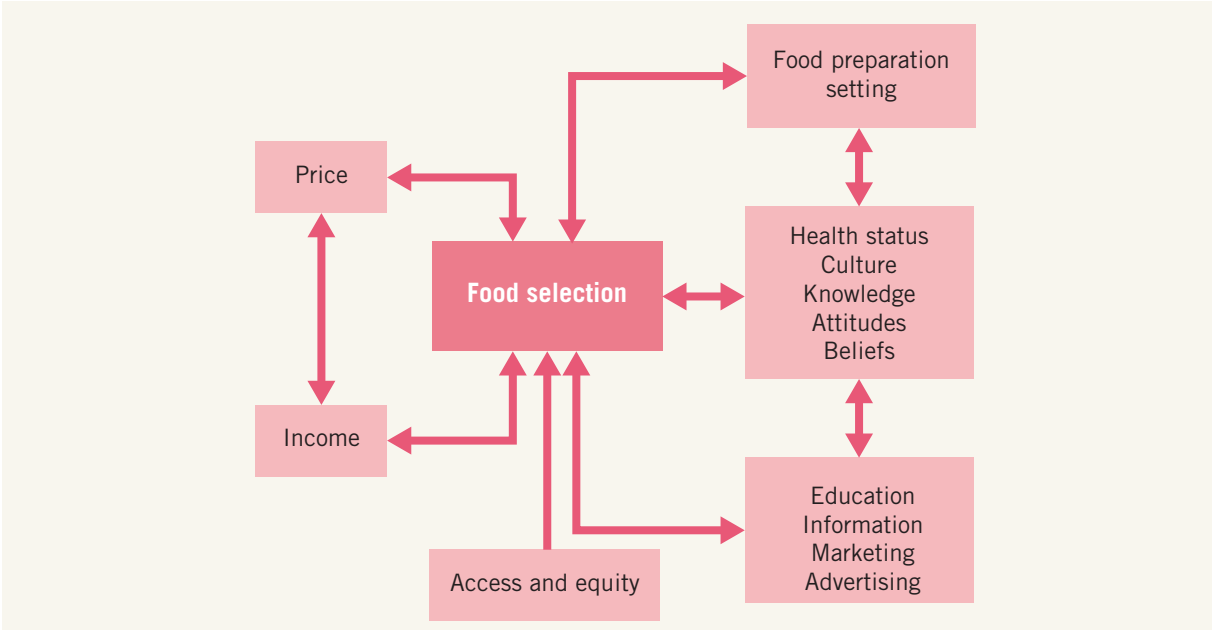


FIGURE 5.15 Major influences on food selection

FIGURE 5.16 A person's family and friends can influence their food choices.

AOS 2

Friends

Friends and peers have a particularly strong influence on the eating habits of youth. Like family, friends can act as enablers or barriers to healthy eating.

Sharing a meal with friends, school mates or colleagues during youth is a common activity, and friends can influence food intake and choices in a variety of ways. They can influence the amount of food young people eat – either more or less than they would normally consume, depending how much their friends eat. Friends can also influence the type of food youth eat, as when people share a meal it is often prepared outside the family home and may be for a specific social occasion. These types of meals shared in different social situations can be different from the food eaten when a person is alone or at home. If friends are motivated and educated to eat a healthy diet and choose to meet up and share a meal at a local salad bar, this can have a positive impact and act as an enabler for healthy eating during youth – at least in that particular moment. On the other hand, if friends decide to opt for the less expensive and convenient option of meeting at a fast-food outlet, that can act as a barrier to healthy eating for youth, given that these types of food outlets often offer few, if any, healthy options.

Media (including social media)

The term 'media' refers to any form of communication designed to reach a large audience to inform or influence behaviour, such as radio, television, newspapers, magazines, the internet and social media. As discussed earlier, it is important that youth evaluate the reliability of this information before using it as a basis for decisions about the food they eat. Some government media advertisements, such as LiveLighter®, can be informative, reliable and helpful. This campaign is designed to warn people about the build-up of harmful fat around their organs and the need to reduce sugar and saturated fat intake. This information alone can be helpful, but if young people access the associated website for further information, it can definitely make this form of media an enabler for healthy eating. On the other hand, marketing on social media is designed to appeal to youth and specifically target their interests. This form of media or advertising is typically used to sell a product (even if it appears to be an informative article) and can be misleading to youth. In this way, media can definitely act as a barrier to healthy eating in youth.

Education

Education is a factor that can act as an enabler or barrier to healthy eating in youth, as youth who are well informed and understand what it means to have a healthy diet are better able to make healthy choices.

For example, understanding the difference between the types of fats, and that saturated and trans fats can cause harm to the body and unsaturated fats can be beneficial, means that youth are able to make informed and healthier choices in regards to the amounts and types of fats they include in their diet.

A lack of education, and therefore knowledge, about nutrition and healthy eating can mean that youth are more influenced by media and the marketing of food, and are at greater risk of making ill-informed choices. For example, having minimal knowledge about the role of

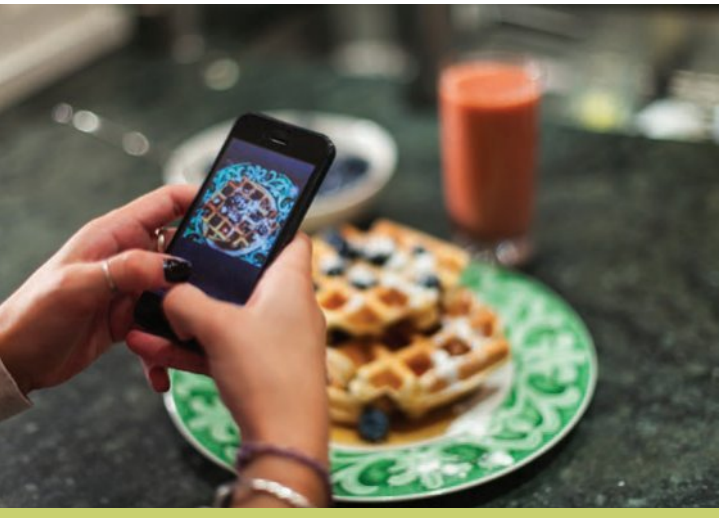


FIGURE 5.17 Bloggers and social media 'influencers' can influence our food choices.

fats in the diet may lead to youth avoiding foods containing fat altogether, and instead opting for 'low-fat' options. This can result in youth not getting any of the benefits that unsaturated fats can provide to the body and can lead to them eating a diet higher in simple carbohydrates, as many low-fat foods are loaded with extra sugar to increase their appeal.

Nutrition education in schools is important for supporting youth to develop sustainable, health-promoting eating behaviours and helping to empower them to make informed decisions. However, teaching students about nutritional recommendations alone is insufficient to bring about behaviour change. It is also important for young people in schools to explore their eating habits and the implications for their health.

Food-preparation classes are integral to teaching about food and nutrition, and students should be taught to prepare meals that are cost- and time-effective, nutritious and delicious. Food-preparation classes in schools can include practical education to improve the skills that youth have to enable them to prepare a range of healthy foods.

This can certainly act as a lifelong enabler to healthy eating, as it can help youth to address many of the other barriers relating to cost. If youth know how to prepare healthy food and have the skills to do so, then they are more able to produce a range of lower-cost healthier food options at home and avoid relying on more expensive convenience foods.

Employment

Employment brings with it the enabler of income (discussed later); however, it also can act as a barrier to healthy eating due to the loss of time available for food preparation. The employment of parents can also act as a barrier to healthy eating, as with both parents in the workforce, young people may not have the same opportunity as previous generations to develop their food-preparation skills.

It is widely acknowledged that there are generational differences in relation to the acquisition of food-preparation skills. Throughout the 1980s, there was a significant increase in the number of women in the workforce, which led to an increase in food products on supermarket shelves that were developed as convenience foods, such as frozen dinners or ready-made sauces, to meet market demand for meals that were quick and easy to prepare.

With more and more convenience foods available, people who rely on these foods may lack the skills required to prepare healthy homemade meals. In the past, these skills have often been passed from one generation to another. As women have returned to the workforce, they may have tended to use these skills less often and therefore have fewer opportunities to pass them on to their children. Youth are often juggling a mix of study and employment, which further reduces the time available for food preparation.

In this way, employment (through the loss of time to prepare food and the lack of time available to pass the skills of food preparation on from one generation to the next) can act as a barrier to healthy eating in youth. On the other hand, being employed does increase income, which can increase the opportunities for youth to purchase a wider range of healthy foods to prepare.

FIGURE 5.18 Convenience foods can be easier, but they are often less healthy than homemade meals.

Some workplaces may also aim to promote healthy eating by having a cafeteria with only healthy food options for employees. If this is the case, then employment can act as an enabler to healthy food selection.

Income

Like many other factors, income can act as both an enabler and a barrier. Having adequate income can mean that youth have the financial resources they need to purchase an adequate range of healthy food choices, such as fresh fruit and vegetables. Data indicate that low-income households spend less on vegetables and fruit compared with high-income households. The impact of income can also be closely linked to knowledge and skills. A low income can mean that youth may not be able to afford these foods, and may opt for more processed foods that appear to be less expensive. Without the appropriate knowledge of what healthier foods are, and without the skills to prepare foods from scratch, young people may not be able to prepare healthier and more nutritious options. According to the AIHW:

> Young people who are economically disadvantaged are at increased levels of ill health due to a range of factors. For example, limited availability and/or affordability of fresh fruit and vegetables. When considering economic disadvantage in youth biomedical factors must also be considered as major contributors to increased risk for ill health, for example higher levels of overweight and obesity.

Differences have been found between SES groups, particularly in regard to intake of energy, fat, sodium and simple sugars. People with a high SES are more likely to consume healthy foods such as wholegrains, low-fat dairy, fresh fruit and vegetables, fish and lean meat. People with a lower SES consume more foods containing refined grains and added fats. This is likely to be due to the fact that, while healthy food is often expensive, less healthy, highly processed options can be relatively cheap, as well as offering other appealing characteristics such as reducing the time needed for meal preparation. The food industry is able to produce low-cost, highly palatable, energy-dense foods in large portion sizes relatively cheaply; for example, high-starch options such as white bread and pasta instead of wholegrains, or higher-fat options such as processed meats instead of fresh, lean meats.

This is not the case for everyone, as sometimes a lack of money may mean people are more resourceful and go directly to farmers' markets to purchase fresh, local and seasonal produce that is not only less expensive, as it uses fewer **food miles**, but may have higher nutritional value as it is purchased and consumed closer to the time of harvest.

Having adequate financial resources can act as a barrier to healthy eating, as people can afford to eat out more and drink more alcohol. Affluence tends to be associated with a larger number of meals and snacks being consumed outside the family home. According to the AIHW, there are clear trends in weekly expenditure of discretionary foods in relation to income. Households with higher incomes spend a larger proportion of weekly income on eating out, fast foods and alcoholic beverages.

food miles: The distance that food is transported during the journey from producer to consumer.

Culture

Culture refers to the unique values, beliefs and practices shared by a group of people that can influence the behaviours of the people in the group.

For youth who grow up in a distinctive culture, this culture will inevitably influence their lifestyle, beliefs and even food intake. Food plays an important role in the lives of people from many different cultures. In some cultures, specific food items can have meaning attached to them. Other cultures may not have any real beliefs or customs relating to food.

Some cultural food traditions are more healthful and will act as an enabler for healthy eating for youth, while others can act as a barrier to healthy eating. For example, in some Asian cultures, dietary practices often include lower-fat foods and lots of vegetables, which can result in a healthier food intake and may play a significant role in reducing the risks for diseases such as type 2 diabetes mellitus and some cancers.

Breakfast is one meal of the day that is influenced by culture, and can act as either an enabler or barrier to healthy eating in youth, depending on the culture to which they belong. For example, in some Asian cultures it is common to have soup, congee or vegetables for breakfast, while in other cultures eggs and bacon are popular; pastries are common in some cultures, while in others a carbohydrate-rich cereal is more frequently eaten.

The cultural food practices of people who live in the Mediterranean may include high consumption of foods with minimal processing, such as seasonal vegetables and wholegrains, olive oil as the main fat, moderate amounts of dairy products and fresh fruit instead of sugary sweets for dessert. These cultural food practices can also act as enablers for healthy eating.

In other cultures, it is customary for a woman to give preference to feeding her husband or sons over herself or her daughters. This can result in nutritional deficiencies in adolescent girls, and can act as a barrier to healthy eating.

China
Rice and steamed buns

India
Dosa (pancakes made of rice and black gram) with chutney and tea

United States
Bacon, eggs, pancakes and orange juice

Brazil
Buns, butter, ham, cheese and coffee

Mexico
Huevos rancheros: fried eggs, salsa and tortillas

Russia
Syrniki: cottage cheese pancakes

FIGURE 5.19 Examples of the different breakfasts eaten around the world

Culture can also influence the ways in which individuals socialise. For example, in Australia it is common to 'meet for coffee' or 'come over for dinner'. Both of these social events are really about catching up with friends, but Australian culture typically links them with food.

Culture can also influence the way we celebrate milestones such as birthdays, weddings and graduations. Often these events are celebrated with food, and usually people tend to over-eat and eat more discretionary foods at these celebrations than they normally would. This can make such events a barrier to healthy eating for youth.

Religion

Religion and religious practices can also impact on healthy eating. Religion is often associated with specific celebrations or events such as Christmas or Easter in Christian religions.

Christmas for Christians is typically celebrated with a formal meal with the extended family. This type of celebratory meal can act as an enabler to healthy eating in youth if the meal served is nutritious; however, during these types of celebrations, people typically consume more discretionary foods than they ordinarily would, such as chocolate, desserts and alcohol. During these celebrations, people also tend to over-eat, and as a result such celebrations tend to act as barriers to healthy eating.

FIGURE 5.20 Christmas meals are often a barrier to healthy eating for Christians, due to the promotion of over-eating and the increased intake of discretionary foods and alcohol.

Another Christian religious celebration is Easter. Some Christians observe the religious practice of Lent for approximately six weeks beginning on Ash Wednesday. During this period, Christians may commit to fasting, may abstain from eating red meat or may give up certain luxury items. Easter celebrations then usually end with a family meal on Easter Sunday. Christians also tend to celebrate this occasion with the giving of chocolate eggs, which can act as a barrier to healthy eating.

Islam and Judaism are two other religions where food is integral to the celebration or observation of religious events. Muslims fast during Ramadan. During the Jewish festival of Hanukkah, it is traditional to eat potato cakes called latkes. Also, during the Jewish Passover holiday, it is customary to have a family meal and share matzoh (a flat, unleavened bread made with flour and water).

In addition to special religious celebrations, some religions also promote specific dietary rules or customs; for example, many Jewish people follow dietary laws referred to as a kosher diet, Muslims eat halal food, and followers of Buddhism and Hinduism are often vegetarians.

Taxation

The Australian Government is responsible for determining the taxation charges on food in Australia. The Goods and Services Tax (GST) is charged for certain foods. Foods that are considered to be essential foods (e.g. bread, plain milk, bottled water, infant formula, breakfast cereals, meat, fresh fruit and fresh vegetables) are exempt from the GST, making them less expensive. Foods for which the GST *is* charged include bakery items (e.g. cake and biscuits), ice-cream, soft drink, takeaway foods, food sold in restaurants, flavoured milk, chocolate and sports drinks.

In recent years, there has been significant debate about whether or not Australia should implement a 'sugar tax' similar to the tax the government has imposed on tobacco products. This would involve placing an additional tax

DISCUSS

1 Discuss whether you think a sugar tax would make you and/or your friends less likely to consume sugary drinks and snacks.
2 Discuss which stakeholders would be against a sugar tax.
3 Decide whether you agree or disagree with a sugar tax being implemented. Discuss your reasons.

on foods high in sugar, thus making them less affordable. The hope is that this would decrease the sale of these products and also encourage manufacturers to reduce the amount of sugar in certain products. There has also been discussion about having a junk food tax that would apply to all junk foods.

Supporters of these taxes suggest that the revenue from the tax should be used to subsidise healthy food and invest in health promotion. Currently, neither of these taxes is in place. If they were to be introduced, these taxes would have the potential to act as enablers to healthy eating in youth as they would make foods that are high in fat and sugar more expensive, and foods like fresh fruit and vegetables cheaper. Also, if the money raised from the taxes were reinvested into health promotion, it could improve youth understanding of healthy eating.

Policy

FSANZ is the government agency responsible for developing policy regarding to food standards and labelling in Australia. Policy can also happen at a state or local government level, and within different organisations. For example, schools may have a healthy eating policy that can act as an enabler to healthy eating in youth if the foods sold at the school are healthy, nourishing options and students are encouraged to bring only healthy foods to school.

Currently, the Australian Government has in place restrictions relating to advertising junk foods to children, as outlined in the *Protecting Children from Junk Food Advertising (Broadcasting and Telecommunications Amendment) Act 2011* (Cth). This Act outlines that between 6–9 am and between 4–9 pm, Monday to Friday inclusive; and between 6 am–12 pm and between 4–9 pm on Saturday, Sunday or a public holiday, television broadcasters must not broadcast any unhealthy food advertisements on a service primarily intended for or watched by children.

There have been many criticisms of this ban, including the fact that many older children and youth watch family programs that are not specifically children's programs, such as reality programs such as *Australia's Got Talent*, *The Voice*, *The Block*, *I'm a Celebrity Get Me Out of Here* and sporting programs. These programs are permitted to include junk food advertising, as they don't specifically target children. Many of these programs also include clever use of product placement and sponsorship so that these junk food messages are shared multiple times throughout the program and not just during commercial breaks.

There are calls in Australia to impose a total ban on junk food advertising in the same way as Australia placed a ban on advertising tobacco products.

Food security and availability

Food security is generally thought to have four dimensions:

- **food availability** – sufficient quantities of food are available on a consistent basis
- **food access** – sufficient resources are available to obtain appropriate foods for a nutritious diet

- **food use** – appropriate use, based on knowledge of basic nutrition and care, as well as adequate food preparation facilities
- **food stability** – stability of availability and access over time (AIHW, 2012).

If one or more of these four dimensions is non-existent for a person or family, then it is referred to as food insecurity.

Food insecurity can be considered to be a barrier to youth accessing a healthy diet, while food security can be considered to be an enabler. These dimensions of food security are significantly influenced by factors discussed previously, such as skills, knowledge and income, and may also be influenced by geographic location. This means that even youth who are considered to be food secure – meaning they have stable and adequate access to and availability of food – and who have appropriate skills and knowledge to allow them to use food properly, will not necessarily make healthy food choices.

Being food secure generally means that youth have more choices about the types of food they purchase and consume. For youth who take advantage of the stability, access and availability of food and use their skills and knowledge to use food well, food security is a significant enabler for healthy eating. For some youth who decide to eat out more often and who do not make healthy food choices, food security is not actually an enabler to a healthy diet.

FIGURE 5.21 Many schools encourage students to bring healthy lunches from home.

On the other hand, food insecurity can limit choices about food intake and often means that people will purchase more highly processed, inexpensive foods that require little preparation, such as instant noodles or potato chips. These are often energy-dense foods with low levels of valuable nutrients, and consuming them over the long term can lead to malnutrition. In this way, food insecurity is certainly a barrier to healthy eating.

Availability and access

Availability and accessibility are two aspects of food security that can each separately have an impact on healthy eating by youth. Having access and availability to a wide range of less healthy foods is a significant barrier to nutrition behaviours in youth, while availability and accessibility of healthy foods are enablers for healthy eating.

Schools and worksites can offer good opportunities to improve the availability of healthy foods if the food provided in these environments is healthy; for example, having only healthy foods available in school canteens, running school breakfast programs, banning soft drink vending machines in schools and having policies in school about the foods and treats that can be brought to school. These strategies will all work together to promote healthy eating in youth while they are at school. If only healthy foods are available, it can help to make healthy choices the easy choices for youth.

The availability of fresh health foods such as fresh fruit and vegetables in most urban areas in Australia is an enabler that makes it easier for youth to access these types of foods. However, in some very remote areas in Central Australia, where conditions are not conducive to growing fresh fruit and vegetables, these foods may be much harder to access or might be of poor quality if they are available, as they may have had to be transported over long distances. In this way, a lack of access can act as a barrier to healthy eating in youth.

ACTIVITY 5.9: FOOD FACTORS

1 On YouTube, watch Nutrition Australia's video, 'How we can make it easier to eat healthier'.

2 Go through your day and identify the factors that impact on your food selection.

3 Identify the factors listed in Question 2 that act as enablers and those that act as barriers to healthy eating.

4 Outline the steps that could be taken by you and the community to help address the factors that act as barriers to healthy eating in your life and assist you to eat a healthier diet.

ACTIVITY 5.10: MEDIA ANALYSIS – THE LATEST FACTORS CONTRIBUTING TO DIETARY BEHAVIOUR

Aussie spending big on fast food options

By Nick Hall, *Inside Business Franchise*, 4 September 2019

Australians now spend a third of their weekly food budget on fast food, a new report from insurance firm NobleOak has confirmed.

According to the results, the fast food budget has risen from 25 per cent of total spend in 1988, to 32 per cent in 2019.

Leading the revolutionary change is younger Australians, aged 18–34, who spend as much as 38 per cent of their weekly food budget on fast food, more than any other age group. Additionally, more than half of respondents admitted to eating less than one portion of fruit or vegetables per day.

While the statistics are critical of the nation's eating habits, the NobleOak report confirmed suspicions that the fast food industry has long held.

Fast food motivators

Driving the growing fast food spend are three key factors: convenience, ease and price. The report revealed that when it comes to dietary choices, convenience was the most significant aspect impacting choice, particularly among younger respondents.

Rachel Scoular, APD dietitian and nutritionist, said that based on the current consumer culture, the focus on convenience was unsurprising.

'I think the main contributor is convenience. Third-party ordering apps such as Menulog, Deliveroo and Uber Eats make it easier than ever to buy fast food within minutes,' she said.

'In the past, fast food and takeaway usually meant Chinese food and pizza, mainly ordered on weekends. However, with the arrival of such apps we are now spoilt for choice with fast-food options and accessibility, so we're now seeing higher consumption rates throughout the week and not just on weekends.'

Of Australians within the 18–34 age range, 68 per cent reported that they were most likely to favour options that were easy to purchase, 63 per cent favoured foods that were quick to cook and 61 per cent said price was a major contributor.

On the opposite end of the spectrum however, older Australians had a complete value reversal. In the 55 years and older age range, 62 per cent of respondents cited healthy options are their go-to, with 52 per cent opting for easy to purchase goods and 51 per cent favouring products low in fat.

Scoular said that while the consumption of fast food was steadily climbing among young people, a number of lifestyle factors had also played their part.

'I think there's a large difference in lifestyle between those aged 18–34 and their older counterparts. We are now working longer hours with longer commutes and have less time during the week for personal tasks such as cooking,' she said.

'There's also the influence and pressure of keeping up with the Joneses, driven mainly by social media. There's greater temptation to act on these impulses and purchase fast food now than in previous years.'

Evolving fast food landscape

The latest study comes less than a year after the National Health Survey revealed that more than two thirds of Australians are overweight or obese.

While the increase in fast food spending may indicate that figure will rise, some industry bodies believe it may open the door to new alternatives, particularly in the franchise sector.

IBISWorld Australia senior industry analyst, Bao Vuong, said a trend towards healthy options that offer convenience is steadily gaining traction, however it may soften sector growth.

'Rising consumer demand for nutritious fast food is projected to drive the Fast Food and Takeaway Food Services industry's revenue growth over the next five years,' Vuong said.

'However, continuing health consciousness trends will also hinder industry performance, especially for traditional operators, as consumers limit consumption of unhealthy food.'

Regardless of the developing health-conscious culture, Vuong said the fast food sector would continue to be a significant economic contributor, with operators offering convenience and health at an affordable price point likely to benefit.

'Revenue is forecast to grow at an annualised 0.5 per cent over the five years through 2023–2024, to $20.0 billion,' he said.

'The addition of premium menu options is anticipated to support industry revenue growth.'

1 Identify the different factors mentioned in the article that are barriers and enablers to healthy eating.
2 Select one of the barriers to healthy eating you identified in Question 1. Outline steps that could be taken by you and by the community to address this barrier.
3 Consider the convenience of ordering fast food via apps such as Uber Eats. Should the government consider introducing a tax to reduce the use of these apps?
4 Investigate a convenience option that is intended to be healthy, such as Dinnerly, HelloFresh or Marley Spoon. Decide whether you think this option can assist in improving the diet of Australians. Justify your opinion with evidence from your research.

ACTIVITY 5.11: A SUMMARY OF THE SOCIAL, CULTURAL AND POLITICAL FACTORS THAT ACT AS ENABLERS OR BARRIERS TO HEALTHY EATING

Create a mindmap of the social, cultural and political factors that act as enablers or barriers to healthy eating. Include the connections between different factors and the role of each as enablers and/or barriers to healthy eating.

CHAPTER SUMMARY

- The different food selection models include the:
  - Australian Guide to Healthy Eating
  - Healthy Eating Pyramid
  - Health Star Rating System.
- Other sources of nutrition information include:
  - food labels
  - food safety and nutrition agencies (e.g. Nutrition Australia, non-government agencies, Food Standards Australia and New Zealand)
  - media campaigns
  - food selection models
  - the internet
  - health professionals (e.g. general practitioners, dietitians and nutritionists)
  - family and friends
  - school.
- When assessing the reliability and validity of nutrition information, ask yourself the following questions:
  - Who is providing the advice?
  - What is the purpose of the advice?
  - How is the information supplied?
  - Where does the information come from?
  - When was the information written?
- There are many tactics used in the marketing of foods; these include:
  - using celebrities in advertisements
  - marketing foods on social media
  - marketing foods on television
  - using digital advertising
  - the packaging of the food
  - sponsorship and product placement
  - the 4Ps of marketing (product, price, promotion, place).
- The social, cultural and political factors that enable, or are a barrier to, healthy eating are:
  - family
  - media (including social media)
  - friends
  - education
  - employment
  - income
  - culture
  - religion
  - taxation
  - policy
  - food security and availability
  - availability and access.

KEY QUESTIONS

SUMMARY QUESTIONS

1 Describe the Australian Guide to Healthy Eating and explain how it can promote healthy eating among youth.
2 Describe the Health Star Rating System and explain how it can promote healthy eating among youth.
3 Describe the Healthy Eating Pyramid and explain how it can promote healthy eating among youth.
4 Identify and explain the benefits of three reliable sources of nutrition information for youth.
5 Identify and explain one source of nutrition information that you do not think is appropriate for youth.
6 Identify four steps that can be taken to assess the validity of nutrition information.
7 Outline three marketing techniques that are used to specifically promote junk foods to young people.
8 Outline the 4Ps marketing strategy.
9 Outline one example of a cultural, social and political factor that acts as an enabler for healthy eating.

EXTENDED-RESPONSE QUESTION

Overall, youth aged 14–18:

- fall short of meeting the recommended daily serves for all five food groups (based on average intake), and almost everyone does not meet the recommended serves of vegetables and dairy products and alternatives
- get 41% of their energy from discretionary foods
- get 13% of their energy from added sugars and 13% from saturated and trans fats (with the latter exceeding the 10% recommended limit)
- have an intake of sodium well above the level of adequate intake
- have a low prevalence of inadequate dietary folate equivalents and iodine intakes.

SOURCE: AIHW, 2018

QUESTION

Explain the role of two food selection models in promoting healthy eating and how these models may address the barriers to healthy eating experienced by many youth. (10 marks)

EXAMINATION PREPARATION QUESTIONS

Mitchell is a 15-year-old boy who wants to improve his food intake, so he is paying particular attention to the food he eats. He has been using the Health Star Rating System to help guide his purchases at the supermarket.

A Explain what the Health Star Rating System is and explain how Mitchell can use it to improve his eating habits. (4 marks)

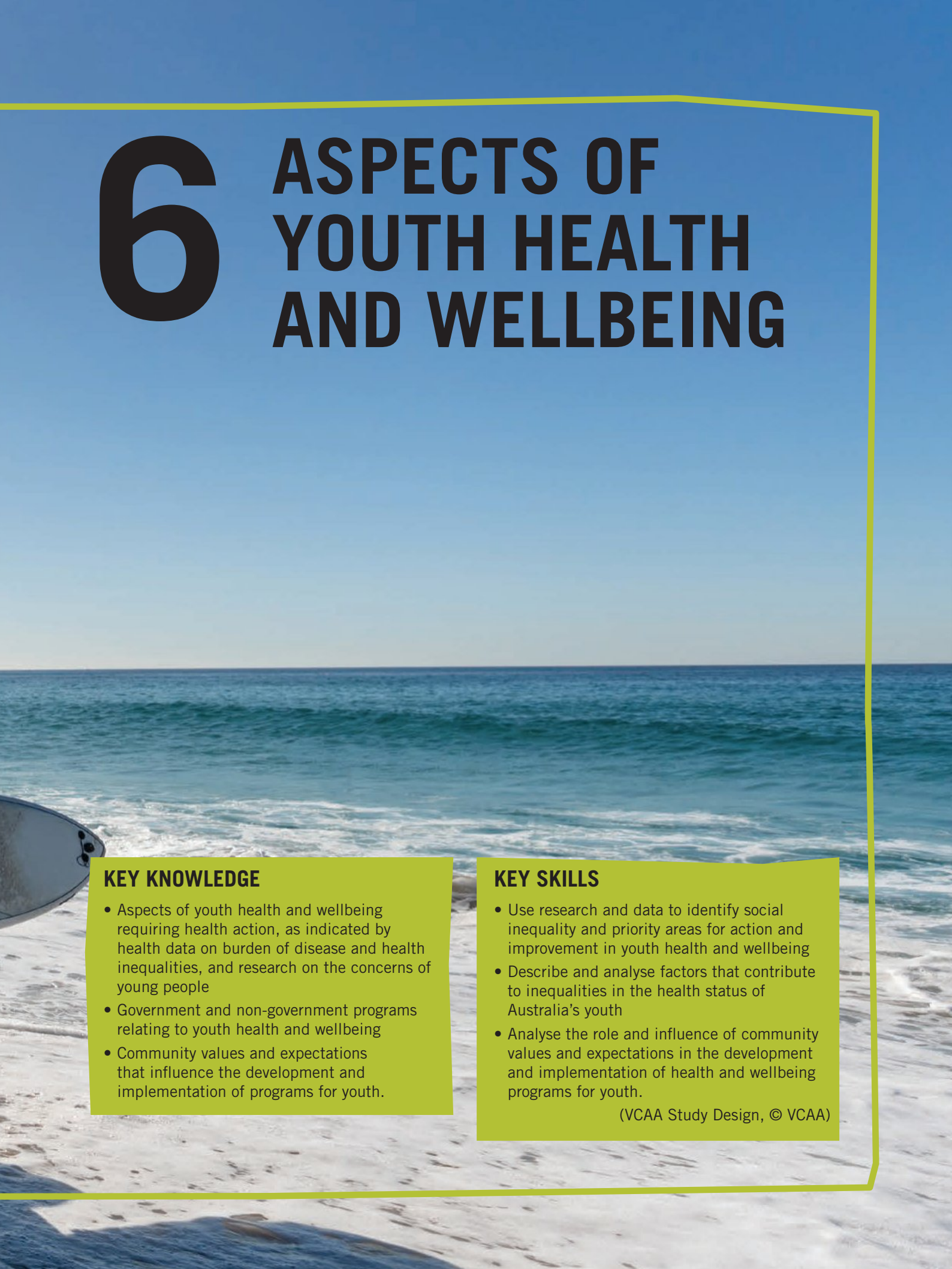
B Outline two factors that may act as enablers for Mitchell's food intake and explain how they may assist him to improve his eating habits. (4 marks)

C Outline one factor that may act as a barrier to Mitchell's food intake and explain how this factor may impact his eating habits. (2 marks)

D Other than the Health Star Rating System, identify one source of nutrition information that Mitchell could use to help him make healthy food choices. (2 marks)

E Identify two steps Mitchell could take to ensure the validity of nutrition information. (2 marks)

6 ASPECTS OF YOUTH HEALTH AND WELLBEING



KEY KNOWLEDGE

- Aspects of youth health and wellbeing requiring health action, as indicated by health data on burden of disease and health inequalities, and research on the concerns of young people
- Government and non-government programs relating to youth health and wellbeing
- Community values and expectations that influence the development and implementation of programs for youth.

KEY SKILLS

- Use research and data to identify social inequality and priority areas for action and improvement in youth health and wellbeing
- Describe and analyse factors that contribute to inequalities in the health status of Australia's youth
- Analyse the role and influence of community values and expectations in the development and implementation of health and wellbeing programs for youth.

INTRODUCTION

In Chapter 2, you learned about the health status of Australia's youth and gained an understanding of the health issues that need to be addressed to improve the health and wellbeing of young people in Australia. The health issues experienced by youth are often different from the health issues faced by adults, children, and the overall population.

Although many health promotion campaigns focus on the health of all Australians, there are some campaigns that directly target young adults, as young people also need to take action to safeguard their health. These campaigns are developed by government and non-government organisations and aim to respond to the needs of young people; although, such campaigns are often strongly influenced by community values and expectations, which are driven by adults.

There is no doubt that young people need to take action to protect their health. However, what also must be addressed are the factors that contribute to the inequalities in the health status of Australian youth. Such inequalities must be rectified to support optimal youth health and wellbeing.

This chapter focuses on some of the aspects of youth health and wellbeing that require action. In Chapter 3, you learned about a range of factors that contribute to health status. You will need to reflect on these factors and consider their impact on health inequalities experienced by youth to fully understand the various aspects of youth health and wellbeing. The information in this chapter provides an insight into, rather than a detailed analysis of, some of the aspects of youth health and wellbeing.

AOS 3

What you need to know

- The aspects of youth health and wellbeing that require action.
- Which factors contribute to health inequalities.
- A range of government and non-government programs that relate to youth health and wellbeing.
- The community values and expectations that influence the development and implementation of programs aimed at improving youth health.

What you need to be able to do

- Interpret data to identify social inequality and identify the areas where action can be taken to improve the health and wellbeing of Australian youth.
- Describe and analyse factors that contribute to inequalities in the health status of youth in Australia.
- Analyse how community values and expectations influence the development and implementation of health and wellbeing programs for youth.

6.1 ASPECTS OF YOUTH HEALTH AND WELLBEING REQUIRING HEALTH ACTION

Throughout the study of VCE Health and Human Development, specifically in Chapter 2, it has become apparent from research and self-assessed health status data that not all youth experience the same level of health and wellbeing. It is during this stage of the lifespan that various positive and negative risk factors can emerge which can ultimately impact youth health and wellbeing and the health outcomes experienced throughout life. In order to respond to the health needs of youth, access to quality health services and programs is required. Governments, medical and health-promotion practitioners, and the education system need to recognise and understand the issues, including inequalities, that exist in relation to youth health and wellbeing and the type of **health action** required as a response.

In order to respond to youth health needs, key stakeholders must identify, prioritise and action areas, strategies and programs for improvement. The data used by government and community organisations includes measures of health indicators such as burden of disease as well as research related to the concerns of young people. Addressing health concerns and choices during this lifespan stage can have a significant impact on the quality of life for young people. According to the World Health Organization (WHO), not only is youth a period of life when people are particularly vulnerable to certain health issues, it is also a time when critical behaviours are shaped that will affect health in the future. Quality health services and programs targeted to the concerns of youth are also economically and socially more effective than having to manage and endure health problems as an adult.

EXTENSION QUESTION 6.1

SOURCE: WHO

FIGURE 6.1 Healthy behaviours that start in adolescence make healthy adults.

Using the WHO infographic in Figure 6.1, list the aspects of youth health and wellbeing that you think require action. Justify your response.

6.2 FACTORS CONTRIBUTING TO INEQUALITIES IN HEALTH AND WELLBEING AND HEALTH STATUS OF YOUTH

The burden of disease data for youth analysed in Chapter 2 highlighted areas of health inequalities for youth. According to the World Health Organization (WHO), **health inequalities** are the differences in health status or the difference in the distribution of health determinants (factors) between different population groups. For example, differences in mobility between elderly people and young people or differences in mortality rates

health action: The focus on and action of changing behaviours to become health-promoting behaviours.

health inequalities: The differences in health status or the differences in the distribution of health determinants (factors) between different population groups (WHO).

between people from different socioeconomic status groups.

Health inequalities are avoidable inequalities in health between groups of people and can be a result of some people having better opportunities than others. In relation to youth, some youth experience better opportunities for optimal health outcomes than other youth. Youth that may experience an unfair situation and consequently health inequalities include Aboriginal and/or Torres Strait Islanders, males, those from families who speak a language other than English and lower socioeconomic status groups.

In addition, some stages of the lifespan can experience better health outcomes than the youth stage.

Inequalities in the level of health experienced by youth, or various population groups, that are a result of differences in sociocultural factors are referred to as social inequalities. Social inequalities in relation to health outcomes apply to virtually all diseases, injuries and disorders. Figure 6.2 identifies a range of factors that can contribute to health inequalities experienced during the youth stage of the lifespan.

AOS 3

FIGURE 6.2 There are a range of factors that can contribute to inequalities in youth health status.

EXTENSION QUESTION 6.2

1 Use data from Chapter 2 (such as Table 2.4 and Figures 2.18, 2.21, 2.23 and 2.24) to identify inequalities in health status between Indigenous and non-Indigenous youth, and male and female youth.

2 Select two factors from Figure 6.2 and explain how each may contribute to the inequalities in health status.

Responding to research on the concerns of youth: youth health and wellbeing issues requiring action

Every year, Mission Australia conducts a youth survey and publishes a *Youth Survey Report*. In the survey, Australians aged 15–19 years are encouraged to voice their concerns about youth issues. This is Australia's largest youth survey and it provides research data on the concerns on young people. It also provides an insight into the hopes, fears and ambitions that youth have for themselves, their communities and Australia more broadly. This data helps governments and non-government organisations understand the aspects of youth health and wellbeing requiring health action.

DISCUSS

What do you believe are the top five health issues contributing to the inequalities in youth health status? Compare your top five health issues with another student and discuss the similarities and differences in the health issues identified. Identify factors that may lead to health inequalities in youth health status.

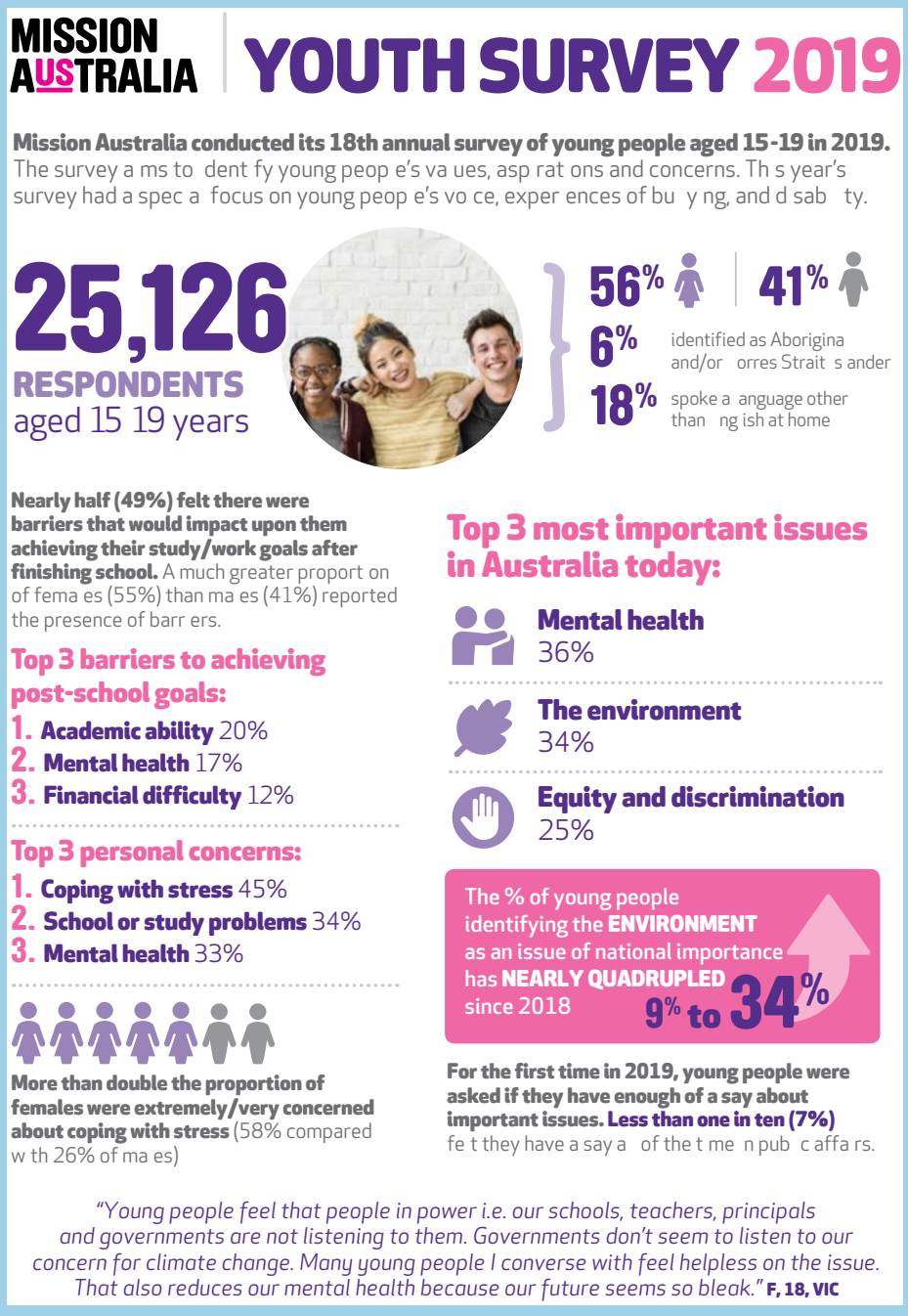
ACTIVITY 6.1: ANALYSING MISSION AUSTRALIA'S SURVEY RESULTS

Refer to Figure 6.3 and then visit Mission Australia's website and download the full *Youth Survey Report 2019* to answer the following questions.

1 What was the issue that young people identified as being of national importance that has almost quadrupled since 2018? Use data to support your answer.

2 In their youth survey, Mission Australia asked young people whether they 'felt there were barriers that may impact upon them finding work and moving out of home'. Identify two barriers to finding work and moving out of home that are related to social inequality.

3 Using the data in Mission Australia's *Youth Survey Report 2019*, identify aspects of youth health and wellbeing that are priority areas for action. Suggest strategies that could be taken by government and non-government organisations to address these priority areas.



SOURCE: Mission Australia, 2019

FIGURE 6.3 Information from Mission Australia's *Youth Survey Report 2019*

4 Identify one of the top three personal concerns in Mission Australia's *Youth Survey Report 2019* and describe three factors that could be contributing to the concern about youth health and wellbeing.

5 Explain why the data collected annually by Mission Australia is useful and should be considered when addressing youth health and wellbeing.

AOS 3

Youth health issues

Aspects of youth health and wellbeing requiring action include:

- alcohol misuse
- illicit drug use
- sexual and reproductive health
- weight issues
- mental health issues
- body image
- injury
- smoking
- suicide
- bullying
- food allergies.

This chapter outlines five of the aspects of youth health and wellbeing requiring action. This is to assist you to select your own aspect of youth health and wellbeing to research in more detail (see Chapter 7).

Drug use

Drug use – including alcohol consumption and use of illicit drugs – is a serious challenge in relation to youth health and wellbeing. Drug use by youth requires health action. It is not uncommon for individuals to experiment and use different forms of drugs, which can cause serious short-term and long-term effects. Mission Australia's *Youth Survey Report 2019* identified drug and alcohol use as one of the issues of personal concern for Australian youth today.

FIGURE 6.4 In the youth stage of the lifespan, many young people engage in risk-taking behaviour such as consuming alcohol.

Alcohol use

Alcohol is the drug most commonly reported as causing the most drug-related injury and deaths. Alcohol-related harm can be experienced by both the drinker and non-drinker therefore having a significant impact on the whole community.

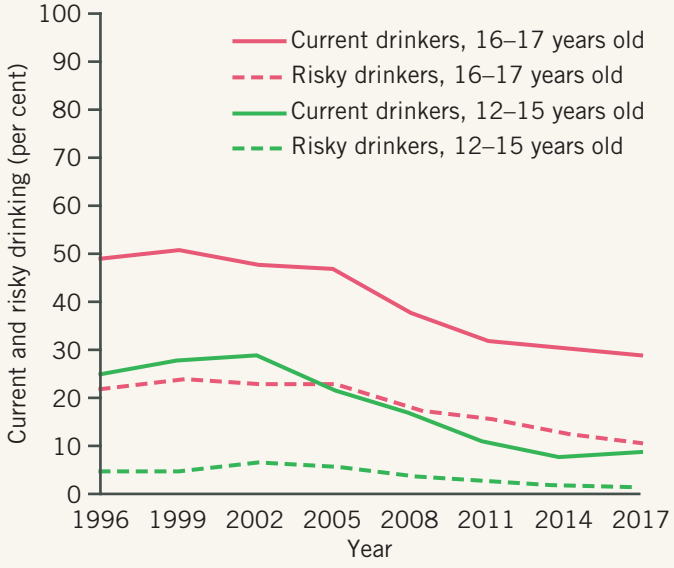
Despite laws prohibiting alcohol provision until the age of 18 and health professionals recommending delaying consumption of alcohol until early adulthood when the brain is fully developed, alcohol use often occurs during the youth stage of the lifespan. Youth often consume alcohol in excessive amounts on a single occasion, known as binge drinking.

The consequences of alcohol consumption are many and varied and include reduced alertness, impaired judgment, nausea, vomiting and loss of consciousness, increased rates of falls, violence, risky sexual behaviour, self-harm, mental illness and motor vehicle accidents. As the brain is continuing to develop, memory, verbal skills, learning capacity and emotional stability may be impacted due to alcohol consumption during this stage. Also, the risk of alcohol dependency and related conditions in adulthood are increased.

However current research is providing some good news. According to the 2016 National Drug Strategy Household Survey, fewer 12–17-year-olds were drinking alcohol and the proportion abstaining from alcohol significantly increased from 2013 to 2016 (from 72 per cent to 82 per cent).

Also, people aged 14–24 continued to delay starting drinking – the age of first alcohol consumption increased since 1998 from 14.4 to 16.1 years in 2016 (significant increase from 15.7 years in 2013).

The recent Alcohol, Tobacco and Other Drugs in Australia report (AIHW, September 2019) also support these findings and reported that young males aged 15–24 experience greater burden of disease due to alcohol than young females as can be seen in Figure 6.7.



SOURCE: Cancer Council Victoria, ASSAD 2017: Trends in Substance Use among Secondary School Students 1996–2017, published May 2019

FIGURE 6.5 Percentage of Australian secondary students who were current drinkers (drank alcohol at least once in the past week) and risky drinkers (consumed five or more drinks in one sitting), 1996–2017

AOS 3

The report, *Trends in Substance Use among Australian Secondary School Students 1996–2017*, found that overall, drinking prevalence in secondary school students had declined; specifically, risky drinking (i.e. binge drinking) was lower for older males and females in 2017 than in 2011. This suggests that the older students who did consume alcohol in 2017 consumed less than the older students in 2011. This can be seen Figure 6.5.

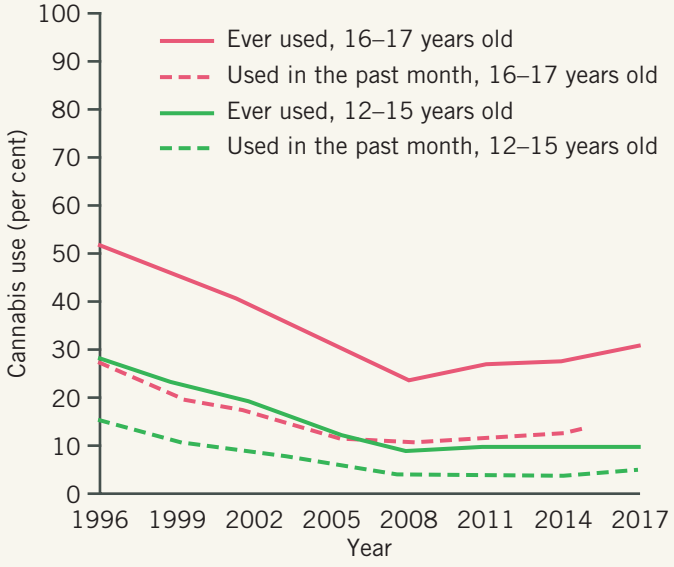
Illicit drug use

According to the AIHW, illicit drug use includes use of illegal drugs, non-medical use of pharmaceutical drugs (an illicit behaviour), and inappropriate use of other substances (such as inhalants) (AIHW, 2017).

The experimental use of illicit drugs during youth can lead to addiction, the misuse of other illicit drugs and continued misuse into adulthood. The short-term and long-term effects on health and wellbeing due to illicit drug use can vary from person to person due to a variety of factors such as the amount and type of drug used, body size and a person's general health. However, it is important to remember batches of the same type of drug can vary in strength and quality and in fact, the single use of an illicit drug, such as consuming one ecstasy tablet, may lead to addiction, ongoing serious health problems and even death.

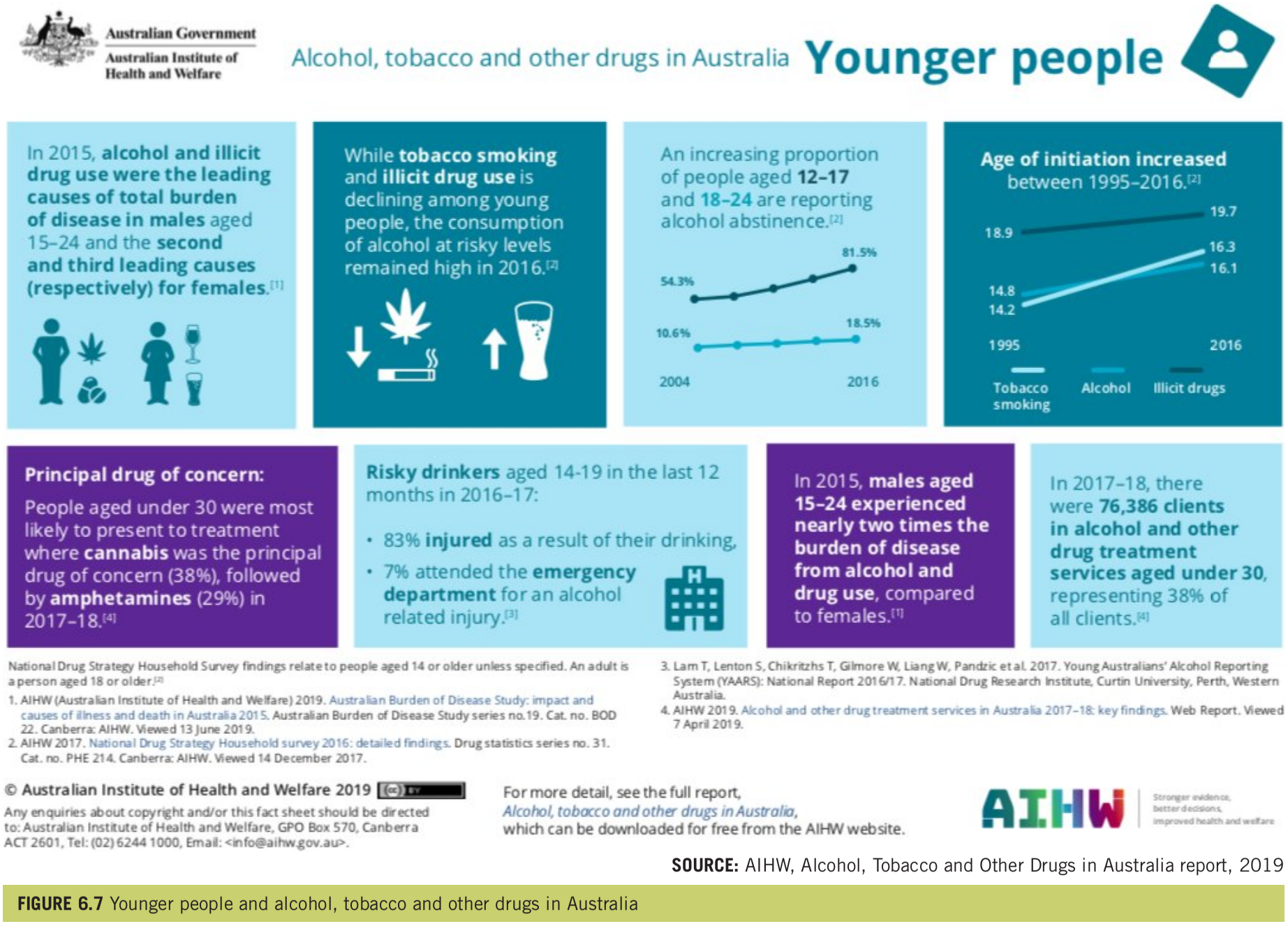
The use of illicit drugs is associated with many negative physiological and psychologically effects including mental health disorders such as depression, damage to body organs such as liver and brain, sleeplessness and injury. Other consequences of illicit use of drugs includes damage to relationships with family and friends, increased risk-taking behaviour, social isolation, violence and homelessness. The reasons leading to the use of illicit drugs by youth also varies between individuals and the reasons are often complex and arise from a culmination of life events and circumstances.

According to the AIHW report, *Alcohol, Tobacco and Other Drugs in Australia* (2019), among students aged 12–17, cannabis was the most commonly used illicit substance in 2017 (see Figure 6.6 for cannabis usage trends among youth).



SOURCE: Cancer Council Victoria, ASSAD 2017: Trends in Substance Use among Secondary School Students 1996–2017, published May 2019

FIGURE 6.6 Percentage of Australian secondary students who used cannabis, 1996–2017. In general, cannabis use has declined from the late 1990s, but from 2014 to 2017, use increased slightly.



SOURCE: AIHW, Alcohol, Tobacco and Other Drugs in Australia report, 2019

FIGURE 6.7 Younger people and alcohol, tobacco and other drugs in Australia

According to the *Australian Secondary School Students Alcohol and Drug (ASSAD) Survey 2017*:

- the use of illicit drugs, other than cannabis, was uncommon among Australia's secondary school students
- cannabis continues to be the most commonly used illicit substance by students – 15 per cent of students aged 12–17 years reported they had used cannabis, while 8 per cent reported they had used cannabis in the past year
- of the 15 per cent of students who had used cannabis, regular use was more common among older than younger students (10 per cent of 12-year-olds and 37 per cent of 17-year-olds reported they had used the drug)
- 83 per cent of students aged 12–17 reported they had never used cannabis
- ecstasy continues to be the second most commonly used illicit substance by students – 5 per cent of 12–17-year-olds reported they had used ecstasy in the past year
- 94 per cent of students aged 12–17 reported they had never used ecstasy
- male students were more likely than female students to have used ecstasy and cannabis.

SOURCE: Australian Government Department of Health, 2017

AOS 3

Sexual and reproductive health

Sexual development is a fundamental aspect of youth health and wellbeing. According to the World Health Organization, **sexual health and wellbeing** is a state of physical, mental and social wellbeing in relation to sexuality. It requires having a positive and respectful approach to sexuality and sexual relationships, which includes respecting the sexual rights we all share. Sexual health and wellbeing also involves the possibility of having positive and safe sexual experiences that are free of coercion, discrimination and violence.

sexual health and wellbeing: Is a state of physical, mental and social well-being in relation to sexuality.

reproductive health and wellbeing: The state of complete physical, mental and social wellbeing, and not merely the absence of disease or infirmity, in all matters related to the reproductive system and to its functions and processes.

Having the capacity to enjoy and manage sexual reproductive behaviour in accordance with social and personal ethics is important to all dimensions of health and wellbeing. Being sexually healthy is recognising that sexuality is a natural part of life and involves more than sexual behaviour.

During youth, issues related to sexual health can occur. These issues include sexual identity and orientation, **reproductive health and wellbeing**, sexting and sexually transmitted infections. It is vital for young people to understand these issues as they begin to face new challenges, choices and situations in relation to this aspect of health and wellbeing.

A major sexual and reproductive health and wellbeing issue for youth is the prevention of sexually transmitted infections (STIs). Young people aged 15–29 years have been identified as having the highest notification rates for chlamydia, and this has increased five-fold since 1998. Young women aged 15–19 years of age are more likely to be diagnosed than young men in this particular age group for gonorrhoea. Young people are over-represented in these significantly increasing STI rates. This is a public health concern, contributing to significant long-term morbidity. The concern with chlamydia is that this condition often displays no symptoms, so the condition is transferred by individuals who believe they are free of STIs. Chlamydia in females can develop into infections of the

FIGURE 6.8 According to Australia's Health 2020 a large proportion of students (79 per cent) had accessed the internet to find answers to sexual health information, but the most trusted sources of information were: GPs (89 per cent), followed by mothers (60 per cent) and community health services (55 per cent) (Fisher et al. 2019).

cervix, pelvis and uterus, and complications can result in chronic pelvic pain, ectopic pregnancy and **infertility**. For males, the testes, urethra and prostate can be affected.

Access to healthcare is an issue faced by young people and is a factor contributing to the inequalities experienced. Young people must feel comfortable about seeking support from health services and need to have access to the appropriate services to discuss sexual and reproductive health. But for many young people, community expectations and values often result in embarrassment about seeking support from doctors and support services, as being sexually active is not often a topic that is discussed openly. It is critical for action to take place to ensure that young people feel comfortable engaging with supportive healthcare, and that they have access to sexual health services and GPs, who are often the first people a young person will seek out regarding sexual and reproductive health.

infertility: The inability to conceive a pregnancy after 12 months or more of regular unprotected sexual intercourse.

The prevention of STIs is intrinsically linked with knowledge about these infections, how they are transmitted, effective methods of protection and resources for obtaining protection. Young people who do not have this knowledge, use condoms inconsistently and lack communication and negotiation skills are at greater risk of contracting an STI.

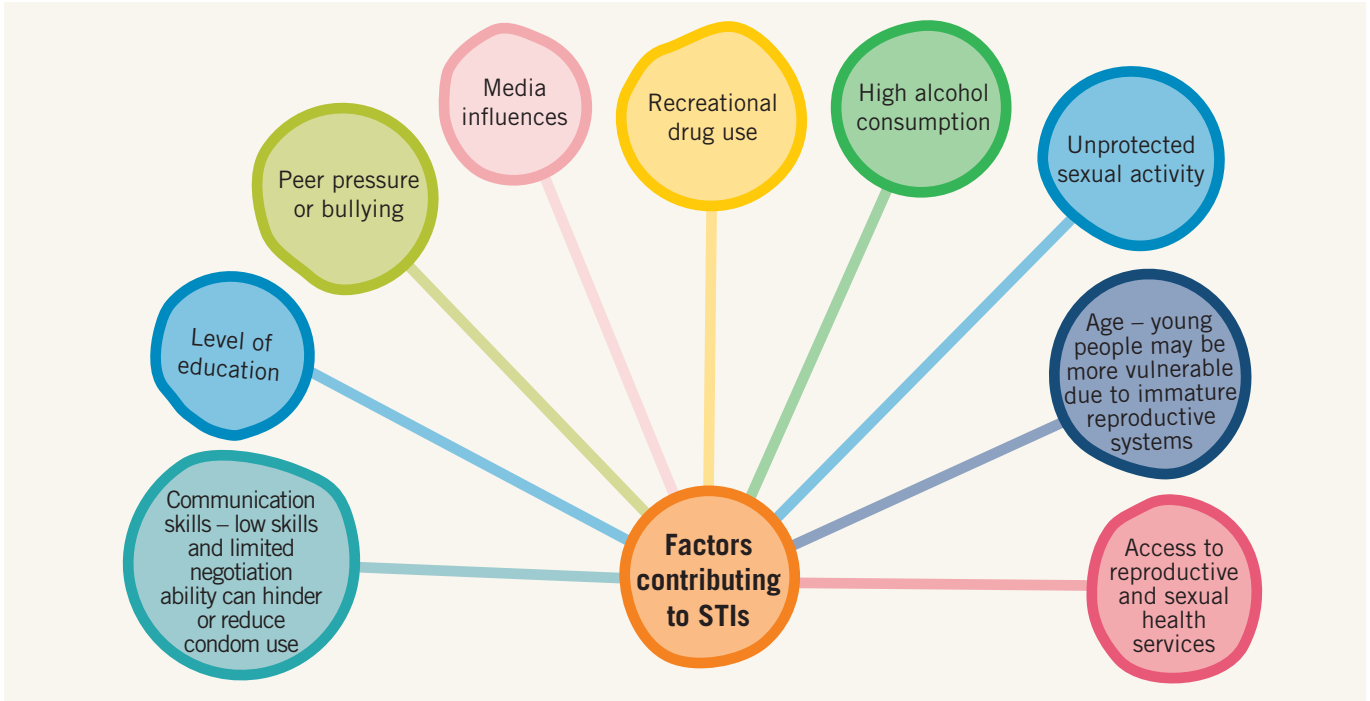


FIGURE 6.9 A range of factors can contribute to the incidence of STIs among young people. In 2018, the sixth National Survey of Australian Secondary Students and Sexual Health found: most sexually active students reported that they had discussed having sex (81 per cent) and protecting their sexual health (77 per cent) prior to sex, and were using condoms (57 per cent) and/or oral contraception (41 per cent) (AIHW Australia's Health 2020).

EXTENSION QUESTION 6.3

Improving access to contraception, counselling and confidential health services, particularly in rural and remote areas, will help to address youth sexual and reproductive health issues.

Identify a factor that could lead to the inequalities in health status experienced by youth in relation to sexual health.

EXTENSION QUESTION 6.4

A strong relationship with parents, open communication with sexual partners, and a connection to school are all factors that contribute to young people *not* participating in unsafe or unwanted sexual practices. To what extent do you agree with this statement?

Barriers to healthcare must be addressed for improvements to occur in youth sexual and reproductive health and wellbeing. This can include addressing:

- location and operating hours of appropriate clinics
- attitudes of service providers
- quality of service
- confidentiality and privacy
- gender of service providers (many young women prefer to see female practitioners)
- cost of health services
- the degree to which the service is focused on youth.

Weight issues

In 2017–18, 1.2 million children and adolescents aged 2–17 in Australia, an estimated 1 in 4 (25%), were overweight or obese. Of all children and adolescents aged 2–17, 17% were overweight but not obese, and 8.2% were obese. Rates varied across age groups, but were similar for males and females (ABS 2018). These numbers are expected to continue to increase given data has been increasing over time.

Youth obesity is associated with short-term health issues such as increased risk of asthma, sleep apnoea, orthopaedic problems, and impaired mental health and wellbeing. Long-term concerns include a higher chance of premature death and chronic diseases in adulthood, including obesity, type 2 diabetes mellitus, cardiovascular disease and some cancers. Social concerns such as bullying and low self-esteem are also associated with weight issues.

While genetics may be a contributing factor, becoming overweight takes time, due to an over-consumption of energy-dense foods with an imbalance of physical activity. Obesity is also influenced by the community youth live in as it can affect the ability to make healthy choices.

Research also suggests that socioeconomically disadvantaged young people are more likely to be overweight; one reason for this could be the lifestyle and behaviours learned from their parents. As a nation, Australians are living increasingly sedentary lifestyles. Young people are also less likely to participate in physical activity if their parents do not have positive healthy behaviours themselves.

Mental health issues

As discussed in Chapter 1, mental health and wellbeing relates to the current state of the mind or brain and is dependent on how well a person can function where their thoughts and behaviours are concerned. Stress is a normal reaction to situations where we feel under pressure; it is the 'flight or fight' instinct for survival and some stress is needed for optimal performance. However, it is having the ability to control our response to stress that can impact mental health. According to the World Health Organization, mental health is 'a state of wellbeing in which every individual realises his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community'.

Mental health and wellbeing is dynamic and constantly changing. Individuals can move from feeling good and dealing effectively with stressors of life to extended periods of stress when situations change and new or ongoing challenges arise, which can lead to the development of conditions such as anxiety and depression. Due to this dynamic nature, mental health is often thought of as a continuum where at one end of the spectrum feeling good and functioning well is represented, while mental health disorders (or mental illness) that negatively affect people's feelings, thoughts or behaviour are at the other end.

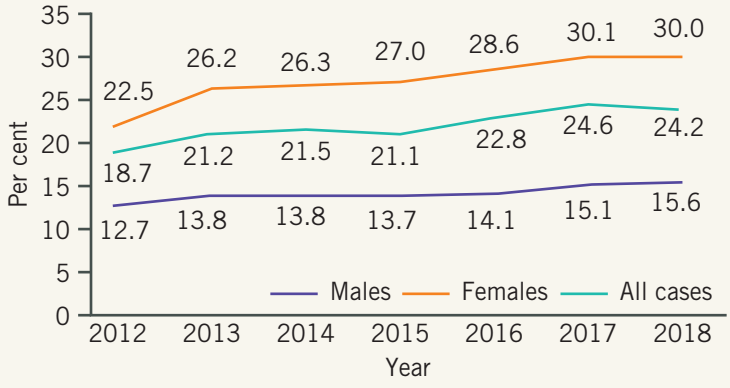
Youth experiencing positive mental health and wellbeing are also likely to experience greater connection and engagement with school, increased learning and productivity, more positive social relationships, and stronger network of friendships and connections to family and demonstrate more pro-social behaviour. With improved mental health comes improved physical health as symptoms of stress and mental illness that can have negative impact on the function of the body and its systems are reduced. In contrast, mental health conditions can cause distress, reduce a person's normal day-to-day functioning and their ability to complete daily tasks such as attending school. As a result, youth may withdraw from relationships and friendships, and experience poor physical health such as high blood pressure and fatigue. Mental health conditions can also result in self-harm and premature death from suicide.

Mission Australia's *Seven Year Youth Mental Health Report 2012–18* reveals that the number of adolescents aged 15–19 experiencing psychological distress continues to rise each year. Also, the likelihood of experiencing poor mental health increases as adolescents approach the late teens.

Youth is a critical time for mental health as it is often during this stage of the lifespan that people will be diagnosed with a mental health disorder such as depression or anxiety. According to Beyond Blue, one in four young people experiences a mental health condition. Also, half of all mental health conditions emerge by the age of 14, and three quarters by age 24 (Beyond Blue, 2019).

Young people are less likely than any other age group to seek professional help. Only 31 per cent of young women and 13 per cent of young men with mental health problems had sought any professional help.

The burden of disease due to serious mental illness has been found to be borne more heavily by young females than young males. Aboriginal and Torres Strait Islander young people are also more likely to meet the criteria for a mental illness than their non-Indigenous peers. Other factors such as gender and discrimination based on race can reduce mental health and particularly for women, the ideals of appearance and body image can also impact mental health outcomes.



SOURCE: Mission Australia, Seven Year Youth Mental Health Report 2012–18

FIGURE 6.10 Psychological distress in young people aged 15–19 years, by gender, 2012–18. Females experienced higher psychological distress across the seven-year period (2012–18) than males.

EXTENSION QUESTION 6.5

TABLE 6.1 Barriers that may prevent young people aged 15–19 with psychological distress from getting the help they need, by gender, 2018

BARRIERS TO GETTING HELP FOR PSYCHOLOGICAL DISTRESS	FEMALES %	MALES %
Stigma and embarassment	39.4	33.2
Fear	31.3	19.7
Lack of support	28.6	24.1
Lack of confidence	20.7	20.6
Accessibility	19.3	13.0
Knowledge about services and available help	13.0	8.7
Mental health	10.1	14.1
Problems recognising symptoms	13.1	8.2
Other responsibilities	10.6	10.3
Discrimination/punishment	9.3	12.3
Confidentiality and trust	11.3	7.2
Preference for self-reliance	6.5	6.8
Others not recognising the need for help	5.3	3.8
Other	4.1	5.2
Hopelessness	4.7	2.9

SOURCE: Mission Australia, Seven Year Youth Mental Health Report 2012–18

Select two barriers from Table 6.1 above and discuss how each could be addressed so that youth are more likely to seek support when suffering from a mental health issue.

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ACTIVITY 6.2: FACTORS CONTRIBUTING TO INEQUALITIES IN THE HEALTH STATUS OF YOUTH

There a number of factors that contribute to the inequalities in the health status of young people.

1 Select one of the following aspects of youth health and wellbeing that require health action: alcohol misuse, illicit drug misuse, sexual and reproductive health, weight issues, and mental health issues.

2 Describe the possible impact of each of the factors listed below on the issue selected in Question 1:

- **a** access to health information and support services
- **b** education
- **c** family
- **d** income
- **e** peer group
- **f** culture
- **g** gender.

3 Rank the seven factors listed in Question 2 from those that make the strongest contribution to those that make the least contribution to health status in youth.

ACTIVITY 6.3: ABORIGINAL AND TORRES STRAIT ISLANDER YOUTH HEALTH AND WELLBEING

Mission Australia's *Youth Survey 2019* captured the views, concerns, experiences and aspirations of 25 126 young people, 1579 (6.4 per cent) of whom identifed as being Aboriginal and/or Torres Strait Islander (Indigenous). Nearly half (49.6 per cent) of the Aboriginal and Torres Straight Islander respondents identifed as female and 42.7 per cent identifed as male.

Key Findings

- 13.8% of Aboriginal and Torres Strait Islander respondents indicated that they are living with a disability.
- Twice the proportion of Aboriginal and Torres Strait Islander males (14.4 per cent) identified that they were living with a disability (compared with 7.0 per cent of females).
- Post-school plans
  - Go to university: 40.1 per cent (Indigenous), 66.7 per cent (non-Indigenous)
  - Get a job: 39.9 per cent (Indigenous), 33.3 per cent (non-Indigenous)
  - Travel or take a gap year: 21.5 per cent (Indigenous), 28.7 per cent (non-Indigenous)
  - Get an apprenticeship: 19.3 per cent (Indigenous), 10.6 per cent (non-Indigenous)
- Family relationships were rated as extremely important or very important by more than three quarters (76.4 per cent) of Aboriginal and Torres Strait Islander respondents (extremely important: 46.5 per cent; very important: 29.9 per cent).
- Over seven in 10 (71.2 per cent) Aboriginal and Torres Strait Islander respondents highly valued friendships (other than family) (extremely important: 33.8 per cent; very important: 37.4 per cent).
- Around six in 10 Aboriginal and Torres Strait Islander young people rated physical health (61.2 per cent) and mental health (60.3 per cent) as extremely important or very important to them.

Education

	NON-INDIGENOUS RESPONDENTS %	ABORIGINAL AND TORRES STRAIT ISLANDER RESPONDENTS %	ABORIGINAL AND TORRES STRAIT ISLANDER FEMALES %	ABORIGINAL AND TORRES STRAIT ISLANDER MALES %
Studying full-time	94.1	83.1	86.8	82.3
Studying part-time	2.4	5.8	5.0	6.2
Not studying	3.5	11.0	8.1	11.6

Location of bullying

	NON-INDIGENOUS RESPONDENTS %	ABORIGINAL AND TORRES STRAIT ISLANDER RESPONDENTS %	ABORIGINAL AND TORRES STRAIT ISLANDER FEMALES %	ABORIGINAL AND TORRES STRAIT ISLANDER MALES %
At school/TAFE/ university	80.8	72.5	74.8	72.6
Online/on social media	33.4	40.9	43.0	33.6
At home	16.9	30.1	27.1	27.4

Most important issues in Australia today

	NON-INDIGENOUS RESPONDENTS %	ABORIGINAL AND TORRES STRAIT ISLANDER RESPONDENTS 2019 %	ABORIGINAL AND TORRES STRAIT ISLANDER FEMALES %	ABORIGINAL AND TORRES STRAIT ISLANDER MALES %	ABORIGINAL AND TORRES STRAIT ISLANDER RESPONDENTS 2018 %	ABORIGINAL AND TORRES STRAIT ISLANDER RESPONDENTS 2017 %
Mental health	36.8	28.9	35.7	25.3	35.5	27.6
Alcohol and drugs	20.3	28.1	26.6	31.2	32.3	41.0
Equity and discrimination	24.9	24.3	28.1	21.5	20.6	23.1
The environment	35.0	23.7	27.3	21.5	6.8	5.6
Crime, safety and violence	12.1	14.4	17.1	13.1	14.6	11.6

Happiness

	NON-INDIGENOUS RESPONDENTS %	ABORIGINAL AND TORRES STRAIT ISLANDER RESPONDENTS %	ABORIGINAL AND TORRES STRAIT ISLANDER FEMALES %	ABORIGINAL AND TORRES STRAIT ISLANDER MALES %
Happy/Very happy	61.4	51.4	47.8	59.2
Not happy or sad	28.0	30.5	33.4	28.7
Very sad/Sad	10.6	18.0	18.8	12.1

Feelings about the future

	NON-INDIGENOUS RESPONDENTS %	ABORIGINAL AND TORRES STRAIT ISLANDER RESPONDENTS 2019 %	ABORIGINAL AND TORRES STRAIT ISLANDER FEMALES %	ABORIGINAL AND TORRES STRAIT ISLANDER MALES %	ABORIGINAL AND TORRES STRAIT ISLANDER RESPONDENTS 2018 %	ABORIGINAL AND TORRES STRAIT ISLANDER RESPONDENTS 2017 %
Very positive	13.3	13.1	9.9	15.3	18.1	17.2
Positive	45.4	39.0	43.5	39.3	38.2	41.7
Neither positive nor negative	29.4	31.6	33.5	29.8	29.0	28.3
Negative	8.9	8.5	9.7	7.7	7.0	5.5
Very negative	3.0	7.8	3.4	8.0	7.8	7.4

SOURCE: Mission Australia, 2019

FIGURE 6.11 Information from Mission Australia's Youth Survey 2019

1 Summarise the inequality that exists between Aboriginal and Torres Strait Islander youth and non-Indigenous youth, reported in the Mission Australia data above.

2 Select two of the findings from the Mission Australia information provided, and discuss the impact each may have on the health and wellbeing of Aboriginal and Torres Strait Islander youth compared to non-Indigenous youth.

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3 With reference to Figure 6.2, select three factors and explain, using the data above, how each might contribute to the inequalities experienced by Aboriginal and Torres Strait Islander youth.
4 Based on the data, outline areas for action that the Australian government could take to promote the health and wellbeing of Aboriginal and Torres Strait Islander youth.
5 Research a program implemented by the Australian government or non-government organisations aimed at addressing the inequalities identified in question one.

ACTIVITY 6.4: RESEARCH THE CONCERNS OF YOUNG PEOPLE AND ASPECTS OF YOUTH HEALTH AND WELLBEING REQUIRING ACTION

Before you begin to develop your own survey to collect data, you need to ensure that you understand the ethical principles of conducting research. This includes ensuring your participants give you their informed consent, maintaining the confidentiality of your participants and their individual right to privacy, and doing no harm to the participants, research or community with the data you collect and the way you collect it.

Develop your own survey to collect data on the concerns of young people and the focus area of youth health and wellbeing that interest you. Carefully consider the questions you wish to ask and the survey format you wish to use. Your questions should not ask your participants to disclose personal information about their own health status or health behaviours. The focus of your survey is to gather data on the concerns of young people. Make sure you are following the ethical principles of conducting research.

1 Conduct your survey and collect your required data sample.
2 Analyse your results and discuss the main findings.
3 Design an infographic that clearly shows the results of your survey.
4 Describe the aspects of youth health and wellbeing that your survey participants indicated require action.
5 Develop a health action plan proposal that could be implemented to improve the health and wellbeing of young people.

6.3 COMMUNITY VALUES AND EXPECTATIONS THAT INFLUENCE PROGRAMS FOR YOUTH

Addressing youth health inequalities and concerns involves developing and implementing easily accessible, age appropriate health and wellbeing programs that specifically target youth health issues and lead to improved health outcomes. A successful program needs the support of the community to be effective.

Community expectations and values, the principles or standards of behaviour that a community considers to be important, will often shape the development and implementation of these programs. Communities expect to have their opinions on certain issues heard as well as acted upon.

Our communities value the health and wellbeing of young people, and support interventions to improve youth health status. This is because when young people are in good health they are more connected and productive members of the community.

Communities expect health and wellbeing programs to address the broader factors that impact youth health, and to empower youth with knowledge and skills to enhance their quality of life. This will benefit the whole community as healthier youth experience healthier adult lives. Communities expect that the cultural diversity and abilities of young people will be catered for so all young people can feel included and respected, and that equity in access to health promoting resources is achieved.

However, there are certain health concerns that communities may not be comfortable addressing 'close to home', for example, funding or supporting harm-minimisation strategies such as safe-injecting rooms and pill testing. Issues such as these can raise many opposing community values and expectations and ignite concerns of promoting negative behaviour rather than improving youth health and wellbeing.

FIGURE 6.12 There are many community expectations and values that influence the development and implementation of health programs for youth.

FIGURE 6.13 Condoms prevent STIs, yet many young people state that they do not use them regularly.

Earlier in this chapter, the issue of youth reproductive and sexual health and wellbeing was discussed. The provision of condoms is one simple health action that can be implemented to reduce rates of STIs.

According to the National Survey of Australian Secondary Students and Sexual Health (2018), 62.2 per cent of sexually active young people (in Years 10–12) reported 'always' using condoms when they had sex in the previous year. A further 10.5 per cent used condoms only 'sometimes' and 12.8 per cent 'never' used condoms. Therefore, more work is needed to increase the number of youth using condoms and practising safe sex to improve youth health and wellbeing outcomes.

One possible reason for these statistics is the availability of condoms. There is certainly a need for the promotion of safe sexual practices, and one simple way to decrease STI rates is the provision of condoms. The ideal location for this to occur would be in schools, as all young people are expected to be attending school. Yet this idea for a simple intervention program does not always match the views, values and expectations of the community.

For many people in the community, the idea of condom vending machines in schools goes against their values and expectations. This is probably why such a program has not yet been implemented. It makes sense for young people to be given easy and reliable access to condoms, which are an effective way to prevent STIs. But there is a view that young people should not be sexually active at this age. Another view is that providing condoms encourages and makes it too easy for youth to become sexually active. Drug harm-minimisation strategies are also often met with conflicting community values and expectations. This has been evident in the recent deliberations about safe-injecting rooms and pill testing.

ACTIVITY 6.5: CONDOM VENDING MACHINES

1. List all the arguments supporting the installation of condom vending machines in schools. Think about the viewpoints of students, teachers, parents and the broader community.
2. State where you would put the vending machines in a school.
3. List all the arguments against the installation of condom vending machines in schools. Think about the viewpoints of students, teachers, parents and the broader community.
4. Weigh up the arguments for and against the installation of condom vending machines in schools. Determine whether you think this is an effective program that should be put in place.
5. Explain the influence of the community in the development and implementation of health and wellbeing programs for youth.

ACTIVITY 6.6: MEDIA ANALYSIS – SAFE-INJECTING ROOM

Richmond safe-injecting room 'saving lives'

By Paul Hayes, *newsGP*, 13 June 2019

Politician Fiona Patten said the controversial Melbourne facility has managed more than 1100 overdoses since opening in mid-2018.

Reason Party MLC Fiona Patten, the politician who helped pave the way for the Richmond safe-injecting room, believes the numbers are evidence 'the centre is working, saving lives and getting people into much-needed treatment and recovery'.

New data on the medically supervised injecting centre, in the inner-Melbourne suburb of North Richmond, shows:

- the centre has managed more than 1130 overdoses – an average of three a day – between July 2018 and June 2019
- staff carried out more than 3300 health and social support interventions in the injecting centre's first nine months
- more than 250 people have started opioid-replacement treatment or have been referred to other forms of drug and alcohol treatment, while 40 have entered treatment for hepatitis.

'What we know is ambulance callouts dropped in the first six months of the centre opening and it has saved people from overdosing on over 1000 occasions, while connecting drug users to other drug services, including hepatitis C treatment and mental health counselling,' Ms Patten said.

'But we will keep working with drug users and continue to listen to the community on this issue.'

The facility's local community has been vocal in voicing concerns with the injecting room, with many complaining that issues of public drug use, drug trafficking and antisocial behaviour have plagued the centre since it opened in July 2018.

Local residents have arranged community meetings to air grievances and try to change the situation. A recent meeting attracted a standing-room-only crowd of around 150 residents and was focused on presenting possible solutions to what many attendees said is a growing problem.

Yarra City councillor Stephen Jolly has been the driving force behind the meetings. He said many in the community are 'pulling their hair out' due to the social issues.

Cr Jolly previously told *newsGP* he believes initiatives such as Seattle's Law Enforcement Assisted Diversion program need to be enacted soon, otherwise community sentiment towards the safe-injecting room will further erode.

'There's an increasing minority that want it to be moved, and there's an increasing minority that want it closed down, out of desperation,' he said.

'If we don't come along with extra programs to fix the problems, if we just leave it at the injecting facility, it will mentally demoralise people.

'We have to have further measures to … try and get these drug users off the street, and to also get these people into programs that are going to help them break the addiction cycle.'

1 What is a safe-injecting room?

2 List the reasons why the Reason Party MLC Fiona Patten believes the safe-injecting centre is 'working'.

3 Explain why some members of the community are against having a safe-injecting room in their suburb.

4 Evaluate the impact of community expectations and values in relation to this issue.
5 Discuss why safe-injecting rooms are important health and wellbeing programs.
6 Outline your own opinions about safe-injecting rooms, using data to justify your response.

ACTIVITY 6.7: LETTER TO THE EDITOR – ZERO TOLERANCE OR HARM MINIMISATION?

The use of illicit drugs in our community, and as we know at our music festivals, is not uncommon. To some young people what seems like fun, or a way to have fun, can very quickly escalate into a horrific and even tragic nightmare. It is regrettable, harmful and deadly. Yet, despite knowing all the risks, people still take drugs. For many, including some of our politicians, the solution is simple: zero tolerance. People should not take drugs. There are strict laws regarding drug use in our community and drugs should be prohibited in all circumstances. If illicit drugs are purchased and taken, then it is done so illegally, and people should face the rule of the law.

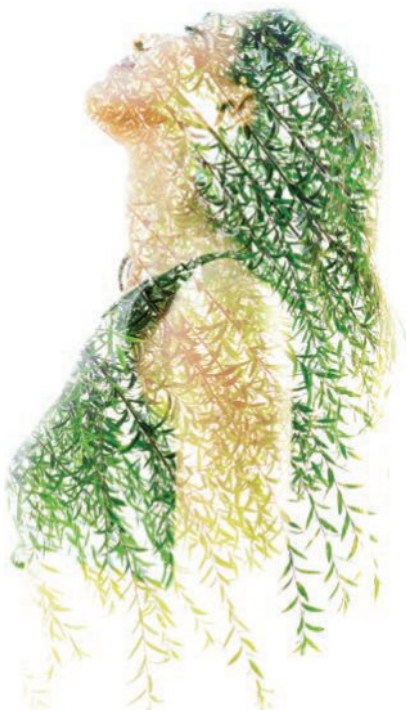
Yet in our schools and in our community, we are taught from a harm-minimisation perspective. That is, we know people use illicit drugs that can cause harm so why not minimise that harm and restrict the damage caused? We know people will take drugs such as pills, so to minimise harm, pill testing should be allowed. Importantly, health warnings and safety information are provided to all patrons presenting at pill-testing services, which empower youth to make the decision to minimise harm. Surely this would reduce the number of overdoses and importantly the number of deaths. Yes, young people will take drugs, but if they are informed about the toxic chemicals and the potential harm a pill could cause, then maybe they won't take that pill. We have safe-injecting facilities. Why not pill testing?

Bryce, Melbourne

1 Respond to the letter to the editor. In your response, include your views and community expectations and values for and against pill testing.
2 Alternatively, research the pros and cons of pill testing at music festivals. Have a class debate, or in groups write a series of tweets for and against pill testing to be shared and discussed with the class.

ACTIVITY 6.8: RESPONDING TO YOUTH HEALTH AND WELLBEING

Throughout this chapter, you have gained an understanding of the aspects of youth health that require action. Develop your own action plan for a health issue. Consider the expectations of the community when developing your plan. Include a justification as to why your program should be accepted and implemented in your local area.



6.4 GOVERNMENT AND NON-GOVERNMENT PROGRAMS

A healthy community depends on the active involvement of its members and their ability to make health-promoting decisions in environments that support optimal health and wellbeing. Specifically, by focusing on the most significant preventable causes of poor health and wellbeing, and the factors that contribute significantly to unequal health and wellbeing outcomes, community engagement is achieved and values and expectations are addressed.

Examples of programs developed and implemented by the government

The Australian and Victorian governments fund and support the implementation of a range of programs and strategies that aim to address aspects of youth health and wellbeing requiring action.

Headspace National Youth Mental Health Foundation

Headspace provides tailored and holistic mental health support to 12–25-year-old Australians. There are over 100 Headspace centres around Australia. Each centre is designed to meet the needs of its particular local community. Each centre acts as a one-stop shop for young people who need help with mental health, physical health (including sexual health), the use of alcohol and other drugs, or work and study.

Headspace's website provides a range of resources, including a blog and information on various mental and physical health topics. The website also hosts 'eheadspace', which provides free online support and counselling to young people and their families and friends.

Headspace also has a free app that offers support for those with mental health issues. The app can also help those who wish to improve their mental health.

Positive Choices: Drug and alcohol information

Funded by the Australian Government Department of Health, Positive Choices is an online portal that provides access to interactive evidence-based drug education resources for teachers, students and parents.

Research suggests the teenage years are when the use of alcohol and other drugs is initiated, which highlights the importance of intervening early to prevent young people using drugs and to prevent the associated harms of drug use. Positive Choices provides prevention programs.

Youth Central

The Youth Central website has information about study and training, jobs and careers, advice for life, and advice about how to get involved in youth programs, politics or the local community. Youth can access this website to obtain free information and contact details to access further support. For example, the 'advice for life' section provides information on topics related to health, including mental health, healthy eating, getting fit, how a young person may feel about themself, and drugs, smoking and alcohol.

VicHealth – This Girl Can campaign

The 'This Girl Can' campaign is all about empowering and inspiring Victorian women of any age to enjoy being active without worrying about judgment, gender stereotypes or skill level.

FIGURE 6.14 The 'This Girl Can' initiative by VicHealth, state government organisation, is all about empowering Victorian women to enjoy being active without worrying about judgement, gender stereotypes or skill level.

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VicHealth is encouraging women to visit the This Girl Can website and share their stories about how they get motivated, what kinds of activities they enjoy, and the moments where they've thought, 'I don't give a damn – I'm doing it anyway!'

The website provides girls with the inspiration to be active without fear of being judged. There are links to stories of everyday women to inspire other women to exercise, online events, podcasts and exercise tips.

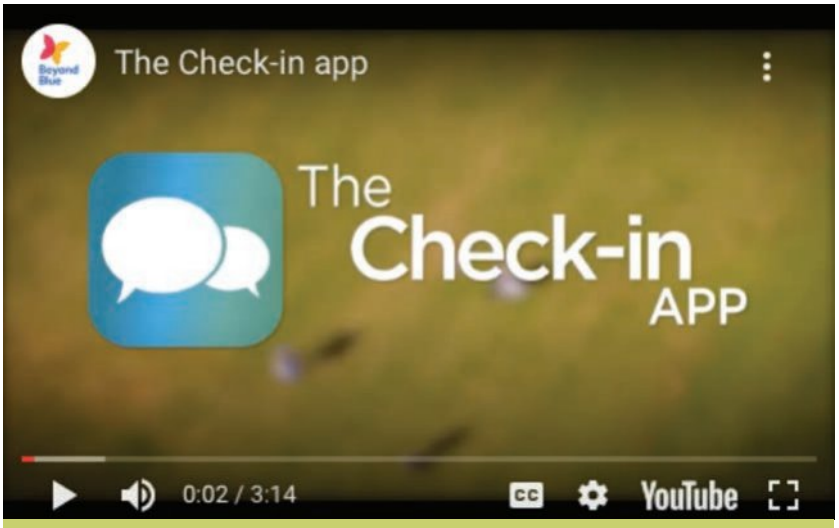

FIGURE 6.15 Using Beyond Blue's Check-in app is an easy and effective way to 'check-in' with someone you are concerned about.

Examples of programs developed and implemented by non-government organisations

There are many groups and organisations within the community that implement and support initiatives that address young people's health and wellbeing issues. These programs are aimed at improving or creating positive health outcomes for youth. Examples of non-government organisations include Beyond Blue, DrinkWise Australia, the Butterfly Foundation, and the Alcohol and Drug Foundation.

The programs support youth to stay connected to their community. The programs do this by improving the accessibility of relevant health information and by empowering individuals and groups to develop support systems, knowledge and skills to make positive decisions about their health and wellbeing.

When the community is directly involved in strategies and programs, there is a greater likelihood that the aspects requiring health action will be addressed in a way that is relevant to youth. This makes the programs and strategies more effective, due to a greater likelihood of acceptance of and participation in the programs. This process of developing health literacy in youth is vital for young people to be able to make informed and health-promoting decisions that improve their health outcomes.

Beyond Blue

Beyond Blue and specifically, Youth Beyond Blue, is a non-government organisation that develops a number of strategies and programs aimed at improving youth mental health and wellbeing.

One specific strategy is the Check-in app (available at https://cambridge.edu.au/redirect/8882). This app provides support for anyone who wants to 'check-in' with a friend but is unsure how to start the conversation or is worried about what to say or making the situation worse. Through four steps, the app supports people to think about what to say, where they might check-in, provides details and links on where to get more tips, and provides guidance on how to support a friend if they deny there is a problem. The app enables the conversation to be rated and gives advice on the next steps to take. The app can be downloaded free of charge through the App Store or Google Play.

ACTIVITY 6.9: MENTAL HEALTH – RESEARCH

Youth Beyond Blue is a non-government organisation that works to promote good mental health and wellbeing and offers various programs and resources to youth and their families.

The BRAVE Program *Anxious? It can get better.*	The Check-in app *Help someone you know*	Forums *Connect with others*
A free interactive online program for young people who would like help managing their anxiety	The Check-in app helps you plan conversations with friends whom you are worried about, as knowing how to talk to them can be the hardest part	A place where you can share your experience of dealing with tough times, help others with their own issues and learn ways of coping and getting better

FIGURE 6.16 Youth Beyond Blue provides various programs and resources to help young people.

1 Research Youth Beyond Blue. Prepare a fact sheet that could be placed in the school counselling office or given to students to support mental health within your school. Your fact sheet should include:
   - **a** information about the programs offered by Youth Beyond Blue
   - **b** the data supporting the need for these programs
   - **c** ways the implementation of these programs has been influenced by community expectations
   - **d** examples of how factors that contribute to inequalities in health status have been addressed (you may like to refer back to Figure 6.2).

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DrinkWise Australia

DrinkWise Australia is a non-government organisation promoting change towards a healthier and safer drinking culture in Australia. To promote significant behavioural change, DrinkWise has developed and implemented a range of national information and education campaigns. DrinkWise also provides practical resources to inform and support youth and the community about alcohol. These resources include an interactive tool highlighting the effects of alcohol on your body, a standard drink calculator, and information about the impact of binge drinking.

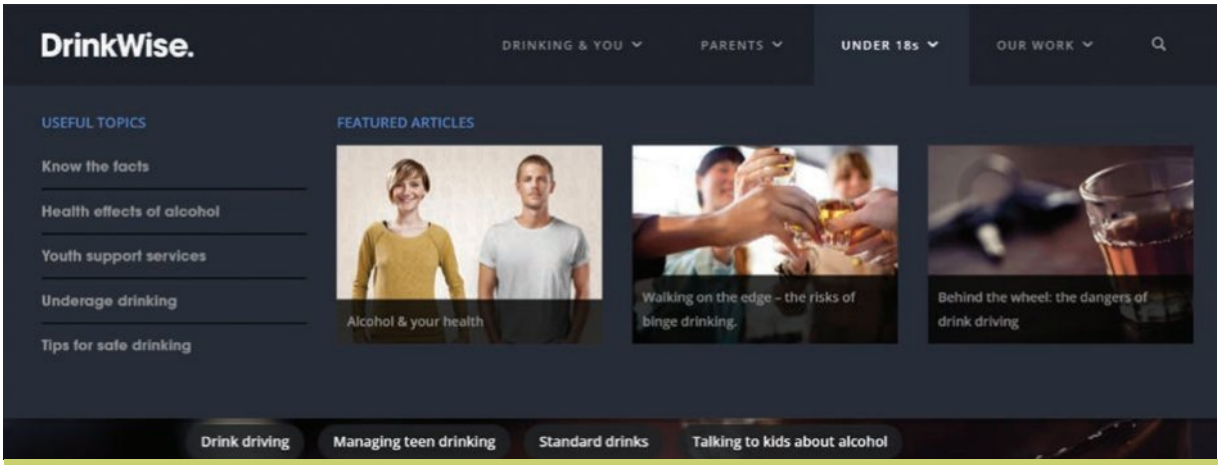

FIGURE 6.17 The DrinkWise website has information specific to youth aged under 18 years.

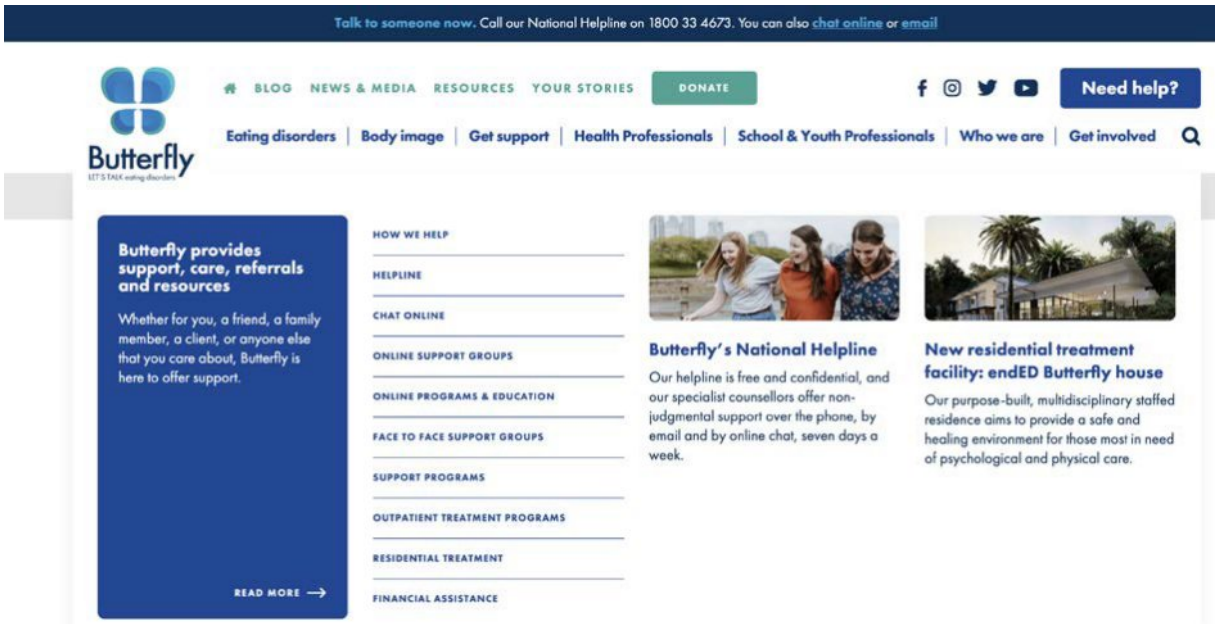

FIGURE 6.18 Butterfly Foundation provides a range of services for those experiencing body image issues and eating disorders. Support for their carers is also provided.

Butterfly Foundation

This organisation focuses on supporting Australians who suffer from eating disorders and negative body issues and their carers. The Butterfly Foundation provides a national support line, advocates for policy change and promotes awareness of eating disorders by supporting initiatives such as International No Diet Day (6 May). The foundation also helps young people, professionals and parents by providing specialist programs, workshops and presentations, and by providing an easy-to-navigate website with links to a range of supportive resources.

Alcohol and Drug Foundation

The Alcohol and Drug Foundation (ADF) is Australia's leading non-government, not-for-profit organisation providing evidence-based information about the harms of consuming alcohol and taking drugs. The ADF's website provides a range of information, including facts about particular drugs and how to access support services. The ADF also offers a range of programs, including the 'text the effects' drug-information service that is provided via SMS. This service provides information about the effects of drugs in a confidential and accessible way, in any location and at any time. Simply text the name of the drug you want to know about to 0439 tell me (0439 835 563).

Additional sources of information for youth

A wide range of sources of information and services are available for youth in relation to the health and wellbeing challenges they face. These sources may support your own research and include:

- Child and Adolescent Mental Health Services
- youth projects such as The Living Room, which is a primary health service providing healthcare for individuals who are homeless or at risk of homelessness, disadvantaged or marginalised; services include a podiatrist, mental health nurse, psychologist and nutritionist

- the Family Planning Association's dedicated sexual and reproductive health clinic especially for people aged under 25 years
- the Melbourne Sexual Health Centre, free walk-in clinic for STIs, needle exchange and consultation
- the Youth Support + Advocacy Service, located in Melbourne and rural Victoria, which provides youth outreach services
- Black Dog Institute, has an informative website with resources suitable for all ages including youth
- general practitioners
- dentists
- youth workers
- local youth centres
- health teachers
- school counsellors or welfare coordinators
- school nurses
- local councils (e.g. Nillumbik Community Health)
- Kids Helpline
- Berry Street, supporting the needs of young people and families.

Useful websites for youth include:

- the Australian Bureau of Statistics
- the Australian Institute of Health and Welfare
- the Royal Children's Hospital Melbourne Centre for Adolescent Health
- Headspace
- Healthdirect
- VicHealth
- YouthGAS
- the Victorian Government Department of Education and Training: Youth Programs.

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ACTIVITY 6.10: GET INFORMED

Research two youth health promotion initiatives identified in this chapter or others of your choice. One initiative should be a government program, the other a non-government program. Complete the following tasks:

1 Describe aim of the initiative and the youth health issue being addressed.

2 Outline the services that are provided.

3 Explain how youth can access these services.

4 Evaluate the impact the initiative may have on improving youth health and wellbeing. Justify your response.

5 Discuss how this initiative will be successful in engaging youth to utilise the services provided.

CHAPTER SUMMARY

- 'Health action' refers to the focus on and action of changing behaviours to become health-promoting behaviours.
- Aspects of youth health and wellbeing that require action – as indicated by burden of disease health data – include injury, poisoning, mental health disorders, alcohol misuse, illicit drug taking, sexual health and weight issues.
- According to the World Health Organization (WHO), health inequalities are the differences in health status or the differences in the distribution of health determinants (factors) between different population groups.
- A range of factors contribute to health inequalities, including:
  - housing and living conditions
  - working conditions
  - gender
  - lifestyle behaviours including risk and protective behaviours
  - geographic location
  - socioeconomic status
  - peer group
  - culture
  - education level
  - health literacy level.
- Community values and expectations that influence the development of programs targeted to improve youth health include:
  - equity
  - confidentiality
  - inclusion
  - value for money or affordability
  - accountability for personal behaviour
  - effectiveness
  - empowering youth to make protective behaviour change
  - addressing all factors that have an impact on youth health and wellbeing
  - respect for community culture, diversity and the abilities of all community members
  - accessibility (by youth)
  - evidenced-based programs and information.
- A range of government and non-government health-promoting programs include:
  - government: Headspace, Positive Choices, Youth Central, VicHealth's This Girl Can campaign
  - non-government organisations: DrinkWise Australia, the Butterfly Foundation, Beyond Blue, the Alcohol and Drug Foundation.

KEY QUESTIONS

SUMMARY QUESTIONS

1. Define the term ‘health inequalities’.
2. List and explain three factors that can contribute to health inequalities in youth.
3. Discuss why research on the concerns of young people is key to understanding the health action required to improve youth health and wellbeing.
4. Explain what is meant by ‘health action’.
5. Identify and outline two aspects of youth health and wellbeing requiring action.
6. Briefly outline three areas of concern more likely to be experienced by Aboriginal and Torres Strait Islander youth compared to non-Indigenous youth.
7. List three community values and expectations and discuss how each can influence the development and implementation of youth health and wellbeing programs.
8. Suggest reasons why communities may not want to implement youth health and wellbeing programs.
9. Describe the importance of a government program relating to youth health and wellbeing.
10. Outline the benefits of a non-government program relating to youth health and wellbeing.

EXTENDED-RESPONSE QUESTION

The DrinkWise organisation has placed a major focus on parents' roles as influencers and role models in their children's lives – specifically, when it comes to their children's future consumption of alcohol.

The DrinkWise parental influence campaign has continued to evolve, and was recently relaunched though a partnership with parent site MamaMia. MamaMia's reputation as a trusted source of information for parents, as well as its strong social media presence, has enabled DrinkWise to more widely promote its key campaign messages to parents. Essentially, this message is that it's the role of parents to positively influence their children's future drinking behaviour and to delay their children's introduction to alcohol consumption.

The partnership includes a series of collaborative videos with well-known and influential media personalities and parents of teens, as well as editorial pieces promoted through MamaMia and other well-known parenting websites. This creates a forum for parents to discuss their views and to share their tips.

SOURCE: Adapted from the DrinkWise website

QUESTION

Using the information above and in Figure 6.2, justify why youth alcohol consumption is an aspect of youth health and wellbeing requiring health action and analyse factors that contribute to inequalities in the alcohol consumption of youth. Describe how DrinkWise's parental influence campaign may be impacted by community expectations and values. (10 marks)

EXAMINATION PREPARATION QUESTIONS

Action must be taken if improvements in youth health and wellbeing are to continue. This includes the implementation of government and non-government youth health and wellbeing programs addressing aspects of concern.

A Define the term 'health inequality'. (1 mark)

B Answer the following questions about health inequality:

- **i** Outline an aspect of youth health and wellbeing that requires health action. (2 marks)
- **ii** Justify why this is an aspect of youth health and wellbeing that is of concern. (2 marks)
- **iii** Identify and describe two factors that contribute to this health inequality. (6 marks)
- **iv** Describe one program that could be implemented to address this aspect of youth health and wellbeing requiring action. (3 marks)


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7 A FOCUS ON A YOUTH HEALTH ISSUE: ROAD SAFETY

KEY KNOWLEDGE

- key features of one health and wellbeing focus relating to Australia's youth including:
  - impact on different dimensions of health and wellbeing
  - data on incidence, prevalence and trends
  - risk and protective factors
  - community values and expectations
  - healthcare services and support
  - government and community programs and personal strategies to reduce negative impact
  - direct, indirect and intangible costs to individuals and/or communities
  - opportunities for youth advocacy and action to improve outcomes in terms of health and equity.

KEY SKILLS

- Research and collect data on one particular health and wellbeing focus relating to youth, with critical analysis of its impact, management and costs
- Plan advocacy and/or action based on identification and evaluation of opportunities for promoting youth health and wellbeing.

(VCAA Study Design, © VCAA)

INTRODUCTION

supportive environments: Positive environments (physical, social, economic and political) that help to promote the health and development of youth by assisting and encouraging young people as they make the transition to adulthood.

While Australia's young people experience good health, many issues still impact their health and wellbeing, some of which are preventable. The health issues faced by youth can differ from the health issues faced by people in other lifespan stages, as outlined in previous chapters. As a community, we need to ensure that the health and wellbeing of our youth forms a key part of Australia's health action plan. The ways in which youth can manage key health and wellbeing issues depends on the protective factors and **supportive environments** made available to them, as well as the development of policies and community action to assist youth in addressing the challenges. Most youth are able to work through and address the issues they face and complete a successful transition into adulthood, with support from their family, and from the healthcare services and health programs that are focused on youth.

This chapter investigates in detail one of the issues that impacts youth health and wellbeing: road safety. This chapter provides an example of how to approach the research task and the critical analysis that is needed to meet the requirements of this aspect of the Health and Human Development Unit 1 course. This health issue has been chosen because injuries and death due to road accidents account for a significant proportion of the burden of disease in Australia. While there has been a notable decline in the death rates of young people – mostly due to decreasing incidence of youth deaths due to injury – road accidents account for over one third of injury deaths, making it a leading cause of mortality and morbidity. Globally, road accidents are the leading cause of death among young road users and young drivers are over-represented among those killed or injured in road accidents.

AOS 3

What you need to know

- One youth health and wellbeing focus (i.e. a health issue) in depth.
- How the focus issue impacts all dimensions of youth health and wellbeing.
- The data applicable to the focus issue.
- The range of protective and risk factors and how each factor impacts the focus issue.
- The community values and expectations in relation to the focus issue.
- Healthcare services and support, government and community programs, and personal strategies targeted to the focus issue.
- The costs (direct, indirect and intangible) of the focus issue on individuals and communities.
- The opportunities for youth advocacy and action aimed at improving the health outcomes and equity in relation to the focus issue.

What you need to be able to do

- Investigate one youth health and wellbeing focus.
- Conduct research and collect data for one youth health and wellbeing focus issue.
- Critically analyse the impact, management, and costs to individuals and communities of the focus issue.
- Identify and plan advocacy or action that could be taken in relation to the focus issue to promote health and wellbeing and equity for youth.

7.1 ROAD SAFETY: IMPACT ON DIMENSIONS OF HEALTH AND WELLBEING

Being injured in a road accident can affect the health and wellbeing of a young person in a variety of ways. For many, the impacts of such an injury can be lifelong.

Physical health and wellbeing

Being injured in a road accident can negatively impact a person's physical health and wellbeing by reducing the efficient functioning of the body. Permanent injury could reduce movement and participation in physical activity, which could impact body weight and fitness levels. Injury can reduce the capacity of the body to perform every day tasks without dependence on others. Long-term pain may be a result of injury from an accident and some young people may find it difficult to sleep. This could reduce energy levels, impacting physical health and wellbeing.

Social health and wellbeing

Being injured in a road accident can negatively impact a person's social health and wellbeing, as the ability to actively participate and interact with others in the community – such as being involved in team sports, volunteering or obtaining employment – will be reduced while the young person is recovering from road trauma. Independence may also be reduced, and this will decrease social possibilities outside the home.

Individuals may choose to socially isolate themselves as they may be angry with their circumstances. Or, they may take some time to adjust to new social situations as a result of road injuries reducing their ability to establish and maintain new relationships.

Family relationships may also be impacted, with connectedness to parents changing as a result of road traffic injury, particularly if caused through risk-taking behaviours, such as driving under the influence of alcohol, not wearing a seatbelt or driving while using a mobile phone.

FIGURE 7.1 Youth is usually a time of good health, yet many young people experience health and wellbeing issues.

Emotional health and wellbeing

Being injured in a road accident can negatively impact a person's emotional health and wellbeing, especially if the individual lacks resilience and has difficulty adapting to their situation. The inability to understand the impact of their road accident may lead youth to become angry and unable to effectively manage their emotions. Individuals may no longer feel in control of their feelings during everyday life and may express their emotions in negative ways, impacting on their emotional health and wellbeing.

Mental health and wellbeing

Being injured in a road accident can negatively impact a person's mental health and wellbeing, as there may be feelings of 'Why me?' and depression. The individual may initially have difficulty accepting their new situation. The individual may no longer be able to cope with the common demands of everyday life. This lack of independence – and the need to depend on others to do basic everyday tasks – may increase the risk of the individual experiencing depression.

As a result of the accident, there may be feelings of low self-esteem and anger or resentment about

the occurrence of the accident and resulting injuries. Even if there are no physical injuries, there may be psychological injuries, such as flashbacks to the accident, and reluctance to drive or be on the road again. Psychological injuries impact good decision-making and the ability to logically process information.

Spiritual health and wellbeing

Being injured in a road accident can negatively impact a person's spiritual health and wellbeing, as individuals may lose trust and belief in both themselves and their spirituality. The young person may experience a reduced sense of purpose in life. They may also no longer feel a sense of fulfilment if they are unable to participate in their usual activities due to the injury. Connections to friends, the community or family may change after an accident contributing to a loss of a sense of belonging.

7.2 ROAD SAFETY: A FOCUS ON DATA

Road injury is a leading cause of death among young people and can leave others with serious disability or long-term health conditions such as depression. What is concerning is that this health issue, which is a significant contributor to burden of disease in Australia, is largely preventable.

Injury patterns change during adolescence and early adulthood, when young people are exposed to new situations as they assume independence. It is also well documented that participation rates in risk-taking and experimenting behaviours are higher during youth and as a result rates of injury are very high for this age group. But most concerning is the consistent over-representation of young people in road trauma statistics. According to the Transport Accident Commission (TAC), young people aged 18–25 years are about three times more likely to be killed in a car crash than older, more experienced drivers. Also, current evidence suggests fatalities in this age group have increased over the past few years (see Table 7.1).

According to TAC statistics, more than 300 young drivers aged 18–25 have lost their lives in Victoria in the last 10 years – representing almost one in four or 23 per cent of drivers' lives lost in Victoria in this period.

In 2018, drivers represented 97 out of the 213 lives lost in road accidents, making drivers the largest group of Victorians who lost their lives. However, specifically 14 per cent of drivers who lost their lives were aged between 18–25 years, with this age group representing around 10 per cent of Victorian licence holders. Young drivers are also considered to be at greatest risk of being involved in a fatigue-related accident.

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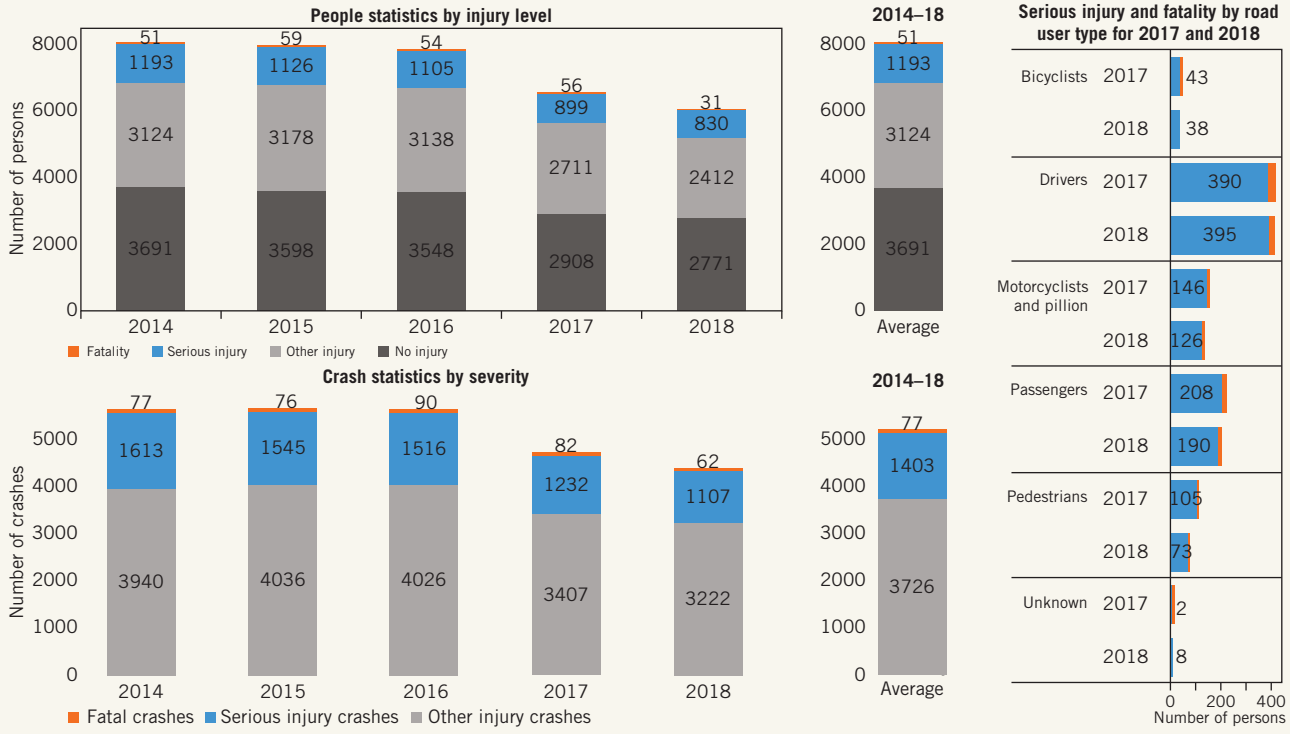
TABLE 7.1 Road safety is a significant health focus requiring health advocacy and action as data indicates there has been an increase in fatalities from road accidents from 2017–19.

2017–18 LIVES LOST	2018–19 LIVES LOST
225	266 (up 18.2%)

AGE GROUP	LIVES LOST				
	2017–18	2018–19	CHANGE	% CHANGE	FIVE-YEAR AVERAGE
16–17 years old	2	5	+3	+150%	6
18–20 years old	14	24	+10	+71%	17
21–25 years old	15	26	+11	+73%	24

SOURCE: TAC



SOURCE: VicRoads, 24 July 2019

FIGURE 7.2 Statistics from VicRoads indicate that for people aged 13–25 in 2014–18 there was a reduction in the number of crashes and in the severity of injuries.

According to the TAC, the following 2018 data provides more insight into young road users:

Of the 14 young drivers who lost their lives on our roads in 2018:

- 79 per cent were male
- 39 per cent of these fatalities occurred in regional Victoria (73 per cent of these fatal accidents occurred on roads with speed limits of over 100 km/hr)
- 50 per cent of these fatalities were in accidents only involving one vehicle
- 75 per cent were involved in crashes that occurred in high alcohol times.

SOURCE: TAC

Recent VicRoads data shows a reduction in the number of crashes involving young road users (i.e. those aged 13–25 years) that resulted in serious injury for this age group between 2014 and 2018. In 2018, 830 young people were seriously injured compared with 1193 seriously injured in 2014 (see Figure 7.2).

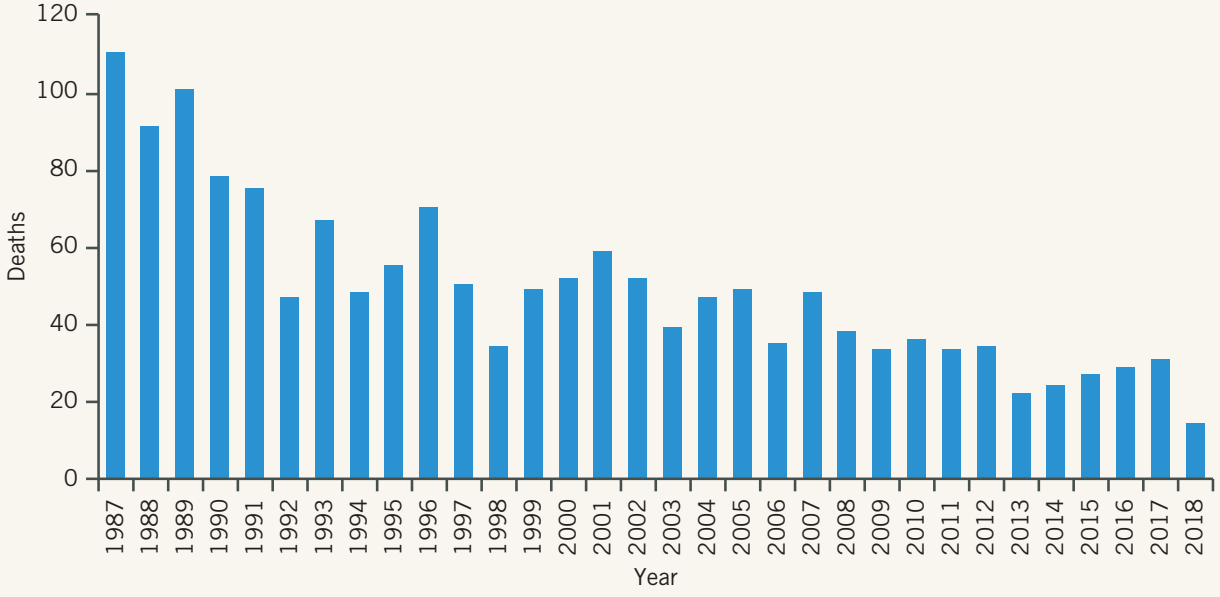
Youth aged 18–25 years are involved in one third of road crashes, and the crash rate is highest during the time a young driver is on a probationary licence. The TAC reports that around 45 per cent of injury crashes occur in the first year of P-plate driving. The risk of an injury crash decreases by 50 per cent after six to eight months of driving, and as driving experience increases, the risk decreases further.

TABLE 7.2 TAC claims involving hospitalisation, by age, 30 June 2018 to 30 June 2019

AGE GROUP	ACCIDENTS INVOLVING HOSPITALISATION				
	2017–2018	2018–2019	CHANGE	% CHANGE	FIVE-YEAR AVERAGE
0–17 years old	444	451	7	2%	384
18–25 years old	1570	1673	103	7%	1380

SOURCE: TAC, June 2020

According to TAC claims data from the period June 2018 to June 2019, there were more claims involving hospitalisation of young males (aged 18–25 years) due to road accidents than for females (1040 males compared to 767 females). The data also showed that those most likely to be hospitalised were drivers, passengers and motorcyclists. Also, most of these accidents for this age group occurred due to running off a straight road and most of the accidents occurred on the weekend (Friday to Sunday).



SOURCE: TAC

FIGURE 7.3 Young drivers lives lost (1987–2018). Between 1987–2018, there was a significant decrease in the number of deaths of young drivers.

AOS 3

EXTENSION QUESTION 7.1

Justify why the situation in Figure 7.4 exists.

FIGURE 7.4 In their first year of driving, young drivers in Victoria are three times more likely to be involved in a fatal or serious crash than more experienced drivers.

ACTIVITY 7.1: ROAD TOLL CHANGES OVER TIME

1 Using the data provided in Figures 7.2 and 7.3, identify two trends relating to road crashes and youth.
2 Discuss a possible reason for each trend you identified in Question 1.
3 Research TAC or VicRoads road trauma statistics. Identify if there has been any changes in the trends shown in the data included in this chapter.
4 Predict the trends of youth road statistics in 10 years' time. Justify your response.
5 State whether you believe the Victorian Government needs to take action to address youth road statistics. Justify your response.
6 Outline a strategy that the government could introduce to best address the challenge of youth road toll mortality and morbidity rates.

ACTIVITY 7.2: SUMMARY MAP

Visit the TAC website and use the information in this chapter to collect data relating to the incidence, prevalence and changes over time to road-related injury for Australia's youth.

7.3 RISK FACTORS AND PROTECTIVE FACTORS

Risk and protective factors in relation to road safety are influenced by four main groups: communities, families, schools and peer groups. While these groups can enable risk taking behaviour, they are also seen as providing supportive environments for youth as they develop their road safety knowledge and skills.

Risk factors

Youth is a time when individuals take on new roles and responsibilities, and experiment with the things that represent adult life. The level of health and wellbeing experienced during this time is often influenced by a range of **risk factors**, which are factors that can increase the likelihood of poor health outcomes.

Some risk factors, when assessed against the possibility of harm or detrimental outcomes, may be seen as acceptable risks to take without significant negative consequences on health and wellbeing. For example, the physical risks, such as travelling overseas or taking on a new sporting activity, may be assessed against the possibility of harm or danger as low.

FIGURE 7.5 Understanding risk

risk factors: Factors that increase the chance of developing a problem or, if a problem exists, make it worse, affecting health and wellbeing and causing harm, injury or death.

Taking a risk can be exciting, but the consequences can be detrimental. Such consequences can include reduced health and wellbeing, long-term conditions, injury or death. Risk factors play an important role in the measurement of health and wellbeing. For example, the health risks of driving under the influence of alcohol are well documented, yet young people still drink and drive.

There is a link between the number of risks youth expose themselves to and the number of health concerns they face. As a result, there has been considerable research into the role of protective factors in reducing the number of unhealthy risks to which youth are exposed.

FIGURE 7.6 Risky driving behaviours are often linked with accidents.

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FIGURE 7.7 There are many reasons why a young person may take unhealthy risks.

Statistically, youth are constantly over-represented in traffic accident death and injury reports. Peers will often encourage youth drivers to fill their car with passengers. On occasions, drivers have tried to 'show off' to their mates by speeding, drink driving or just by being over-confident or getting distracted.

In a recent review by the Australian Transport Safety Bureau, it was found that young drivers were at greater risk on the roads for a range of reasons.

These reasons include:

- lack of experience – inexperience resulting in poor decision-making
- limited ability and judgement
- under-estimation of risks – driving in high-risk situations, such as late at night or with multiple passengers
- deliberate risk-taking behaviours – such as speeding, driving under the influence of drugs, or driving when fatigued
- distractions – such as mobile phones, passengers and music
- use of alcohol and drugs – including drink-driving.

Road crashes can be caused by human factors, vehicle factors, the road environment or a combination of these. Human factors account for 95 per cent of crashes (either alone or in conjunction with other factors).

FIGURE 7.8 There are many risk factors directly linked with youth road trauma.

EXTENSION QUESTION 7.2

A young person's peer group may pressure them into doing things or taking risks that they do not really want to. What advice could you give youth to avoid peer pressure to participate in risks that may increase the likelihood of being involved in a car accident?

EXTENSION QUESTION 7.3

Identify two risk factors relevant to the youth stage and justify why these factors are significant in relation to road safety.

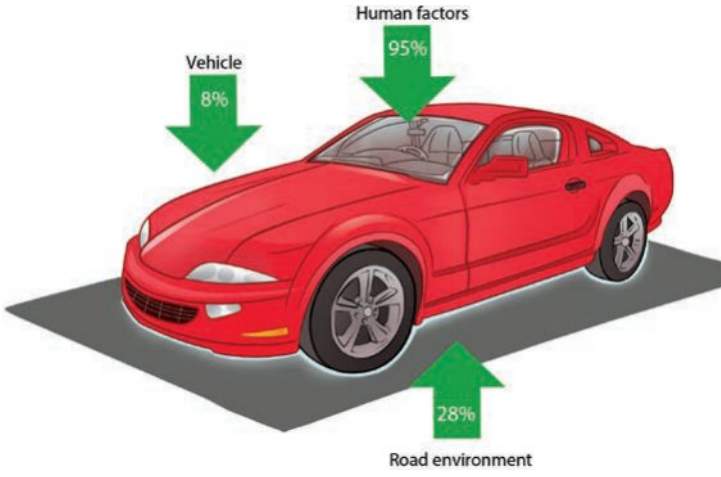

FIGURE 7.9 The percentage of motor vehicle crashes that have human factors, the vehicle and the road environment as causes (there is usually more than one cause).

Human factors encompass things that people do or don't do that contribute to an accident, such as speeding, not wearing a seatbelt or using a mobile phone while driving. Vehicle factors involve the design, safety features, mechanical faults of the vehicle and maintenance. The road environment includes the condition of the road, the weather conditions, the signage and the level of lighting.

Extensive research has investigated youth driving patterns and behaviours. The crashes in which youth are involved differ from crashes involving older drivers.

While many young people have been found to engage in some unsafe driving behaviours, it should be noted that most did so only occasionally. Only a small number (approximately 7 per cent) exhibited a consistent pattern of highly unsafe driving.

Protective factors

A protective factor is something positive in a person's life that helps them deal with challenges more effectively. Based on its survey of risk and protective factors, the Department of Human Services (DHS) in Victoria has identified community, school, family and friends as important supportive environments for youth.

FIGURE 7.10 There are many protective factors directly linked with positive youth road safety behaviours.

Families and schools can have a positive protective influence on road safety. Many schools provide education on driving and driver safety, teaching young drivers about road safety, and providing knowledge, experience and decision-making skills relating to driving. Experience and knowledge are two significant protective factors in relation to road safety.

Some factors can be both risk and protective. In the case of peer relationships, peers can place pressure on the young driver to speed along a stretch of road or encourage 'hoon driving', proving to be a risk factor regarding road safety behaviours. However, peers can also play a protective role by encouraging the young driver to follow speed limits, ensure seat belts are worn and that only the legal number of passengers are in the car.

FIGURE 7.11 Experience is a major protective factor in relation to road safety.

ACTIVITY 7.3: ASSESSING RISK

FIGURE 7.12 Road safety risk factors

1 Examine Figure 7.12. Rank each of the pictured risks in order (high risk to low risk).
- **a** Identify the behaviour you ranked as the lowest risk. Explain your reason.
- **b** Identify the behaviour you ranked as the highest risk. Explain your reason.
- **c** Identify three other risks youth might take when driving.
- **d** Identify five positive driving behaviours.

2 In pairs or small groups, create an original hashtag that could be used on social media to promote safer road use for youth. Share this hastag with your class and friends.

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7.4 COMMUNITY VALUES AND EXPECTATIONS

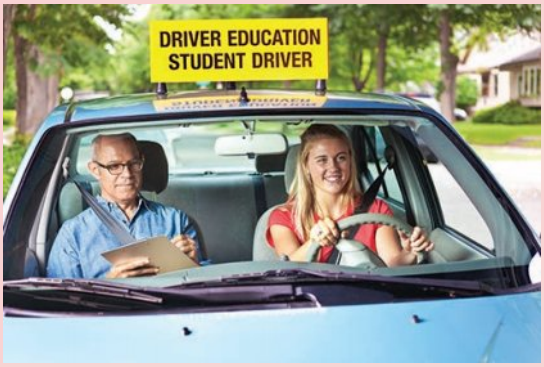
There is no doubt that the community expects and values safety on their roads, and that there has been a focus on improving the safety of our young drivers. The issue of driver safety is not just an important one for the health and wellbeing of youth, but also impacts friends, family, community and other road users.

One issue that is often discussed in the community is the age at which young people should be able to gain their licence. In Victoria, you can sit a test for your Learner's Permit at 16 years of age and your Probationary Driver's Licence at 18 years of age, providing you have completed all of the necessary requirements. At 18 years of age, not only can you legally drive on your Ps, but you are also legally allowed to drink alcohol. There is often debate around the age of driving, the age of drinking and the two being a combination that is not in line with community values.

When a person turns 18 years of age, they are deemed to be an adult. With this comes the responsibility to abide with the expectations of the community, including following laws and regulations. This involves being a responsible driver and complying with the road rules, and demonstrating safe driving behaviours. There is also the expectation that acting responsibly means drivers will not participate in risk-taking behaviours such as drink-driving and using their mobile phone while driving. Driving is deemed an adult responsibility, as is being able to legally drink – which is why both of these occur at the age of 18.

The community expects that youth will complete their learner hours to obtain experience in all road conditions and once a probationary licence is obtained, the expectations are that the road rules will be followed so all drivers are safe when using roads.

DISCUSS



1 Do you know at what age you can get your driver's licence in the United States? Do a quick Google search to find out.
2 Do you think that this is better than the situation in Australia? What is the legal drinking age in the United States? What are the implications of this for safe driving?

FIGURE 7.13 There is debate about whether young people should legally be able to drive and legally be able to drink at the same age. Is 18 years of age old enough to make the right decisions about responsible behaviours?

ACTIVITY 7.4: DEBATE

Break into groups. Determine who will argue for the affirmative and negative sides. Debate one of the following topics:

- Speed kills. Young drivers should have to drive at reduced speeds in the first year of having their licence.
- The government should make it compulsory for all new drivers to do a defensive driving course before they can get their licence.
- A Probationary Licence should be available at a younger age as it is irresponsible for people turning 18 to be able to both legally drink and legally get their licence.
- It should be law that cars driven by people with a Probationary licence are fitted with special technology that disables mobile phones while the engine is running.

Alternatively, develop your own road safety statement to be debated.

7.5 ROAD SAFETY HEALTHCARE SERVICES AND SUPPORT

The Australian healthcare system includes a wide range of government and non-government service providers, such as medical practitioners, specialists such as psychologists, allied health services, hospitals, research centres, pharmaceutical companies, rehabilitation services and private health insurers. Many of these health services are either partially or fully funded by Medicare. You will learn more about Medicare in Chapter 11.

AOS 3

FIGURE 7.14 Hospitals and emergency departments play a significant role in treating injuries received in road accidents.

Hospitals

The hospital emergency department is usually the first healthcare service and support (after an ambulance and paramedics) experienced by youth when involved in a road accident. It is from here that the required next medical treatment is determined and actioned. Some hospitals have trauma units specifically to treat people injured due to road trauma. This can include surgery, hospitalisation and specialists, which can involve long-term and short-term treatment. Further health services and supports may be required, depending on the injury and impact on health and wellbeing.

FIGURE 7.15 Rehabilitation is often a part of healthcare after being involved in a road accident.

ACTIVITY 7.5: HOW THE TRANSPORT ACCIDENT COMMISSION CAN HELP

The Transport Accident Commission (TAC) pays most of the costs of medical treatment, rehabilitation services, disability services, income assistance, travel and household support services to help a person recover after being injured in a road accident.

1 Visit the 'What to do after an accident' section of the TAC's website (available at https://cambridge.edu.au/redirect/8883). Using the information on this site, respond to the following questions.

- **a** Identify the types of treatments and support services available after an accident.
- **b** Investigate who can claim after an accident.
- **c** Outline the benefits of these health services.
- **d** Outline the disadvantages of these services.
- **e** Discuss why these services are available to people injured in road accidents.
- **f** Explain how these services are provided to people who have an approved TAC claim.
- **g** Describe the impacts of these services on the health and wellbeing of youth after an accident.

Rehabilitation

Health services are not just hospital-related. There are many inpatient and outpatient health services available to people impacted by road accidents to help them regain independence and return to everyday life. Programs include multi-trauma rehabilitation after a traffic accident, driver rehabilitation, amputee programs and programs for returning to work or recreation. The impacts of road accidents will vary for individuals, depending on the accident. Having a variety of services and supports available to respond to individual needs, both in hospital and at home, is vital for improved individual health and wellbeing.

FIGURE 7.16 Epworth Rehabilitation has an occupational therapy driver assessment and rehabilitation program. This program uses a simulator that mimics true driving situations and helps patients of all ages return to driving when they are safe and ready to do so.

7.6 ROAD SAFETY STRATEGIES AND PROGRAMS

Government and community strategies and programs

The Transport Accident Commission (TAC) is a Victorian Government-owned organisation established in 1986. The TAC's role is to promote road safety, support those who have been injured on our roads and help them get their lives back on track. The *Transport Accident Act 1986* (Vic) guides the TAC on the types of benefits it can pay and any conditions that might apply.

The TAC also has a legislated responsibility to reduce transport accidents and the impact of road trauma on the general community. The TAC has adopted an uncompromising approach to public education by addressing some of the key factors relating to road trauma. The TAC's accident-prevention strategy is multi-faceted allowing key road safety issues such as drink-driving, speeding, fatigue and young driver inexperience to be targeted in an effective and integrated manner. The TAC's current campaigns can be viewed at the Commission's website.

VicRoads is the government organisation responsible for managing Victoria's roads, including managing vehicle registrations and the licensing of drivers. The Victorian Department of Transport supports road safety strategies and provides information, statistics, education and resources to individuals, families and communities in relation to road safety and regulation.

In 1989, in response to the high number of lives being lost and serious injuries on Victoria's roads, the TAC and Victoria Police,

TAC Transport Accident Commission

FIGURE 7.17 The TAC was established in 1986.

FIGURE 7.18 A number of initiatives have been put in place to reduce road accidents including roadside drug and alcohol testing.

in conjunction with VicRoads, adopted an intensive and integrated approach to accident prevention. Since that time, the number of lives lost on Victorian roads has more than halved and there has been a drop in the number of serious injuries.

A number of initiatives have contributed to this reduction, including:

- a significant boost to enforcement resources targeting speeding and drink-driving
- high-profile, hard-hitting mass media campaigns to signpost change and help set the public agenda
- a sustained focus on key issues that are likely to deliver the greatest reductions in road trauma, such as drink-driving, speeding, fatigue and supporting young drivers
- close coordination of enforcement and publicity efforts
- public education programs directly supporting police enforcement efforts
- coordination of various state and community-based road safety bodies and an emphasis in research on developing evidence informed initiatives and evaluating their effectiveness.

More recently, the Towards Zero 2016–20 Road Safety Strategy is seen as the most ambitious action plan in Victoria's road safety history. This strategy will work towards a 20 per cent reduction in deaths and 15 per cent reduction in serious injuries in five years.

AOS 3

Towards Zero – Victoria Road Safety Strategy

Towards Zero is a partnership between the Transport Accident Commission, the Department of Transport (DoT), Victoria Police, the Department of Justice and Regulation and the Department of Health and Human Services to achieve zero deaths and serious injuries on our Victorian roads.

Towards Zero is the philosophy that underpins the way Victoria now approaches road safety. This strategy focuses on the belief that human health is paramount and that no one should die or be seriously injured when using the road.

Towards Zero acknowledges that people will always make mistakes and that people are vulnerable – as humans we have a limited physical tolerance to impact speeds above 30 km/h. To achieve zero deaths and serious injuries on the roads this strategy focuses on four key areas: safe roads, safe speeds, safe vehicles and safe people. This is a shared responsibility between everyone in the community.

FIGURE 7.19 A number of initiatives have been put in place to reduce the incidence of young drivers being injured, the most recent of which is Victoria's Towards Zero Strategy.

Road Smart

Funded by the Victorian Government, Road Smart is a free education program that helps prepare beginner drivers for a lifetime of safe driving. It is a foundation program that supports the Graduated Licensing System, and is for students and supervising drivers. Students receive a free in-car session with a qualified instructor. The in-car session can be via a school excursion off road, for those who do not yet have their learners, or on-road where the learner driver and their supervising driver have a session together with the driving instructor. A resource toolkit for teachers that is linked to the Victorian study design, and an interactive classroom session with a Road Smart facilitator is also part of this program.

FIGURE 7.20 State-supported driving programs assist Victorian youth to become safe drivers.

TAC L2P Program

The TAC funds the Department of Transport for the delivery of the TAC L2P program, a free state-wide program that matches young learner drivers with a supervising driver mentor. The purpose of the program is to enable eligible learner drivers to meet the GLS mandated 120 hours of driving practice prior to gaining their probationary licence.

ACTIVITY 7.6: ROAD SAFETY MEDIA CAMPAIGNS AND PROGRAMS

Review the TAC's current media campaigns on the TAC website.

1. Identify the important safety message in each of the road safety initiatives.
2. Identify the strategies used to make these campaigns successful.
3. Select one of these initiatives and discuss how it could impact on the health and wellbeing of youth.
4. Construct a different catchy road safety initiative jingle and/or slogan and logo aimed specifically at youth.
5. Research and describe a road safety program from VicRoads (Department of Transport) or the TAC that is aimed at young drivers.
6. What risk and protective factors does the program address?
7. In your opinion, how effective do you think this program will be in reducing youth injuries and fatalities due to road trauma?

ACTIVITY 7.7: GRADUATED LICENSING SYSTEM

In Victoria, the Graduated Licensing System (GLS) introduces young people to driving through progressive stages. A young person starts by being a learner, then moves onto P1 and P2 licences before becoming a fully licensed driver. Visit the VicRoads website to find out more about this strategy to improve the safety of young drivers, then answer the following questions.

1 Explain the aims of the GLS.

2 Outline the key features of the GLS.

3 State which key feature of the GLS you believe has the biggest impact on increasing road safety. Justify your answer.

4 Refer to data provided on the VicRoads' website. Describe a trend in this data.

5 Discuss the 'four important crash risk points' for the health and wellbeing of youth.

6 Suggest why some young people decide not to comply with the regulations.

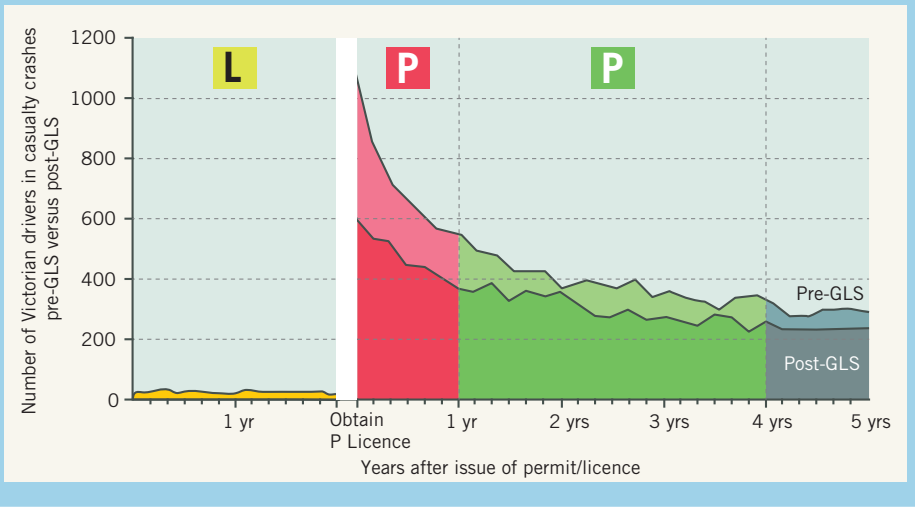


FIGURE 7.21 P drivers have more crashes than any other type of road user. Land transport accidents account for one in five deaths for people aged 15–24. Victoria's Graduated Licensing System helps young drivers stay safe by introducing them to driving in stages.

AOS 3

Personal strategies for road safety

A number of strategies can be adopted by individuals to promote positive road safety behaviours and youth health and wellbeing. These strategies include:

- driving with only one passenger, especially if you are an inexperienced driver
- always wearing a seatbelt and ensuring passengers are also 'buckled up'
- if driving friends, do not have the music up loud or get involved in distracting conversations
- turning off your mobile phone or, if it rings, making sure to pull over to the side of the road, park and turn off the engine to answer the call
- making sure you have 120 hours of driving experience in all weather and road conditions at different times of the day and evening
- never speeding, and always driving to the road conditions
- always driving carefully and safely
- making sure your car is serviced regularly and maintained in good condition, including keeping the tyres pumped up
- never driving under the influence of alcohol or drugs – if going to a party, nominate a designated driver or catch a taxi or Uber
- paying attention to your friends – don't let them drive if you believe they are not in a condition to do so.

EXTENSION QUESTION 7.4

Identify three road safety risk factors for youth health and wellbeing. Develop a personal strategy to reduce the impact of each of these risk factors.

FIGURE 7.22 Two of the best things you can do to keep yourself safe on the road are to always buckle your seatbelt and put your mobile phone away.

7.7 ROAD SAFETY: COSTS TO HEALTH

Ill-health carries with it a number of associated costs to both individuals and the community. Individuals suffering from ill-health will experience reduced health and wellbeing while the community, along with the smaller groups within it, suffers from the burden of the combined health problems of its members. Consequences of ill-health for both the individual and communities can include monetary costs in addition to costs relating to quality of life and productivity within society.

The costs of ill-health can be classified as **direct**, **indirect** or **intangible costs**.

Direct costs

Direct costs include costs that can be accurately quantified and are a direct result of the prevention, treatment or diagnosis of disease or illness. These costs often relate specifically to the monetary expenditure associated with treating or diagnosing illness, such as the costs of medical treatment and medication.

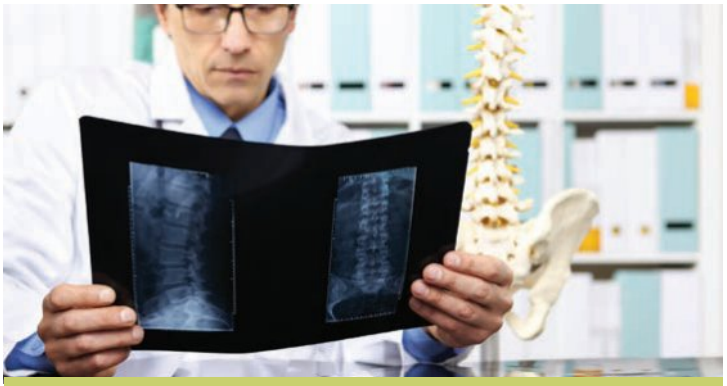


FIGURE 7.23 The financial costs associated with a diagnosis (e.g. x-rays, scans, doctor consultations, and treatments including pain medication) are examples of the direct costs of road safety.

Indirect costs

Indirect costs are measures that are more difficult to value in monetary terms. Indirect costs are costs incurred because of the consequences that an illness has had on an individual's quality of life, work and social activities. Indirect costs do not include costs associated specifically with treating or diagnosing a disease or illness.

Indirect costs to the individual represent the value of lost output due to reduced productivity caused by an illness, and any resultant disability or premature death. For example, an injured person may be unable to perform household chores, so they may need to pay someone to complete these tasks. Indirect costs to the community relate to reduced productivity and the loss or partial loss of the unpaid contribution of people to the functioning of households and communities.

direct costs: Can be quantified accurately in terms of monetary costs and are a direct result of the prevention, treatment or diagnosis of disease or illness.

indirect costs: The secondary costs to individuals, communities or families as a result of suffering from a disease or illness (these costs do not relate directly to the illness or disease and are often difficult to quantify in terms of money).

intangible costs: The human (social and emotional) costs of loss of quality of life.

Intangible costs

Intangible costs include those costs that cannot be associated with a dollar value and that relate to the human costs (social and emotional) of loss of quality of life rather than the financial impact. Examples of indirect costs include the pain, suffering or anxiety associated with an illness experienced by an individual, their family or their community.

Costs to youth health and wellbeing: road safety

TABLE 7.3 Costs to youth health and wellbeing: road safety

TYPE OF COST	COST OF ROAD SAFETY TO INDIVIDUALS	COST OF ROAD SAFETY TO COMMUNITIES
Direct	• Financial costs of medical treatment and Medicare patient co-payments • Financial costs of any medication (e.g. pain medication) needed because of an injury from a road accident • Financial costs of allied health services such as physiotherapy for rehabilitation	• Cost of healthcare services to the government – including Medicare and subsidising prescription medications through the Pharmaceutical Benefit Scheme • Cost of maintaining emergency services to respond to road accidents • Costs associated with the implementation of health-promotion programs aimed at road injury (e.g. Towards Zero and L2P – learner driver mentor program) • Cost of implementing road safety improvements (e.g. safety barriers)
Indirect	• The young person or their family having to pay for long-term care if the young person is disabled • Loss of income if the young person is unable to work due to being injured • If they can no longer drive due to an injury from a road accident, the young person or their family having to pay for transport (e.g. taxis and Uber) • The young person or their family having to pay for their home to be altered (e.g. installing ramps) to accommodate the young person's injuries • The young person or their family having to pay other people to do tasks they can no longer undertake (e.g. household chores)	• Government contributions to the costs of long-term care for young people who are disabled due to injury from road accidents • Lost productivity in the workplace • Government welfare payments (e.g. the National Disability Insurance Scheme) paid to young people impacted by road accidents • Loss of taxation revenue if the injured young person is unable to work and pay tax • Cost of repairs to property and road infrastructure as a result of a road accident
Intangible	• Feelings of being a burden to others, especially if needing support due to injury from a road accident • Feelings of reduced quality of life • Stress and anxiety experienced due to injuries and/or recovery	• Grief and anxiety when a loved one is killed or injured in a road accident • Concern and stress about the health and wellbeing of a community member • Loss of contribution to the community (e.g. being a member of a sports team or volunteering for local community organsiation such as Surf Life Saving Clubs)

7.8 ROAD SAFETY: ADVOCACY AND ACTION

There is some good news regarding road safety. While there are still too many young people dying or being injured on our roads, we are seeing some improvement and a reduction in young driver statistics. This is the result of health-promotion programs, and government and community strategies focused on road safety. Yet there is always opportunity for youth **advocacy** and action to improve health outcomes and **equity**.

There are many ways in which individuals, communities and governments can continue to take action and improve youth road safety; for example, reviewing and evaluating educational programs to determine their effectiveness in promoting road safety education.

Advocacy is another way to take action to improve youth road safety. An advocate is a person who publicly supports or recommends particular causes or policies, usually on someone else's behalf. There are often people who advocate on behalf of young people, as they may not always be able to speak up for themselves.

It is important that young people feel empowered to speak up when friends or peers are considering or participating in risk-taking behaviours. The statistics tell us that more young people die in road accidents in rural areas or just outside metropolitan areas. Are the young people who live in these areas experiencing inequity in road safety strategies and education? Young people have the opportunity to be advocates for road safety and act as role models for other young people by adhering to and spreading the road safety message through vlogs, blogs, podcasts and social media.

FIGURE 7.24 Be an active advocate and promote positive road safety within your school or local community. You could use the VicRoads' 'Looking after our mates', an interactive drink- and drug-driving information presentation about responsible driving and looking after each other.

advocacy: The act of speaking on behalf or in support of another person, place or thing.

equity: Equity in relation to health and wellbeing refers to addressing the causes of inequality and providing strategies to ensure fairness. Equity is not about treating everyone equally but rather providing what individuals or groups require for health and wellbeing (VCAA FAQ, © VCAA).

Other examples of ways to take action to help improve youth road safety include individuals becoming volunteer mentors in the TAC L2P Program, which supports those who do not have access to a car to obtain driving experience. Also, schools can take action by providing road safety programs for their students.

Advocacy can occur in many different ways including policy change, community programs and campaigning. The key aim of youth advocacy is the empowerment of vulnerable young people, giving them a voice in the betterment of their own health and wellbeing. When implementing a plan addressing health equity it is important to consider:

- health issues that need addressing
- causes of the inequalities (and what can be done to achieve 'a level playing field')
- strategies that are currently in place
- areas for opportunity
- best ways to act for action (advocacy)
- key stakeholders involved.

DISCUSS

How might you advocate for youth road safety?

ACTIVITY 7.8: FIND YOUR OPPORTUNITY FOR ACTION

1 As a class, walk around your local area or school boundary and determine the areas that pose the greatest risk to road safety. Identify ways action could be taken to improve road safety. For example, could a roundabout replace an intersection, could traffic lights be installed, could speed limits be reduced, or could a new school crossing be installed? Collate the road safety action ideas from your class. Prepare statements that could be shared with your local council to improve road safety.

2 Using the data from this chapter, create a brief video or series of slogans reinforcing positive road use to reduce the selected statistics and improve youth health and wellbeing. Share these with other students in your class. Share your action plan on the 'Have your say' section of the Towards Zero website (available at https://cambridge.edu.au/redirect/8884).

ACTIVITY 7.9: RESEARCH A CHALLENGE TO YOUTH

Now that you have studied the issue of road safety, select another youth health and wellbeing focus area to research.

Examples of appropriate youth health and wellbeing focus areas include:

- alcohol misuse
- illicit drug use
- sexual and reproductive health
- weight issues
- mental health issues
- body image
- injury
- smoking
- bullying
- food allergies.

Use the internet and the resources identified in Chapters 6 and 7 to investigate your selected focus area. You must gather information using a range of sources, including primary and secondary data sources.

Write a critical analysis report that includes the following information:

- ☐ a description of the youth health and wellbeing focus area
- ☐ the impact on different dimensions of health and wellbeing
- ☐ data on the incidence, prevalence and trends
- ☐ risk and protective factors
- ☐ community values and expectations
- ☐ healthcare services and support
- ☐ government and community programs and personal strategies to reduce impact
- ☐ direct, indirect and intangible costs to individuals and/or communities
- ☐ opportunities for youth advocacy and action to improve outcomes in terms of health and equity.

AOS 3

CHAPTER SUMMARY

- This chapter investigates the key features of one health and wellbeing issue for youth: road safety.
- Road safety impacts on health and wellbeing in the following ways:
  - **physical** – long-term pain may be a result of injury from an accident
  - **social** – due to injury, independence may be reduced, decreasing opportunities to form new relationships
  - **mental** – being in a road crash may lead to stress and contribute to a person no longer being able to cope with the common demands of everyday life
  - **emotional** – may contribute to poor resilience if a person struggles to cope after an accident
  - **spiritual** – connections to friends, the community or family may change after an accident contributing to a loss of a sense of belonging.
- Youth are over-represented in road trauma statistics; this is despite the reduction in the number of young drivers dying in road accidents.
- TAC statistics indicate that young people aged 18–25 years are three times more likely to die in a car accident than older, more experienced drivers.
- Risk and protective factors impact road safety:
  - **Risk factors** are factors that increase the chance of developing a problem or, if a problem exists, making it worse. Risk factors affect health and wellbeing and increase the chances of harm, injury or death occurring. Examples of risk factors in relation to road safety are speeding, age and alcohol use.
  - **Protective factors** are positive factors in a person's life that decrease the chance of the person developing a problem or, if a problem exists, make it better. Protective factors promote health and wellbeing and reduce the risk of harm, injury or death. Examples of protective factors in relation to road safety are education, driving a safe car, and driving on safe roads.
- The community's values and expectations in relation to road safety include that all road users should drive safely on the road and young drivers should follow the road laws, such as driving at the speed limits and not being distracted by mobile phones.
- Road safety is targeted by healthcare services and support, government and community programs, and personal strategies, including:
  - healthcare services and supports – hospitals, rehabilitation services, counselling and driving programs
  - government and community strategies and programs – the Graduated Licensing System, TAC road safety campaigns, and education programs
  - personal strategies – wearing a seatbelt, following road rules, obeying driving laws, and not getting distracted while driving.

- Road safety has direct, indirect and intangible costs for individuals and communities:
  - **Direct costs** to health and wellbeing are those costs that can be quantified accurately, and result from the prevention, treatment or diagnosis of disease or illness. Direct costs include doctors' fees, ambulance transport and medicines.
  - **Indirect costs** to health and wellbeing are those costs that are secondary costs to individuals, communities and families that occur as a result of suffering from the disease or illness (i.e. indirect costs do not relate directly to the illness or disease). Indirect costs include loss of productivity in the workplace and loss of income by being unable to work.
  - **Intangible costs** to health and wellbeing are those costs that relate to the human (social and emotional) costs of loss of quality of life, and include feelings of grief, stress or anxiety.
- There are opportunities for youth advocacy aimed at improving the health outcomes in relation to road safety:
  - advocacy is the art of speaking on behalf of, or in support of, another person, place or thing
  - youth can spread the road safety message through vlogs, blogs, podcasts and social media.

KEY QUESTIONS

SUMMARY QUESTIONS

1. Identify the causes of road accidents.
2. Define the terms 'risk factors' and 'protective factors'.
3. Select three risk factors and three protective factors and explain how each factor might impact on road safety.
4. Outline the importance of community and government strategies promoting youth health and wellbeing. Include an example of one in your response.
5. Describe the impact of road injury on each dimension of youth health and wellbeing.
6. Identify and explain two personal strategies that youth could implement to improve road safety.
7. Explain the differences between direct, indirect and intangible costs.
8. A strong, cohesive family is a protective factor for many health issues. Describe the importance of family for young people.
9. Describe the impact of road injury on youth health status.
10. Explain the community values and expectations in relation to road safety and how these might impact on youth health and wellbeing.
11. Describe a program that is working towards reducing the youth road toll.

EXTENDED-RESPONSE QUESTION

Consider the following information.

TAC Towards Zero

Safety is a shared responsibility

We, along with our road safety partners, are working to achieve the vision of no deaths or serious injuries on our roads. We are moving towards a future where every journey is a safe one.

It is not acceptable to see death or serious injuries as inevitable on our roads and, in line with the 2016–22 Victorian Road Safety Strategy, we are working to reduce road trauma.

To achieve this, the Victorian road safety partners (VicRoads, Victoria Police, the Department of Justice, and the Transport Accident Commission) have adopted a Safe System philosophy to road safety. This method aims to minimise risks and considers the interaction between roads, vehicles, speed and road users.

The principles underpinning this approach are that:

- people make mistakes
- people have a limited tolerance to injuries
- safety is a shared responsibility.

The safe systems model is key to seeing positive change on our roads. This model is based on having safe roads, safe vehicles, safe speeds and safe people.

For us to achieve the goal of zero deaths and serious injuries we must all work together – not only at a government level – the whole community must get behind it and we must all believe that zero is possible.

Our road safety education programs and campaigns, community partnerships and local government engagements are all part of bringing the community on the journey towards zero.

SOURCE: TAC

SOURCE: Towards Zero campaign website

FIGURE 7.25 The four areas of the Towards Zero campaign

QUESTION

Explain how the Towards Zero campaign aims to meet community expectations and reduce the costs associated with road accidents by addressing a range of potential risk factors. (8 marks)

EXAMINATION PREPARATION QUESTIONS

Ariana and Joseph are both in Year 11 at the local secondary college. Joseph enjoys school and tries hard to get good results. He hopes to go to university to study veterinary science. This puts a lot of stress on Joseph and he tends to push himself to achieve his best at times. Joseph is quite responsible. He doesn't talk much to his mum and dad, even though they are always asking him about his day, but he does respect them and follow their rules. After school and on weekends, Joseph plays futsal, works part-time at a local fast-food outlet, does his chores around the house, and spends time with his two best friends. If he does go out at night on the weekend, he always informs his parents where he is going and makes sure he is home by 11 pm.

Ariana is always in trouble with her teachers. She is aggressive and argumentative with them and admits that she does not like school very much, except for lunchtime when she plays basketball with her friends. Ariana is quite popular and hangs out with a large group of male and female friends. After school and on weekends, she enjoys spending time with her friends and particularly her best girlfriend, who is 16. Ariana is a member of the local basketball club, where she has made a lot of older friends who all have their drivers' licences.

Most weekends, Ariana goes out with her friends from the basketball club, and participates in a number of unhealthy behaviours, including smoking cigarettes, drinking alcohol and experimenting with illicit drugs. She also allows her mates to drive her around, even though she is aware that they may have been drinking or taking drugs. Ariana does not fight with her parents very often, but she shows very little respect for them and tries to avoid communicating with them most of the time. Ariana is contemplating moving out of home with some of her friends at the end of the year.

A Identify three health issues that may be faced by Ariana and/or Joseph during youth. (3 marks)

B Select one of these issues and describe the possible impact on the health and wellbeing of Ariana and/or Joseph. (4 marks)

C Outline two healthcare services available to assist Ariana and/or Joseph with their issue. (2 marks)

D Identify a protective factor that could assist Ariana and/or Joseph to deal with this health issue. Explain how the protective factor could promote the health and wellbeing of Ariana and/or Joseph. (3 marks)

E Outline one example of action being taken by the government or a community group that is targeting the health issue selected. Justify why it has the potential to assist youth like Ariana and Joseph. (4 marks)

UNIT 2

MANAGING HEALTH AND DEVELOPMENT

AREA OF STUDY	OUTCOME
1 Developmental transitions	On completion of this unit, the student should be able to explain developmental changes in the transition from youth to adulthood, analyse factors that contribute to healthy development during prenatal and early childhood stages of the lifespan and explain health and wellbeing as an intergenerational concept.
2 Healthcare in Australia	On completion of this unit, the student should be able to describe how to access Australia's health system, explain how it promotes health and wellbeing in the local community, and analyse a range of issues associated with the use of new and emerging health procedures and technologies.

8 THE TRANSITION FROM YOUTH TO ADULTHOOD

KEY KNOWLEDGE

- Overview of the human lifespan
- Definitions and characteristics of development, including physical, social, emotional and intellectual
- Developmental transitions from youth to adulthood.

KEY SKILLS

- Describe the developmental changes that characterise the transition from youth to adulthood.

(VCAA Study Design, © VCAA)

AOS 1

INTRODUCTION

This chapter explores the concept of the human lifespan, and the various changes that occur between birth and death. The physical, social, emotional and intellectual development that occurs throughout the lifespan is introduced, as well as how each of the four characteristics of development impact on each other. This chapter particularly focuses on the youth stage of the lifespan. Youth is a period of significant change in a person's life, and we explore the changes that take place as young people move from childhood to adulthood.

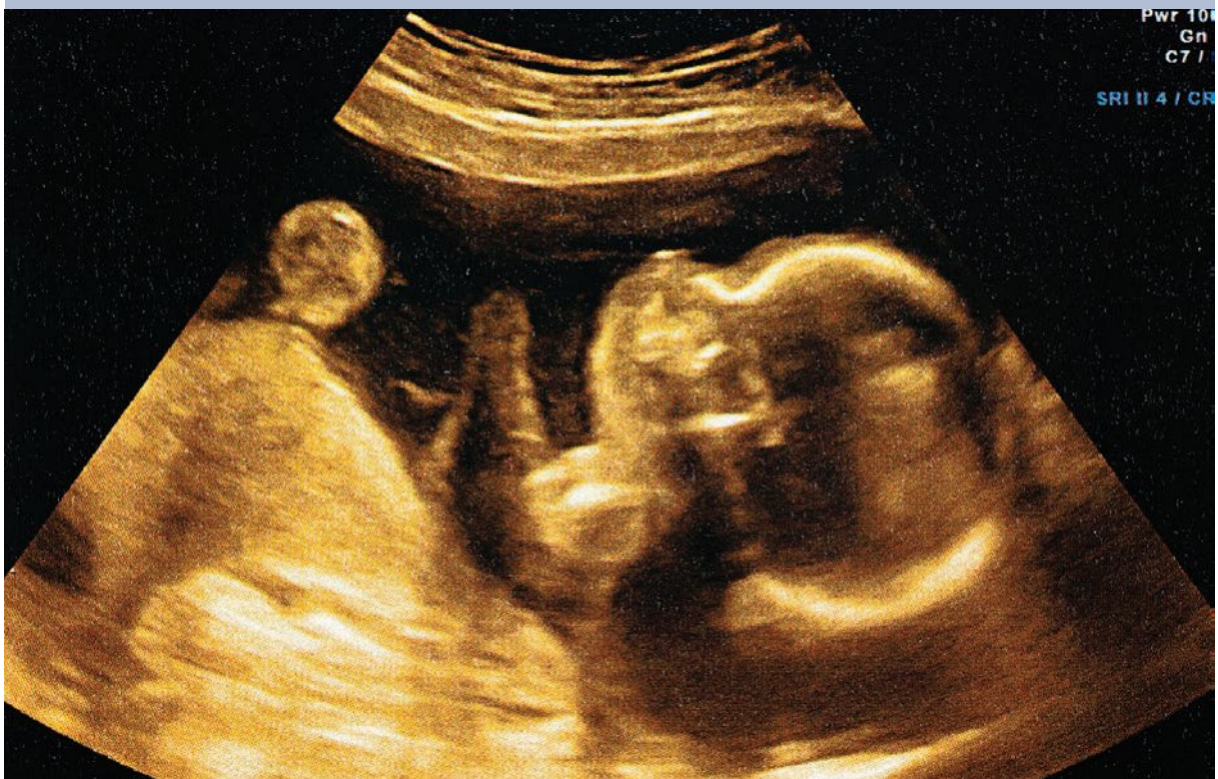
What you need to know

- Identify the stages of the lifespan from birth until death.
- Describe the ages that apply to each stage of the lifespan and the key developmental milestones that occur in each stage.
- Identify and describe the characteristics of the four types of development, which include:
  - physical
  - social
  - intellectual
  - emotional.
- Describe examples of the various types of development that youth experience as they transition from being a child to being an adult.

What you need to be able to do

- Describe the various developmental changes that youth go through on their journey to adulthood.

FIGURE 8.1 During the prenatal stage of the lifespan, the most rapid growth of any stage of the human lifespan occurs.



8.1 OVERVIEW OF THE HUMAN LIFESPAN

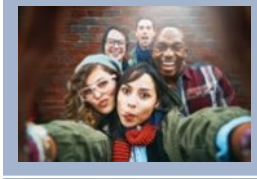
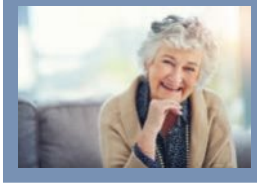
The human lifespan consists of a series of orderly, predictable stages that begin at the time of an individual's conception and end with their death. The different stages are often associated with an approximate age and certain **developmental milestones**. There are variations, however, in the abilities and experiences of individuals that lead to diversity in their development. These variations mean that not everyone agrees on the precise length or age range of each lifespan stage. There is also some debate over the number of stages an individual experiences during their lifetime. The human lifespan is perceived differently by different groups within the community. These differences are often culturally based. For example, some cultures consider a person to be an adult before they reach the age of 18, which is the legal age of adulthood in Australia. Their movement into adulthood at a certain age may be based on achieving religious milestones (e.g. acquiring a certain level of religious knowledge) or attaining a level of social responsibility, such as being able to provide income for the family or care for younger children.

developmental milestone: A task, undertaking or event that is expected to be achieved in order to successfully progress to a further level of development.

Throughout the lifespan, an individual experiences different forms of growth and development. These are often referred to as developmental tasks, and each stage is characterised by events and expectations relating to development. The changes that are experienced by an individual as they move through the lifespan are greatly affected by both inherited influences (what they inherit in their genes) and environmental influences (the influence of external factors from the environment in which they live, such as their culture, access to healthcare and level of income).

Table 8.1 identifies the stages of the lifespan and the approximate ages for each stage, as considered by the majority of the Australian population.

TABLE 8.1 Stages of the lifespan

STAGE OF THE LIFESPAN	AGE RANGE
Prenatal 	Conception to birth
Infancy 	Birth to two years
Childhood 	Two to 12 years
Youth 	12–18 years
Early adulthood 	18–40 years
Middle adulthood 	40–65 years
Late adulthood 	65 years and older

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Stages of the lifespan

Prenatal

The prenatal stage begins at fertilisation and ends with the birth of a baby. It is the most rapid period of growth during the lifespan, where one initial cell multiplies rapidly to become 200 billion cells by the time the child is born. Generally, a full-term pregnancy is 40 weeks long and during this time all body structures and organs develop and begin to function.

Infancy

This stage of the lifespan begins at birth and ends when the child turns two. The growth of an individual during this stage is very rapid, with the child doubling in size by their first birthday. Initially, the infant needs to adapt its body functions to the external environment; for example, developing temperature control and using a grasping reflex. During this lifespan stage, the infant learns to eat, crawl, walk, and communicate by forming noises and then words. Their social interactions begin with smiling, followed by the use of words and imitation of gestures.

motor skills: The ability to move, through gaining and exercising control over the large and small muscles of the body.

development: The gradual changes in an individual's physical, social, emotional and intellectual states and abilities.

FIGURE 8.2 During infancy, an individual learns to walk and begins to talk.

FIGURE 8.3 Childhood is a time of constant and steady growth.

Childhood

The childhood stage of the lifespan begins when an individual turns two and ends when they turn 12. Through the process of socialisation, behaviour is increasingly appropriate for the different situations they experience. Children learn basic physical, social, emotional and intellectual skills that they continue to refine throughout this stage of the lifespan. Physically, growth slows down and is at a steady rate, while children develop and refine their **motor skills**. Social interaction increases through an increased vocabulary and more sophisticated use of language and expression.

Youth

The youth stage begins when an individual turns 12 and ends when they turn 18. It is a period of significant **development**, and by the end of the stage, physical and sexual maturity is achieved. Individuals become more independent and spend more time with their peers and less time with their families. Search for personal identity becomes important, and through academic and personal success, self-concept and self-esteem can increase. Individuals develop the ability to think abstractly and consider the thoughts and opinions of others. There is an increased focus on education and the development of career plans and goals. Individuals may explore their sexuality and intimate relationships.

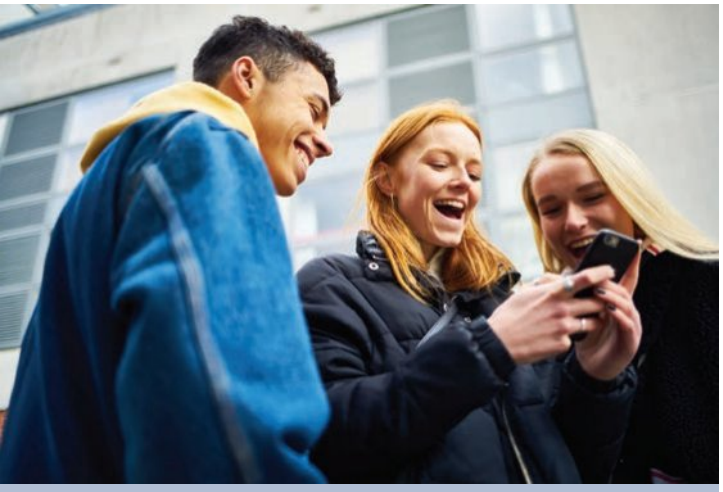

FIGURE 8.4 Youth is a time of significant change. Young people start spending more time with their peers and less time with their family.

Adulthood

Adulthood begins when an individual turns 18 and continues for the remainder of an individual's life. Due to this very long period of time, and the significant development that occurs during this time, the adulthood stage is commonly divided into three further stages: early, middle and later adulthood.

Early adulthood

Early adulthood begins when an individual turns 18 and ends at their fortieth birthday. The peak of physical development is reached, after which a decline in physical abilities may begin. During this stage, people experience sexual relationships. The formation of permanent intimate relationships and the establishment of a new family may occur. Young adults are likely to experience increased self-esteem as success through career, family and independent activities such as travel is found. Individuals often learn new skills through the completion of further education and the development of their career.

Middle adulthood

Middle adulthood begins with an individual turning 40 and ends when they turn 65. This stage is characterised by more pronounced aging, with greying of hair and an increase in wrinkles due to loss of elasticity in skin. A decline in muscle strength and sensory organs can occur. **Menopause** usually commences in women while men experience a reduction in sperm count and erectile function. Generally, individuals experience advancement and peak of their career during this stage, along with possible further study and changes in career. There are increased feelings of belonging and self-worth through the development of new friendships through children's activities. Family changes may include loss of parents and children moving out of home.

FIGURE 8.5 During early adulthood, individuals are likely to study and may form permanent intimate relationships.

menopause: The cessation of menstruation.

FIGURE 8.6 During middle adulthood, individuals can develop new friendships by meeting people through their children's activities.

Later adulthood

This final stage of the lifespan begins with an adult turning 65 and ends with death. The body's ability to function efficiently continues to decline and muscle tone is lost, which leads to mobility issues and problems with digestion and eliminating waste. Stiffness in joints continues to increase and senses continue to decline. Bones become more brittle as the ability to absorb calcium decreases.

Individuals may struggle to adjust to retirement, but a sense of belonging can increase through making valuable contributions to society through volunteer work. Self-esteem and self-concept can be impacted with the decline in quality of health and wellbeing and having to change living arrangements due to being unable to live independently. Individuals may experience the devastating loss of a spouse as well as more positive changes to family such as the arrival of grandchildren.

FIGURE 8.7 During later adulthood, individuals can experience an increased sense of self through the arrival of grandchildren.

ACTIVITY 8.1: STAGES OF THE LIFESPAN

Create a summary table similar to the one below. Using the table, outline the stages of the human lifespan and the key developmental milestones that occur in each stage.

STAGE	AGE RANGE	TWO KEY DEVELOPMENTAL MILESTONES
Prenatal		
Infancy		
Childhood		
Youth		
Early adulthood		
Middle adulthood		
Later adulthood		

ACTIVITY 8.2: DEVELOPMENTAL MILESTONES

1 Explain the concept of developmental milestones. Give an example of a developmental milestone that you have experienced.

2 Identify which stage of the lifespan a person is most likely to experience the following:

a says a real word for the first time

b lives on their own or with a partner for the first time

c retires

d gets their first job

e learns to crawl
f graduates from school
g joins a sporting team
h learns the alphabet
i expresses a wide range of emotions
j gets their driver's licence
k chooses a career.

3 Choose a range of photos of yourself at different ages and stick them on a piece of A3 paper or arrange them in a digital document.
a Annotate the pictures to describe the overall changes in your physical appearance and characteristics over time.
b For each photo, identify the age you were and outline three key developmental milestones that typically occur at this age.
c Share your work with the class.

8.2 CHARACTERISTICS OF DEVELOPMENT

As a person lives out their lifespan, they experience many changes. These changes may relate to how their body looks and functions – such as growing taller – or how they interact with other people – such as being able to listen and speak. These changes are referred to as **growth** and development.

Growth is **quantitative** in nature, and refers to the increase in cell number, size and complexity within the body. Increases in height, weight and body mass are examples of growth that can easily be measured. Development is a term used to describe the gradual changes in our physical, social, emotional and intellectual states and capabilities as we move through life. The changes associated with development are mainly **qualitative**, and they cannot easily be measured or quantified.

Development requires change. It involves a gradual and progressive change in ability or capability. In addition, development relates to changes that are understood to have a permanent or lasting effect – or at least an ongoing impact – on the way an individual functions. For many people, in later life, the impact may be a regressive change, such as decreases in eyesight and hearing ability.

Physical development

Physical development refers to those changes that occur in an individual's body over time, including growth. Physical development occurs in a variety of categories, including body size, body proportions or shape, overall body structure and function such as tissue make-up (muscle-to-fat ratio), skeletal growth and hormone production. Physical development also involves changes in physical abilities categorised as **motor development**.

At birth, an infant has **reflexes** that control their movements. They are involuntary and include actions such as grasping (if the palm of the hand is touched) and sucking (when something touches their lips). As the infant's motor development takes place, the reflexes become voluntary actions referred to as motor skills.

growth: The measurable changes in the body that are mainly due to an increase in the number and size of the body's cells.

quantitative: To measure, count or gain an idea of how much change is occurring by looking at quantities or amounts.

qualitative: To make subjective judgements or assumptions about development; describes changes that cannot be measured easily.

physical development: The changes that relate to people's size and shape, and therefore body structure.

motor development: A form of physical development that relates to the way an individual develops muscle function.

reflex: An involuntary action.

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FIGURE 8.8 Voluntary actions are called motor skills.

FIGURE 8.9 Playing tennis is an example of a gross motor skill.

A motor skill is a physical action that requires the utilisation of skeletal muscles. Muscles also depend upon the proper functioning of the brain, skeleton, joints and nervous system. Motor development therefore depends on muscles, bones and the nervous system maturing, and it follows the same pattern in almost every person. Each skill appears in order, with simple skills setting the stage for more complex skills, such as when an infant moves from lying to lifting their head, to sitting, to crawling, to standing and finally to walking.

gross motor skills: The ability to control the movement of larger muscle groups within the body.

fine motor skills: The ability to control the movement of smaller muscle groups within the body.

Motor skills are divided into two types: gross motor skills and fine motor skills.

Gross motor skills

The term **gross motor skills** refers to the ability of individuals to carry out activities that require large muscles or groups of muscles. These muscles should act in a coordinated fashion to accomplish a movement or a series of movements. Examples of tasks that utilise gross motor skills include:

- lifting the head
- balancing
- walking
- running
- throwing something
- jumping.

Fine motor skills

Fine motor skills involve small muscle movements of the hands, feet and muscles of the head (such as the tongue, lips and facial muscles) in coordination with the eyes, and the use of very precise motor movements in order to achieve a particularly delicate task. Fine motor skills include the ability to manipulate small objects, transfer objects from hand to hand, and various hand-eye coordination tasks. Some examples of activities that employ fine motor skills are:

- writing
- sewing
- drawing
- imitating subtle facial gestures
- pronouncing words (coordination of soft palate, tongue, lips)
- manipulating a computer mouse.

FIGURE 8.10 Knitting is an example of a fine motor skill.

Approximate age ranges have been determined for each motor skill. The skill that appears the most often within a particular age range is called the **norm** for that age. Gross and fine motor skills are particularly evident during the lifespan stage of childhood. During youth, the skills are refined and this process continues into adulthood, but begins to decline in middle and later adulthood. Some of the major motor skills that children and youth develop are identified in Table 8.2.

norm: A standard, model or pattern generally regarded as typical.

TABLE 8.2 Gross and fine motor skills

AGE GROUP	GROSS MOTOR SKILLS	FINE MOTOR SKILLS
Infancy	Sits without support Crawls Walks with help	Reaches, grasps, puts objects in mouth Drops and picks up toy Builds tower of small blocks
Early childhood	Walks alone Hops, skips and jumps Runs, but child is still developing control of speed and direction Able to throw and catch	Scribbles Paints with whole arm movement Holds crayon with thumb and finger (rather than fist) Swipes tablet or phone screen Presses buttons
Late childhood	Runs slightly on toes Balances on a beam or board Hits a ball with a racquet or bat	Writes with a pen using finger movements Uses a computer mouse to control a cursor Manipulates fingers for musical instruments
Youth	Increases ability to dodge and climb (e.g. better control of footing for rock climbing) Increases ability to catch and throw accurately Constructs objects with large tools	Performs very complex hand movements (e.g. playing a musical instrument) Writes rapidly and neatly Uses a needle and thread to sew complex stitches Uses small tools

ACTIVITY 8.3: MOTOR SKILLS

1 Explain what a reflex is and provide an example of a reflex.

2 Explain why infants are born with reflexes.

3 Describe how the development of motor skills can impact the way a person interacts with others.

4 For each of the following, identify the relevant motor skill. Also indicate an approximate age at which a person would start to be able to perform these tasks:

a bouncing a ball

b painting with some wrist action

c using a small screwdriver

d striking a ball with a bat

e playing difficult pieces of music on a piano

f dribbling a basketball

g climbing a rope

h balancing on a surfboard

i using video game buttons (e.g. PlayStation, Nintendo DS)
j drawing accurate lines with a ruler.

5 Referring to Figure 8.9, outline the motor skills being demonstrated in this photo.
a Identify the large muscles being used for this activity.
b Identify the body structures that allow this person to play this sport.

6 Referring to Figure 8.10, outline the motor skills being demonstrated in this photo.
a Identify the small muscles being used in this activity.

Social development

Social development is the increasing complexity of behaviour patterns used in relationships with other people. It is concerned with the ways in which an individual's ability to interact with those around them changes as they move through the lifespan. Social development involves learning how to communicate with different groups of people.

An individual experiences positive social development when they learn how to behave in an acceptable way with other people. As a person develops socially, they learn to display appropriate behaviours, allowing them to interact more fully with others. These interactions occur mainly through the use of language – in both spoken and written forms – or via physical actions.

An important component of an individual's social development is their **socialisation**. Socialisation is the process by which a person learns to live with others and also learns appropriate patterns of behaviour and thought. As an individual develops, there is a deliberate and conscious effort made through active training to help individuals to learn the values and expectations of the society in which they live. A person needs to learn to adjust their behaviour according to the rules for appropriate behaviour in that society in order to be a successful part of the community. The learning of appropriate behaviour is a lifelong process.

social development: The increasing complexity of behaviour patterns used in relationships with other people.

socialisation: The process of acquiring values, attitudes and behaviours through interacting with others.

DISCUSS

Explain how family can assist in the socialisation of children.

Apart from the family, there are many influences on a person from outside environments. Some other important agents of socialisation include the media, peer group, school and religion. Parents have the most direct effect on the development of the child, acting as role models. In addition, to a certain degree parents control the environment of a child in different ways. They allow the child to experience specific settings outside of the home environment, such as a school, museum or gallery, church, temple or mosque. Extended family, such as grandparents, aunts and uncles, also contribute to the socialisation process.

ACTIVITY 8.4: THE PROCESS OF SOCIALISATION

FIGURE 8.11 There are many agents of socialisation.

1 Referring to the photographs in Figure 8.11, identify the socialising agents that impact the social development of individuals throughout their lifespan. List other socialising agents.
2 Using the photographs in Figure 8.11, provide examples of what is learned through the socialisation process.
3 Discuss other examples of socially acceptable behaviour that allow you to interact with others in a positive manner.
4 List and describe the different forms of communication that you frequently use to relay information.
5 Explain how the forms of communication identified in Question 4 enhance your social development.

Learning the expectations of gender (or **gender roles**) is an important developmental task associated with social development. A person also learns what are considered to be appropriate gender roles through their cultural experiences.

Parents have a key role in guiding their children through their development in this area. Learning these roles also occurs through the process of imitating observed behaviour. In the case of gender, this may involve imitating the tasks and attitudes of the same-sex parent. The onset of the physical changes of puberty may also result in a change in the way the children are perceived and treated by their parents, family and community, depending on their culture. These changes can mean many differences in the opportunities males and females face, based on their sex. The concept of gender roles can present challenges for individuals, especially if their particular interests lie outside those which are traditionally expected of them. For example, males who study nursing or females who are interested in playing football can face difficulties and barriers in achieving their goals.

gender roles: A set of social, cultural and often political expectations that prescribe how females and males behave.

DISCUSS

Explain the term 'gender role'. Discuss why gender roles can be difficult to break.

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Intellectual development

Intellectual development is also commonly referred to as cognitive development. This type of development involves changes in how a person is able to think and reason as they grow older. Intellectual development includes the formation of intelligence and basic cognitive skills that occurs from infancy onwards. An infant initially relies on using their senses to learn things about themselves and the environment in which they live. Gradually, as the individual progresses through infancy, childhood and youth, they develop skills in the following:

intellectual development: (Also called 'cognitive development'.) The ways in which people are able to think and reason.

- recognition and memory of objects, words and events
- the establishment and expansion of vocabulary, and the use of their vocabulary in speech and communication
- understanding of concepts – concrete and abstract concepts
- the ability to think logically and to reason (to see another person's point of view).

During adulthood, the individual undergoes maintenance, improvement or decline of these intellectual skills and abilities as they age.

Although there is no general theory of intellectual development, the most historically influential theory was developed by psychologist Jean Piaget. Piaget identified four stages of development, shown in Table 8.3.

TABLE 8.3 Piaget's four stages of intellectual development

DEVELOPMENTAL STAGE	DEVELOPMENTAL MILESTONES
Sensorimotor stage (infancy) 	During this stage, infants are busy discovering relationships between their bodies and the environment. Knowledge of the world is limited (but developing) because it is based on physical interactions and experiences. Children acquire memory at about seven months of age. Physical development allows the child to begin developing new intellectual abilities. Some language abilities are developed at the end of this stage.
Pre-operational stage (toddler and early childhood) 	In this stage, intelligence is demonstrated through the use of symbols. Language use also matures as the child's vocabulary increases. Memory and imagination are developed, but thinking is done in a non-logical, non-reversible manner. Egocentric thinking predominates – a child has difficulty understanding life from any other perspective than their own.
Concrete operational stage (later childhood and early adolescence/youth) 	In this stage, intelligence is demonstrated through logical and systematic manipulation of symbols related to concrete objects. Operational thinking develops (mental actions that are reversible) and the child begins to reason logically, and organise their thoughts coherently. However, the child can only think about actual physical objects and cannot reason abstractly. Egocentric thought diminishes.
Formal operational stage (youth/adolescence and continues for all of adulthood) 	In this stage, intelligence is demonstrated through the logical use of symbols related to abstract concepts. The individual is able to reason contrary to fact. This stage is also characterised by the ability to formulate hypotheses and test them in order to arrive at an answer to a problem. Early in the period, there is a return to egocentric thought.

ACTIVITY 8.5: PIAGET'S STAGES OF INTELLECTUAL DEVELOPMENT

1 Define 'intellectual development'.

2 Refer to Table 8.3 on the previous page. State in which stage of intellectual development an individual can start to perform the following skills:

- **a** problem-solve
- **b** remember names of objects, people and events
- **c** reason and display moral judgement
- **d** use language and words to represent things
- **e** use imagination (e.g. to invent a story)
- **f** organise thoughts coherently
- **g** display good pronunciation in their speech
- **h** understand another person's perspective
- **i** learn the essentials of taking turns in games or conversations
- **j** observe and understand multiple points of view.

3 Discuss how participation in education influences a person's progression through the stages of intellectual development (as outlined in Table 8.3).

FIGURE 8.12 The establishment and expansion of vocabulary is part of an individual's intellectual development.

Emotional development

Emotional development refers to feelings and the ways in which an individual learns to express, understand and exercise control over them. Emotions are the reaction of a person to a situation that invokes feelings. Emotions can be expressed through facial expressions and physical movements. Examples of emotions include sadness, happiness, fear, anger and disgust.

Developing a sense of self-esteem and the closely related self-concept also forms an integral part of emotional development. This is the process by which a person develops a sense of self and is aware of the importance of gaining social acceptance and experiencing achievement.

Self-esteem and self-concept

Self-esteem generally refers to how we feel about or how we value ourselves (our self-worth). Self-concept refers to the general idea we have of ourselves. Self-esteem and self-concept are very closely linked, and in fact self-esteem can refer to particular parts of self-concept. A person develops and maintains their self-concept through the process of taking action and then reflecting on what they have achieved, as well as what others tell them about their achievements. A person's self-concept is developed or constructed by them as they interact with the environment and reflect on that interaction. It is therefore variable throughout the lifespan.

emotional development: Refers to feelings and moods, and the ways in which people learn to express, understand and exercise control over them.

Self-esteem and self-concept consist of the judgements an individual makes about their characteristics and qualities, including their attitude about themselves and their sense of worthiness. It can therefore affect the control and expression of emotions. During early development, children tend to have a vague, general concept of who they are – hence their development of self-esteem and a self-concept is at a fairly unsophisticated stage. As the child develops, their idea of 'who they are' gradually grows into concepts about themselves in various contexts or situations – as students at school, in relation to peers, in relation to family and also as an emotional, physical and intellectual being.

The development of self-esteem is a component of emotional development. As the individual increases their sense of self and self-worth, they enhance other abilities and develop greater control over their emotional responses to different situations.

FIGURE 8.13 A sense of accomplishment is one way of developing self-esteem and self-concept.

Stages of emotional development

As an individual moves through the lifespan, they experience the following changes in their emotional development.

Infancy

The child develops trust and security and a basic optimism. Some negative experiences may cause the child to become insecure and mistrustful. Emotional responses change from basic reactions to more complex, self-conscious responses when the child learns and expresses new emotions such as joy and happiness, or anger and frustration.

Independent behaviours increase with parental encouragement around feeding, dressing and toilet training – this starts the process of developing self-esteem. The infant also becomes attached to a small group of people (family members).

Childhood

During early childhood, the nurtured child emerges from this stage sure of who they are and excited about their new-found control and self-sufficiency. This creates feelings of pride; however, it is not entirely linked to self-assurance, initiative and independence. Some children express tantrums, stubbornness and negativity. During later childhood, the individual learns to broaden their skills through active play of all sorts, to cooperate with others, and to lead and follow others. Motivation for further development occurs through achievements, recognising abilities and interaction with others, which all build self-esteem. The child also develops some coping strategies for problem-solving and stress tolerance.

Youth

The young person learns to master the more formal skills of life, relating to peers and participating in play that may be structured by rules and demand formal teamwork.

The need for self-discipline increases yearly. The young person also learns how to answer the question 'Who am I?'. But even well-adjusted adolescents experience some role identity issues. Many adolescents experiment with minor delinquency and self-doubt. At this time of life, the individual's friendships have greater emphasis on new emotions of intimacy and loyalty. There is also an increase in conformity due to peer pressure.

EXTENSION QUESTION 8.1

Explain what motor skills are and how the development of each type of motor skill impacts the social and emotional development of an individual.

Adulthood

The successful young adult can experience true intimacy – the kind of intimacy that makes a good marriage or a genuine and enduring friendship possible. Self-esteem increases as an individual's self-concept becomes actualised through the development of a personal identity.

The mature adult develops the peak of adjustment: integrity. When an individual reaches the adult level of emotional development, they have established a personal identity through the development of their self-concept. The adult has also developed greater control and coping mechanisms for the emotional stresses related to adulthood responsibilities and commitments, such as career and intimate relationships.

ACTIVITY 8.6: CHARACTERISTICS OF DEVELOPMENT

Draw a table similar to the one below. Complete the table using your understanding of the four types of development.

	DESCRIPTION	EXAMPLES
Physical		
Social		
Intellectual		
Emotional		

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8.3 TRANSITION FROM YOUTH TO ADULTHOOD

Youth is the period in a person's life during which they transform from childhood to adulthood. It is a time when the individual experiences a unique form of physical growth known as puberty.

More recently, the term 'youth' has become a more contemporary reflection of not just physical changes but also the social, emotional and intellectual changes that a person experiences at this stage of their life. The time of life that encompasses youth revolves around attaining the maturity of adulthood in both body and mind.

Youth can also be divided into smaller stages that include early, middle and late youth.

Early youth is the stage when the focus of development is on changes associated with physical maturity.

During middle youth, individuals tend to be preoccupied with being 'normal' and being accepted by their peers. It is also a time when feelings of physical attraction to others begin and young people usually become curious about sex. It is during this time that relationships with family and other carers may change, and there may be a greater desire to spend more time with peers than with family. There can also be an increase in parent–child conflict.

Late youth is the stage when the focus of development is on self-discovery and answering questions such as 'Who am I?' There is also greater emphasis on the development of more intimate relationships. Major developmental milestones associated with this division of youth into stages include the following.

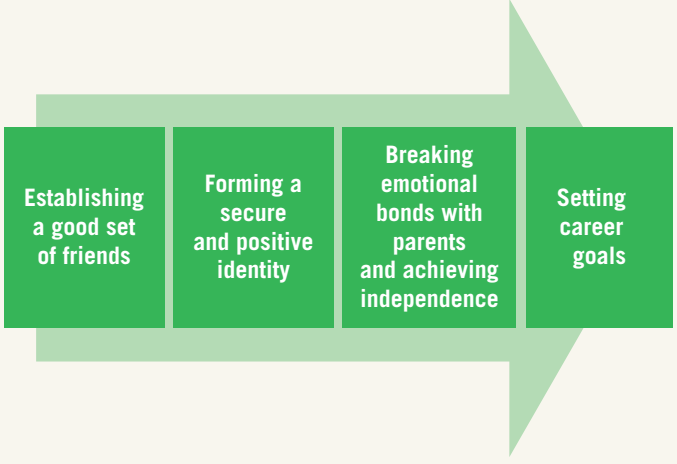

FIGURE 8.14 Psychologist Michael Carr-Gregg states that there are four main developmental tasks associated with adolescence and the transition to adulthood.

Early youth: 12–14 years

In early youth, individuals:

- increase their vocabulary to 40 000 words (nearly double the number of words from ages 8–9)
- choose friends based on common interests, rather than parent selection
- begin the process of sexual maturation, both physically and emotionally
- become more interested in community goals (e.g. service to others)
- begin to physically develop into the size and shape of an adult.

FIGURE 8.15 In early youth, individuals begin to physically develop into adults.

Middle youth: 15–16 years

In middle youth, individuals:

- increase their hypothetical reasoning abilities
- conduct an increasing amount of future planning
- experience further sexual maturation and explore issues of sexual identity
- exhibit greater complexity of moral reasoning, including abstract principles such as selflessness and a sense of humanity
- tend to rely increasingly on similarity of values and shared interests to form friendships
- spend more time with friends and less time with parents
- refine their interests and abilities, gain skills in one or more activities.

Late youth: 17–18 years

In late youth, individuals:

- become occupied with thinking about the future
- explore more long-term relationships
- exhibit moral standards and may get involved in causes
- become less self-conscious about their body
- become more independent and self-reliant, and less influenced by peer groups
- develop the thinking capacity of an adult.

FIGURE 8.16 In late youth, individuals are often most interested in close friendships and dating.

Overall, during late youth, young people are most interested in exploring personal identity, career interests, dating and learning about the issues they will face when living in the adult world.

It is important to note that not all young people experience the transition from childhood to adulthood in the same way or within the same timeframe. Youth can be difficult to classify because it is not universally defined, and the social and cultural changes that indicate the end of youth are highly variable.

DISCUSS

Discuss the experiences you have had that signify you are transitioning from childhood to adulthood.

FIGURE 8.17 Youth is a time of significant change.

AOS 1

8.4 PHYSICAL TRANSITIONS FROM YOUTH TO ADULTHOOD

Physical development is a major component of the individual's experience during youth. Physically, youth begins with the onset of **puberty** and ends with physical maturity (which includes a mature reproductive system). The changes are rapid and often drastic, resulting in rapid growth and physical maturity. The physical **maturation** of the body results in an individual developing the characteristics that define them sexually. This maturation also allows them to be able to produce children. Changes in physical appearance are the most striking aspect of physical development.

puberty: The time signifying the end of childhood; a time during which significant changes to the way an individual's body structure and functions occur in terms of skeletal and sexual maturation.

maturation: The process whereby a person gradually realises their genetic potential.

Both the male and female bodies take on a different shape. The rate and timing of these changes is not the same for everyone. Other physical changes within the body also take place, including an increase in the size of muscles, bones, organs and the reproductive system.

The role of hormones

When the body is nearing the onset of sexual maturity, it releases hormones, which are chemical substances released into the bloodstream. They coordinate, regulate and balance the working of organs and cells. The release of these hormones into the body is controlled by the **endocrine system**, which is made up of a number of glands. One of the integral glands responsible for the changes that occur during puberty is the pituitary gland, which is located at the base of the brain. Once the reproductive organs (the testes and ovaries, also referred to as **gonads**) mature, it is possible for the individual to produce hormones responsible for further sexual maturity and the ability to reproduce.

endocrine system: A body system made up of glands that release hormones to control body functions.

gonad: A gland in the body that produces the sex cells (called gametes); in humans, the gonads are the testes in males and the ovaries in females.

TABLE 8.4 Parts of the endocrine system, their function and the hormones they produce

GLAND	FUNCTION OF GLAND	HORMONES PRODUCED
Hypothalamus	Produces hormones that travel in blood vessels to the pituitary gland, stimulating it to produce other hormones. It also links the endocrine system to the nervous system.	Hormone-releasing factor GH – growth hormones (targets all cells)
Pituitary gland	Activates other glands and produces a number of hormones, including growth hormone.	Growth hormone TSH – thyroid-stimulating hormone (acts on the thyroid) ACTH – adrenocorticotropic hormone (acts on the adrenal glands) FSH – follicle-stimulating hormone (targets the ovaries and the testes) LH – luteinising hormone (targets the ovaries and the testes)
Thyroid gland	Produces thyroxine, which provides overall control of the rate of chemical processes in the body – called the metabolic rate.	Thyroxine

TABLE 8.4 Parts of the endocrine system, their function and the hormones they produce *(continued)*

GLAND	FUNCTION OF GLAND	HORMONES PRODUCED
Adrenal glands	Produce adrenaline, which speeds up the heart rate and gets the body ready for emergency action. Adrenal glands are so called because they are next to the kidneys (ad – near or at; renes – kidneys). They also produce the androgen aldosterone that stimulates the development of some of the male characteristics.	Adrenaline, aldosterone, cortisol
Ovaries (females)	Produce female sex hormones (including progesterone and oestrogen), which control body changes at puberty and during the menstrual cycle.	Oestrogen, progesterone
Testes (males)	Produce male sex hormones (including testosterone), which control body changes at puberty and also sperm production.	Testosterone

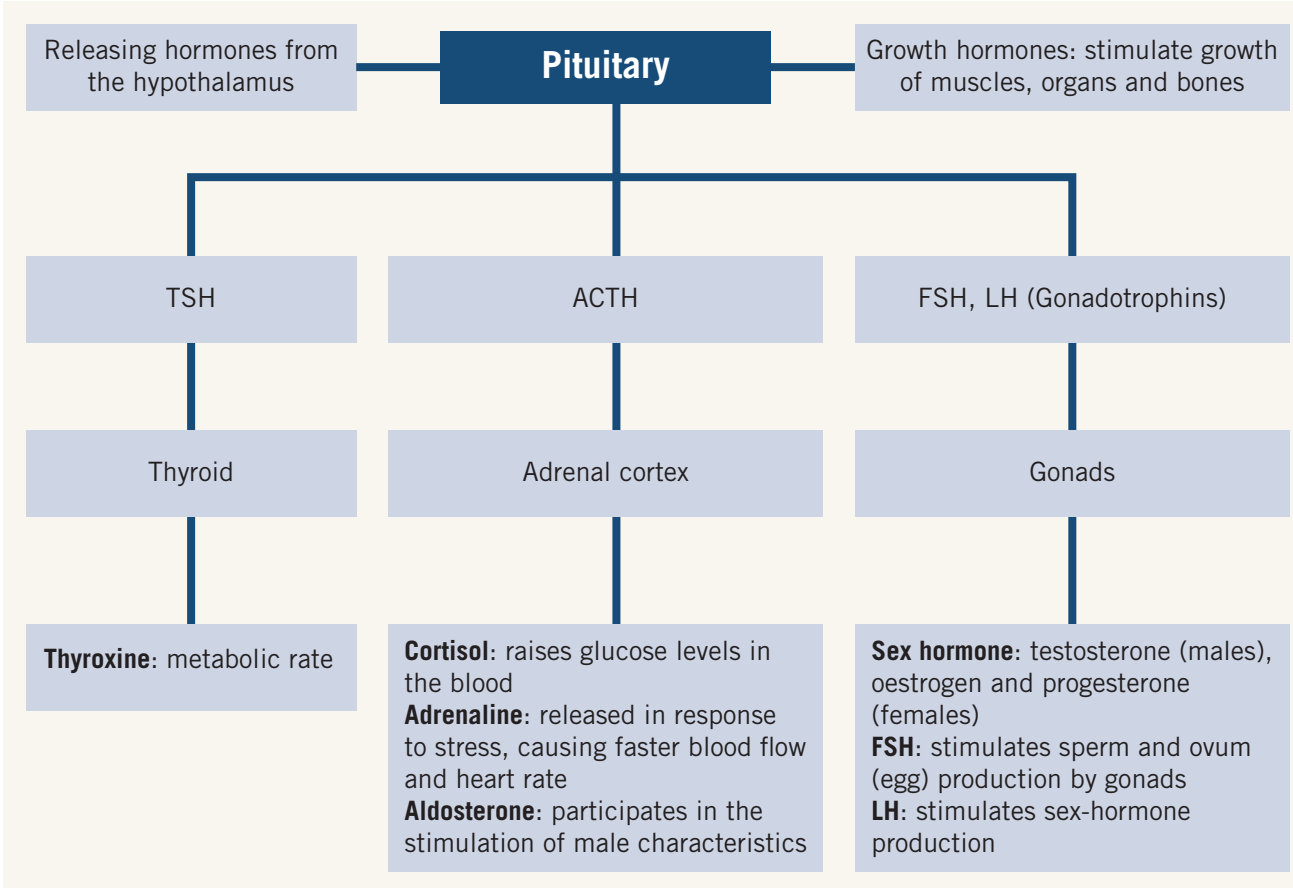

FIGURE 8.18 The hormones produced by glands and their functions

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ACTIVITY 8.7: HORMONES AND PUBERTY

1 Explain the term 'puberty'.
2 What are the gonads? Name the gonads that are found in females and the gonads found in males.
3 Identify where the pituitary gland is situated in the body.
4 The pituitary gland is often referred to as the 'master gland'. Explan why this is the case.
5 Identify all the hormones that are produced by the pituitary gland.
6 Choose two hormones produced by the pituitary gland and identify the parts of the body they target.
7 Produce a mindmap showing all the glands and hormones that are involved in the process of female sexual development.

Puberty

Puberty is the time of development when young people become physically mature and capable of reproduction. The three types of physical change that occur during this period of life are:

- the **growth spurt**
- the development of **primary sexual characteristics**
- the appearance of **secondary sexual characteristics**.

Growth spurt

During puberty, the pituitary gland releases growth hormone (GH) and the body experiences a major growth spurt. The release of this hormone enables the body to grow larger by increasing the number and size of cells. Rapid growth is experienced by the soft tissue (muscles and organs), which become larger, and hard tissue (bones), which lengthen and harden or ossify.

The speed of growth at this time is astounding. In males, for example, growth occurs at approximately 10 cm of height per year. However, not all parts of the body grow simultaneously and during this time an individual can seem out of proportion in relation to their overall size. Eventually the body fills out and will be in proportion. When this growth period is over, the body is at its adult height. There is also weight gain and the overall body shape changes.

FIGURE 8.19 An individual reaches their adult height during puberty.

growth spurt: A period involving a rapid increase in height and body mass. A major growth spurt occurs as a consequence of the onset of puberty.

primary sexual characteristics: Characteristics that develop during puberty that are related to the development of the sex organs and reproductive system of males and females, enabling them to reproduce.

secondary sexual characteristics: Characteristics that develop during puberty that indicate sexual maturity but are not related to a person's ability to reproduce.

Since females generally begin their growth spurt a couple of years before males, they are on average taller than males from ages 11–13. From age 14 onwards, most males have gained a height advantage that is never lost. They also develop an increase in strength and muscular development. Body fat increases for both genders at puberty, but the gains are greater for females. By the end of youth, males are stronger due to their increased muscle mass and they have larger organs, including their heart and lungs, compared with females.

The timing and progress of the changes related to the growth spurt are determined primarily by the genetic inheritance of the individual. An individual may be genetically predisposed to be an early or late developer in relation to the expected age norms for puberty.

ACTIVITY 8.8: DIFFERENCES IN GROWTH FOR MALES AND FEMALES

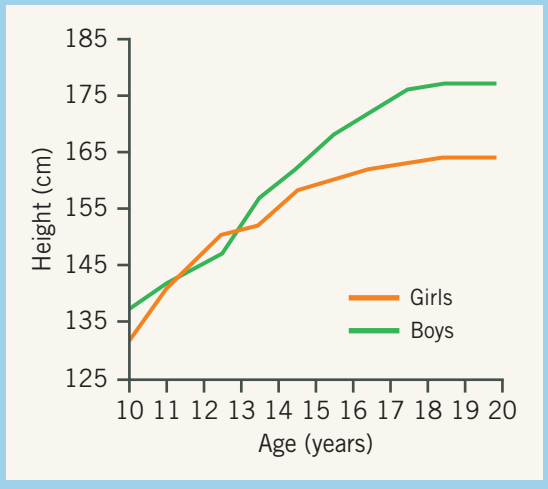


FIGURE 8.20 Differences in height between boys and girls

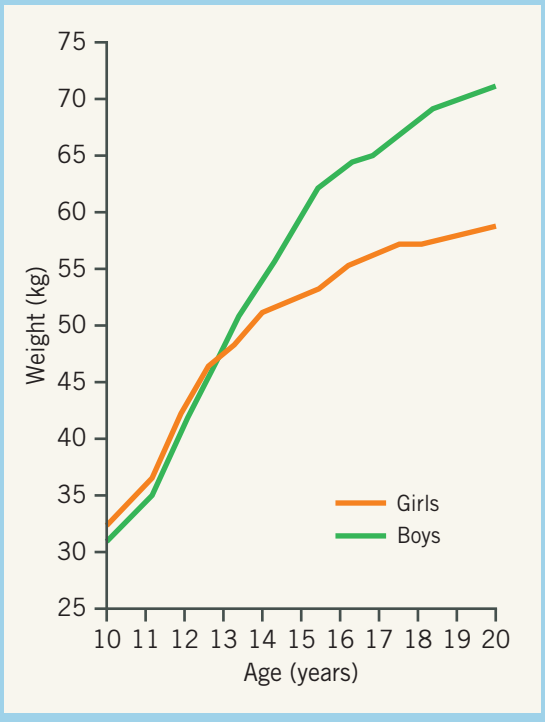


FIGURE 8.21 Differences in weight between boys and girls

1 Identify the main hormone involved in a growth spurt.

2 Explain why many young people seem out of proportion during a growth spurt.

3 Use the data in Figure 8.20 to describe the average changes in height for both boys and girls from the ages of 10–18 years.

4 Use the data in Figure 8.21 to describe the average changes in weight for both boys and girls from the ages of 10–18 years.

5 Explain why there are differences between males and females in height and weight.

6 Survey the members of your class to determine the average height of males and/or the average height of females in your class.

- **a** Outline how your class averages compare with the averages in Figure 8.20.
- **b** State the range of differences in height among the members of your class.
- **c** Suggest some possible reasons for the differences in height among the members of your class.

The timing of puberty may also be affected by factors such as stress, nutritional deficiency, illness, athletic training or diet-related diseases.

Primary and secondary sexual characteristics

As the individual approaches puberty, the brain and pituitary gland release hormones that regulate the reproductive organs of both males and females. These hormones stimulate the ovaries of females to produce other hormones called **oestrogen** and **progesterone**, and the testes (testicles) of males to produce **testosterone**.

oestrogen: The female sex hormone responsible for sexual development.

progesterone: The female sex hormone involved in the female menstrual cycle.

testosterone: The principal male sex hormone.

Many of the changes experienced are quite different for males and females, so it is important to examine these changes individually for each sex.

The primary sexual characteristics refer to reproductive organs that an individual is born with and that allow them to procreate.

Secondary sexual characteristics refer to those changes that make males and females look like mature men and women. Often these developments change the contour and shape of the body.

Primary sexual characteristics in males

In males between the ages of approximately 12–15 years, the pituitary gland produces LH (luteinising hormone) and FSH (follicle-stimulating hormone), which together stimulate the production of the sex hormones. The first sign of the development of the primary sexual characteristics is enlargement of the testes and a thinning and reddening of the scrotum.

Generally, for males, the peak growth period of the reproductive organs occurs about two years after the beginning of puberty. As the penis grows in length and thickness, the internal sexual organs enlarge. The vas deferens that transport sperm from the testes to the urethra develop, and the prostate gland begins to generate fluids that contribute to the development of seminal fluid. A year or so after the acceleration of the growth of the penis, the first ejaculation of seminal fluid occurs. It might take the form of a spontaneous nocturnal emission (often referred to as a 'wet dream').

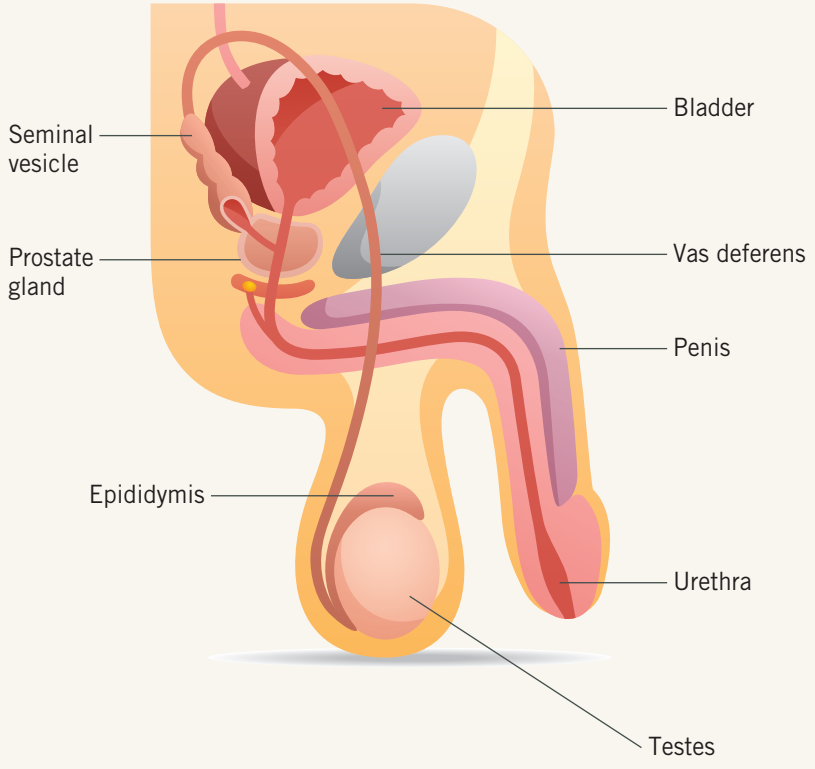


FIGURE 8.22 The male reproductive system

TABLE 8.5 The male reproductive system

MALE REPRODUCTIVE SYSTEM	FUNCTION OF THE PART OF THE SYSTEM
Penis	The penis is the male sex organ; it is used to transport urine from the bladder and to transport semen to the outside of the body.
Testes	The testes is the oval-shaped organ that rests in the scrotum; it produces sperm and the male hormone testosterone.
Epididymis	The epididymis is part of the testes; it holds maturing sperm until needed for ejaculation.
Vas deferens	The vas deferens are the tubes that carry mature sperm to be ejaculated.
Prostate gland	The prostate gland releases secretions that are vital for the production of semen for ejaculation.
Seminal vesicle	The seminal vesicle produces seminal fluid, which combines with sperm to form semen.
Urethra	The uretha is the tube that runs the length of the penis; it carries urine and sperm to the outside of the body.

Secondary sexual characteristics in males

The testes start to produce testosterone, which begins the development of secondary sexual characteristics. Height changes are nearly complete by around 16 years of age. Muscle continues to develop at a more dramatic rate and in a very different pattern to the laying down of fat during youth. Males develop larger skeletal muscles and greater heart and lung capacity. They also have increased numbers of red blood cells compared with females. This allows them to carry more oxygen from the lungs to the muscles, which helps them to gain more muscle strength. Overall, males experience a dramatic increase in size, strength, speed and endurance due to the action of testosterone.

Other male secondary sexual characteristics include the appearance of pubic hair as well as hair under the arms and on the face. The hair on legs and arms becomes coarser and, for some males, chest hair may appear. Another distinctive secondary sexual characteristic for males is the deepening of the voice. During puberty, the larynx lengthens and becomes larger. This causes the voice to 'break' on its way to becoming deeper.

Secondary sexual characteristics in males can be summarised as:

- the voice breaking and then deepening
- hair growing on the face and body hair increasing
- the body becoming more muscular
- the appearance of pubic and under-arm hair.

FIGURE 8.23 The growing of facial hair is a secondary sexual characteristic for males.

Primary sexual characteristics in females

In females between the ages of approximately 10–14 years, the pituitary gland produces luteinising hormone (LH) and follicle-stimulating hormone (FSH), which together stimulate the production of the sex hormones by the ovaries.

The two most important hormones made by the ovaries are oestrogen and progesterone. These are known as the female sex hormones. The ovaries also produce a small amount of the male hormone, testosterone. During puberty, oestrogen stimulates breast development and causes the vagina, uterus and fallopian tubes to mature. It also plays a role in the growth spurt and alters the distribution of fat on a girl's body, typically resulting in more fat being deposited around the hips, buttocks and thighs. The small amount of testosterone helps to promote muscle and bone growth.

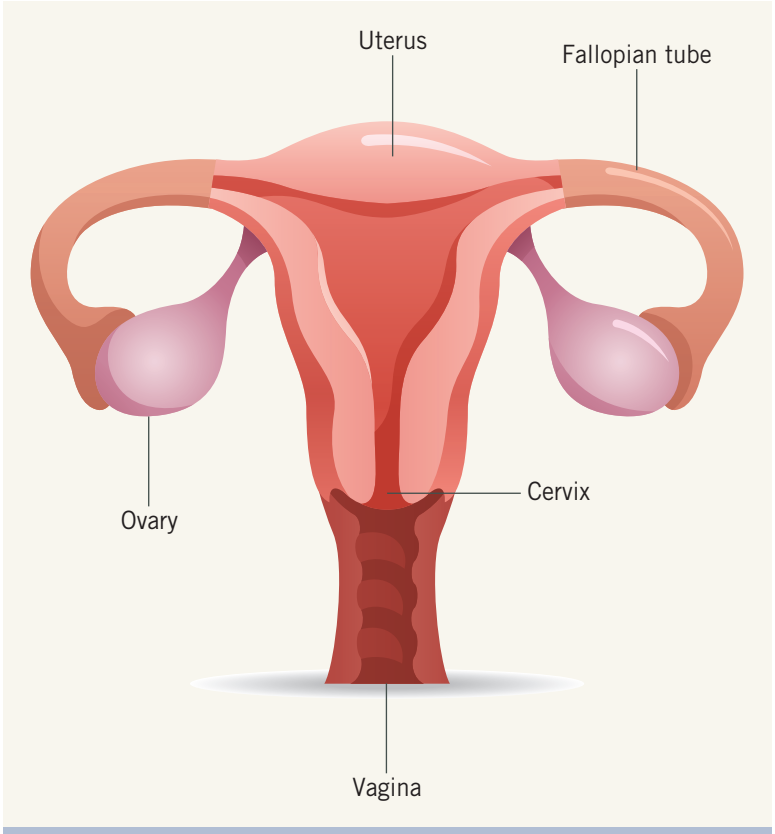


FIGURE 8.24 The female reproductive system

menarche: A female's first menstruation or period.

The first time a female's body is mature enough to experience a menstrual cycle is referred to as the **menarche**. The menarche is a direct result of the development of the ovaries to a point where they are able to produce the sex hormones oestrogen and progesterone.

TABLE 8.6 The female reproductive system

FEMALE REPRODUCTIVE SYSTEM	FUNCTION OF THE PART OF THE SYSTEM
Ovary	The ovary is a small organ that stores the ova (eggs) until they have matured. The ovary releases a mature ovum at the time of ovulation. The ovary also produces the sex hormones oestrogen and progesterone.
Uterus	The uterus (also known as the womb) is part of the female reproductive system. The uterus provides a suitable environment for the implantation of a fertilised egg.
Fallopian tube	The fallopian tube (also known as an oviduct) connects to the uterus; it draws in the ovum at the time of ovulation and carries it to the uterus. The fallopian tube is the site where fertilisation takes place.
Cervix	The cervix is the opening at the end of the vagina that leads to the uterus.
Vagina	The vagina (also known as the birth canal) is the muscular passage that connects the uterus to the outside of the body.

In order for the menarche to occur LH, FSH, oestrogen and progesterone need to be produced and released in a certain pattern. This results in the maturation of an egg (ovum), which is then released from the ovary to begin its journey down the fallopian tube and into the uterus. If the ovum isn't fertilised, the levels of oestrogen and progesterone produced by the ovary begin to fall. Without the supporting action of these hormones, the lining of the uterus is shed, resulting in the first 'period'.

The menstrual cycle

The menstrual cycle involves a delicate interplay of hormones. The cycle begins on the first day of bleeding. At this time, the pituitary gland releases FSH, which targets the ovaries. The follicles situated in the ovaries are stimulated by the FSH to start the maturation of an **ovum** in preparation for **ovulation** (the release of the ovum into the fallopian tube). At the same time, another hormone called oestrogen is released by the ovaries, causing changes in the cervix. Cervical mucus increases and the uterine lining or **endometrium** thickens and prepares for implantation. All of these changes ensure that conditions are conducive within the reproductive system for fertilisation to occur.

ovum: (Also called an 'egg'.) Contains the DNA from the female parent and is released by the ovaries.

ovulation: The release of the ovum on approximately day 14 of the menstrual cycle.

endometrium: The lining of the uterus.

corpus luteum: The follicle area of the ovary from which an ovum has been released.

When the levels of oestrogen reach a high enough level, this signals the pituitary gland to release a sudden surge of the hormone LH, causing the release of the ovum from its follicle. This is ovulation.

The ovum is collected by the nearest fallopian tube to await fertilisation. The burst follicle within the ovary that is left behind is now called the **corpus luteum**. It continues to secrete reduced amounts of oestrogen and it also begins to secrete greater amounts of the hormone progesterone, causing the endometrium to thicken even more in preparation for the implantation of the ovum.

Pregnancy occurs when the fertilised ovum implants successfully into the lining of the uterus. If fertilisation does not occur, the corpus luteum dies, ceasing the production of the hormones, and the endometrium breaks down and is released. This is menstruation. The cycle then repeats.

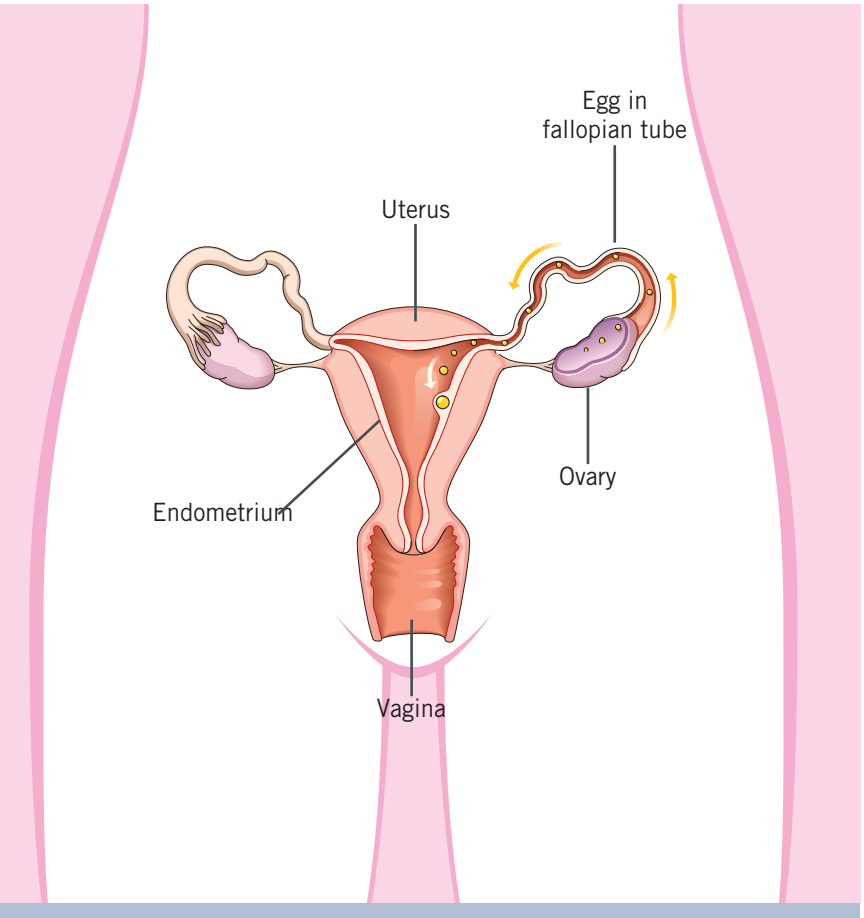


FIGURE 8.25 The process of ovulation

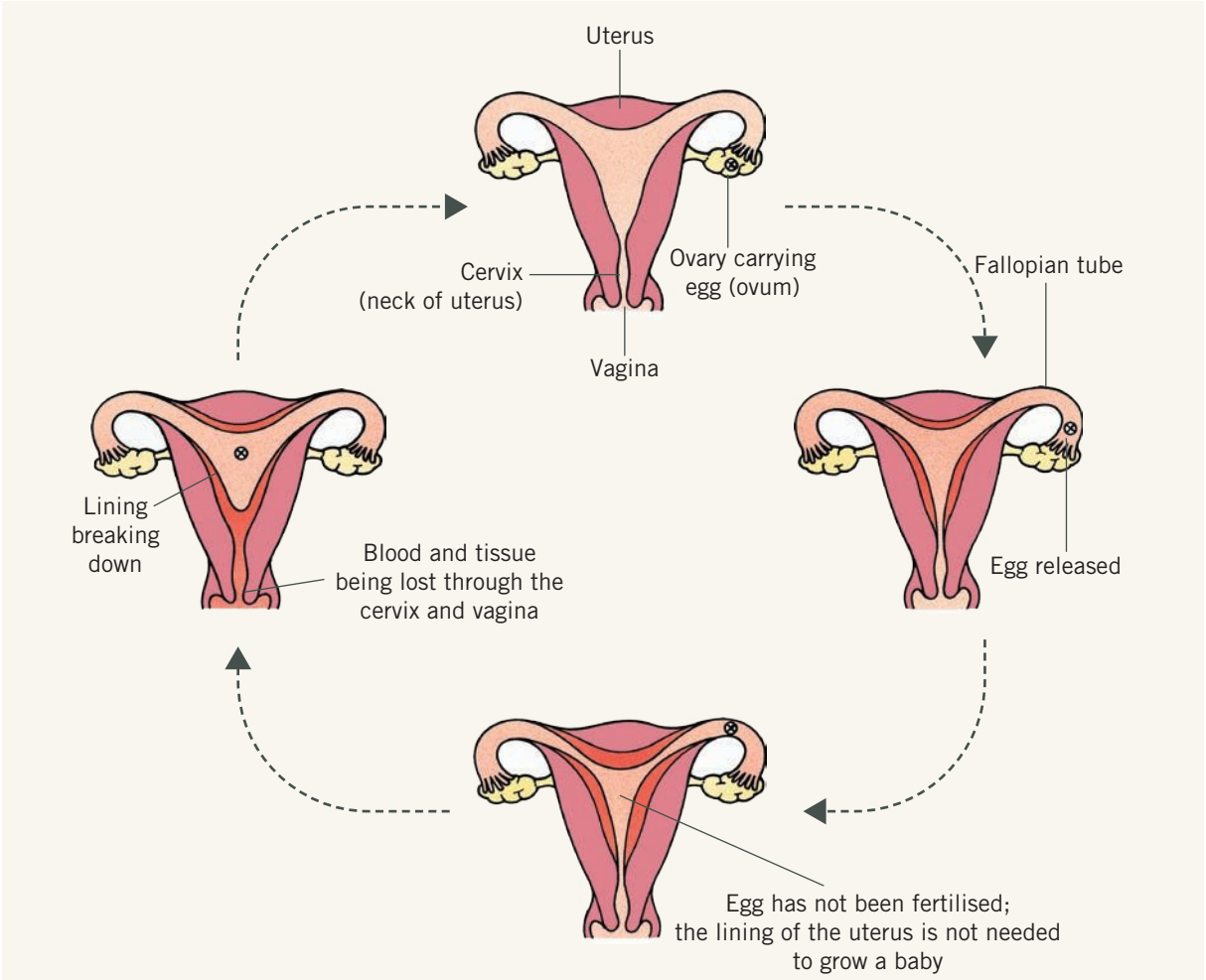


FIGURE 8.26 The menstrual cycle

ACTIVITY 8.9: UNDERSTANDING THE MENSTRUAL CYCLE

1 Identify the four main hormones that are involved in the regulation of a female's menstrual cycle.

2 Discuss the role each of these hormones plays in regulating a female's menstrual cycle.

3 Research the phases of the menstrual cycle and complete a table similar to the one below.

PHASE	APPLICABLE DAYS OF A 28-DAY CYCLE	DESCRIPTION
Menstrual		
Follicular		
Ovulation		
Luteal		

Secondary sexual characteristics in females

When the ovaries start to produce oestrogen and progesterone, the female's body experiences changes in size and shape. Overall, the female body has a 'curvier' appearance than the male body. This is due to the increase in the width of hips in proportion to the width of the waist. The increase in the width of the hips is due to the production of oestrogen, which, along with growth hormone, increases the size of the pelvic bones.

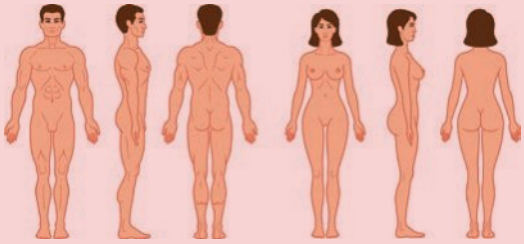
The female's body also begins to develop fat in the stomach area, buttocks and legs. This fat deposition occurs to ensure that there is an adequate source of energy to support the growth of a foetus if pregnancy occurs.

Some of the other changes that occur for females are the same as for males. These include the development of pubic hair and under-arm hair, as well as the thickening of hair on the legs.

Secondary sexual characteristics in females can be summarised as:

- breast development
- widening of hips and thighs
- the appearance of pubic and under-arm hair.

DISCUSS



Outline the key differences between male and female body shapes.

Generally, the progression of physical development in puberty is the same for everyone. However, individuals can vary with respect to the timing of the onset and rate of the growth events that take place. Each individual's development takes a specific form because of the effect of two major factors. The primary influence on the timing and rate of physical development is inherited influences (the inherited information that the individual receives from their parents in their genetic material). Environmental influences (the various experiences the individual has in their interaction with their surrounding environment) also impact the way development progresses.

TABLE 8.7 A summary of the physical changes for both males and females

APPROXIMATE AGE	MALES	FEMALES
9 years	• Pre-pubertal • No sexual development	• Pre-pubertal • No sexual development
10–11 years	• Testes enlarge	• Breast budding • First pubic hair • Height spurt
12–14 years	• Penis enlarges • Pubic hair starts to grow • Ejaculation (wet dreams)	• Breasts enlarge • Pubic hair darkens and becomes curlier • Growth of under-arm hair begins • Onset of menstruation • Hips begin to widen
15–16 years	• Continued enlargement of testes and penis • Penis and scrotal sac deepen in colour • Pubic hair becomes curlier and coarser • Height spurt	• Nipple is distinct from areola • Pelvis bones responsible for hip widening reach full growth • Continuation of menstruation
17–18 years	• Fully mature adult male • Pubic hair extends to inner thighs • Increases in height slow, then stop in early adulthood	• Fully mature adult female • Pubic hair extends to inner thighs • Increases in height stop

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ACTIVITY 8.10: PHYSICAL DEVELOPMENT AND HORMONES

1 Summarise the following types of physical development that occur during youth:
- **a** growth
- **b** primary sexual characteristics
- **c** secondary sexual characteristics.

2 Complete a Venn diagram (like the one in Figure 8.27) to indicate:
- the physical changes that occur only to females
- the physical changes that occur only to males
- the physical changes that occur to both females and males.

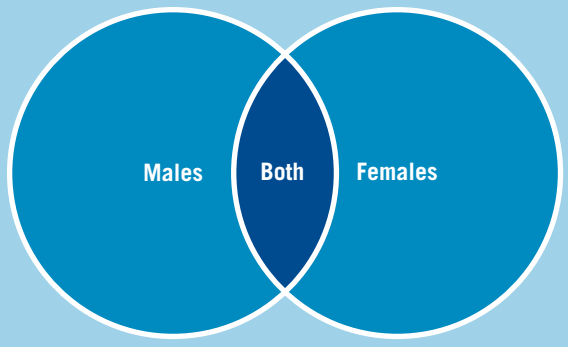


FIGURE 8.27 A Venn diagram

3 Briefly explain the roles of the following hormones in puberty:
- **a** oestrogen
- **b** progesterone
- **c** testosterone.


8.5 SOCIAL TRANSITIONS FROM YOUTH TO ADULTHOOD

Socially, youth begins with a dependence on parents and family when it comes to making decisions related to their interactions with others. Youth ends with achieving independence in a number of ways, including in controlling behaviour with others, educationally, and financially by establishing some form of financial independence from parents or family.

Throughout youth, an individual experiences changing social friendships, the initiation of romantic relationships and an expanding social world that includes greater and more unsupervised interactions with the community.

The timing of these changes depends on the different social and cultural expectations of the environment in which the young person lives. While the social development of adolescents takes place in the context of all of their relationships, it is those with their peers and families that undergo the most change.

During youth, the peer group becomes increasingly important as role models. Peers are generally people who have certain aspects of their status in common. For young people, peer groups can include a large network of people such as classmates and community members, or co-workers who are of a similar age group. Not all peers become friends. Friends are those peers with whom a young person has developed a valued mutual relationship.

FIGURE 8.28 Peer groups provide us with a sense of identity.

In order to establish greater independence from their parents, youth must orient themselves towards their peers to a greater extent than they did in earlier stages of development. Peer groups serve a number of important functions throughout youth, providing a temporary reference point for a developing sense of identity. Through identification with peers, young people begin to develop moral judgement and values, and to define how they differ from their parents. At the same time, it is important to note that young people also strive for ways to identify with their parents.

Another important function of peer groups is to provide youth with a source of information about the world outside of the family and about themselves.

Being accepted by peers has important implications for adjustment, both during youth and into adulthood. Positive peer relations during youth have been linked to positive social adjustment. For example, those who are accepted by their peers and have mutual friendships have been found to have a better self-image and to perform better in school. The nature of a young person's involvement with peer groups changes over the course of the youth lifespan stage. During early youth, young people typically have at least one primary peer group with which they identify, the members of which are usually similar in many respects, including gender.

During this time, involvement with the peer group tends to be most intense, and conformity and concerns about acceptance are at their peak. The intense desire to belong to a particular group can influence young people to go along with activities in which they would otherwise not engage. The need to belong to groups at this age is too strong to simply ignore. During middle youth, peer groups tend to be more gender mixed. Less conformity and more tolerance of individual differences in appearance, beliefs and feelings are typical.

ACTIVITY 8.11: THE IMPORTANCE OF PEER GROUPS

1 Explain why peers are important during youth.
2 Describe the social skills that develop by spending time with peers.
3 Outline what an individual can learn by interacting with their peers.
4 Explain why being accepted by their peers is important for a young person.
5 Describe how a person's relationships with their peer groups change during early, middle and late youth.
6 Outline the possible consequences for an individual of not being accepted by a peer group.

By late youth, larger peer groups have often been replaced by more intimate dynamic relationships, such as one-on-one friendships and romances. Youth vary with regard to the number of friends that they have and the ways in which they spend time with their friends. To have a friend assumes that one has the social skills to make and keep that friend. For most youth, the fundamentals of those skills are in place, and peer groups and friendships allow them to further develop those skills. For a small number of young people, however, this is not the case. These individuals may be rejected by their peers and this rejection can have serious negative effects, such as drug abuse, dropping out of school or depression, to name a few.

It is important to note that this decreased frequency of contact with family does not mean that family closeness has assumed less importance for the young person. Social interactions between parents and young people may, however, be characterised by greater conflict.

Another factor impacting on the social development of youth is their use of interactive technologies, such as email, instant messaging and social media. By offering fast-paced, inexpensive online communication, these technologies allow for new 'cyber' youth social networks to form and evolve. These online networks may, in turn, affect their other social and friendship networks.

DISCUSS

Discuss how experiencing positive relationships during youth can influence a young person's social development.

8.6 INTELLECTUAL TRANSITIONS FROM YOUTH TO ADULTHOOD

Intellectually, youth begins with the emergence of more advanced reasoning abilities and ends with the ability to entertain hypotheses, weigh possibilities and see situations from the perspectives of others.

The changes in the ways in which youth think, reason and understand can be more dramatic than their obvious physical changes. Intellectual development at this stage of the lifespan includes the ability to reason effectively, problem-solve, think abstractly and reflect, and plan for the future. In particular, youth develop the ability to understand metaphors and abstract mathematical concepts, and to reason about ideals like justice, religion or love.

The ability to think reflectively can result in the display of new behaviours. For example, young people may question accepted rules and may argue about whether rules are reasonable and fair. They may question other people's beliefs and values because they are now aware that not everyone thinks the same way they do about social or moral issues. Young people start to see the future, so they may relate their interests and present circumstances to the roles they will play as adults, resulting in them evaluating alternatives and setting personal goals.

Although there are obvious individual differences in intellectual development among youth, these new capacities allow young people to engage in the kind of introspection and mature decision-making that previously was beyond their ability.

Despite their rapidly developing capacity for higher-level thinking, most youth still need guidance from adults. Guidance is usually required to help them learn how to make important decisions on their own, such as attending a tertiary institution, finding a job or handling finances. While the development of intellectual skills enables greater decision-making capabilities, it doesn't necessarily mean that there is maturity of judgement – this also requires the development of social and emotional skills. These may not occur at the same time.

The full range of intellectual skills may not necessarily develop simultaneously. Youth who are very skilled or talented in some areas may be weak in others. For example, a young person who has trouble with learning mathematical concepts may excel at game strategy on the basketball court or learning a foreign language. Therefore, young people need to be given the opportunity to learn in ways that emphasise different types of abilities and increase their chances of success.

Moral development refers to the development of a sense of values and ethical behaviour. Developing morals occurs as a result of the combination of intellectual development in the area of developing reasoning abilities and social development, as well as identifying and displaying socially acceptable behaviour.

A young person's intellectual development helps to build the foundation for moral reasoning, honesty and socially acceptable behaviours. Youth gain moral development by observing altruistic and caring behaviour towards others and by engaging with other people's perspectives in their communication experiences.

In terms of intellectual abilities gained during this time, topics of morality can allow a young person to express their own views, ask questions, clarify their values and evaluate their reasoning.

moral development: A person's development of their understanding of the rules and conventions about what people should do in their interactions with other people.

DISCUSS

Discuss the relationship between intellectual development and establishing personal values.

8.7 EMOTIONAL TRANSITIONS FROM YOUTH TO ADULTHOOD

Emotionally, youth marks the beginning of detachment from parents and ends with gaining a sense of identity. There is a shift in interest from family relationships to peer relationships, leading to a capacity for deeper intimacy with peers and commitment to a loved one.

With the help of intellectual development, young people expand their ability to think about themselves in new ways. In turn, aspects of self-esteem and self-concept are developed. This can occur through life experiences such as learning to do new tasks, romantic or intimate relationships, academic achievement and employment success.

Generally, levels of self-esteem can be quite fluid during youth – especially early youth. As a person progresses through this time, their self-esteem increases as they gain confidence and self-awareness, and begin to form a self-identity.

The development of a sense of self allows the young person to become more able to establish friendships that are based on loyalty and intimacy. These friendships differ from younger friendships, which are based more on mutual trust and assistance.

Emotional development challenges that occur during youth include the following:

• **Managing changing relationships**. The emotional and social changes young people experience can challenge them as they try to cope with changing circumstances and situations. Friends provide emotional support, but this is a time when friendship patterns are changing and are closely linked to an individual developing their own sense of identity. Youth develop coping skills and learn to deal with relationship issues through communication and problem-solving skills. Dating typically begins between the ages of 14–16 years. As the amount of time invested in a particular relationship increases, the individual develops skills in expressing emotion.

DISCUSS

Discuss the role of academic achievement in the development of positive self-esteem and self-concept.

• **Meeting basic needs**. Young people have a strong need for community. Other central needs include having a sense of meaning in life, physical and emotional security and basic structure in relationships and living. Changing relationships require greater emotional maturity. The establishment of a sense of self-worth and self-reliance goes hand-in-hand with the establishment of self-esteem and self-concept.

• **Managing grief and loss**. Young people are influenced by various personal losses. Common losses that can be experienced by young people are the death of a grandparent, and the separation and divorce of their parents. The grief and sense of loss associated with the ending of romantic relationships during youth also has an impact on emotional development. Young people need to develop coping skills to manage the feelings they may experience.

• **Coping with stress**. Youth is a period of considerable stress. Much of this stress can by minimised through support, persistence and active decision-making and planning. However, there is a need to establish emotional skills

EXTENSION QUESTION 8.2

During the youth stage of the lifespan friends provide emotional support, but this is also a time when friendship patterns change. Describe the changes in relationships and friendship groups that occur throughout youth. Discuss the importance of relationships and friendship groups for emotional and social development.

ACTIVITY 8.12: UNDERSTANDING EMOTIONAL CHALLENGES DURING YOUTH

Search for the lyrics of a song that describe a particular emotional issue that is relevant to youth and, in particular, to the emotional challenges discussed in this chapter.

1 Outline the emotional challenge described in the song.

2 State how the emotional challenge is dealt with in the song. Suggest whether this is realistic.

3 Describe how facing this emotional challenge may affect a person's self-esteem and self-concept.

4 Identify the skills that are developed during youth that enable a young person to deal with emotional challenges.

and abilities associated with coping in stressful situations. The ability to cope also requires the development of self-esteem and a positive self-concept.

The development of a positive self-concept and self-esteem represents a major component of a young person's emotional development. The undertaking of developmental tasks appropriate to this stage of the lifespan allows the individual to develop a personal sense of self-concept and self-esteem. The progression through these tasks, however, is influenced by other factors: work and education commitments; exploration of relationships; and obligations to achieve goals. The achievement of these developmental tasks also varies.

As a component of developing a positive self-concept, or sense of who they are, a young person attempts to associate with a peer group that reflects or reinforces their identity. The group allows them to feel that they stand out from the crowd. This phase of development allows the young person to search for their sense of self. For example, because rapid physical development is a major element of early youth, developmental tasks are likely to focus on their evaluation of their physical acceptability, as well as acceptance by their peer group.

Youth is a period of great change and growth, as well as changing expectations of others. When young people begin to show signs of physical growth, adults tend to expect more mature emotional behaviour. However, growth in physical development, intellectual abilities, social skills and emotional maturity does not necessarily occur at the same rate. Adjusting to dramatic body changes and altered (and sometimes conflicting) expectations from others can impact on a young person's sense of belonging and identity.

DISCUSS

New skills learned during youth enable a young person to develop a sense of identity. Describe the skills and experiences that have contributed to your sense of identity.

ACTIVITY 8.13: BEING A YOUTH, BECOMING AN ADULT

1 Select four pictures that depict milestones or experiences that mark the end of youth or the start of adulthood. Each picture should represent one of the dimensions of development.
2 Paste your pictures on poster paper, or copy and paste them into an electronic document.
3 Annotate each picture, describing the changes that youth go through. Relate each challenge to a dimension of development when transitioning from youth to adulthood.
4 Present your work to a group of classmates and discuss the similarities and differences in each other's work.

Developmental transitions from youth to adulthood

Physical
- Growth spurt occurs and individuals increase significantly in height
- The release of a range of hormones stimulates puberty
- The development of primary and secondary sexual characteristics occurs
- Sexual maturity is reached and an individual can procreate

Social
- More time is spent with friends and less time with family
- The influence of, and acceptance by, peers becomes increasingly important to an individual
- Increased independence and more unsupervised time is spent in the community
- Romantic relationships may develop

Intellectual
- Reasoning and problem-solving skills develop
- Individuals form the ability to see situations from another person's perspective
- Individuals start to question rules and the fairness of situations
- Decision-making matures
- Individuals can think abstractly and plan for the future

Emotional
- An individual's sense of identity develops
- Self-esteem and self-concept develop, although they can be quite fluid during this period
- New emotions may be experienced and expressed through romantic relationships, managing grief and loss, and coping with stress

FIGURE 8.29 The developmental transitions from youth to adulthood

CHAPTER SUMMARY

- The stages of the lifespan from conception to death are:
  - **prenatal** – from conception to birth
  - **infancy** – from birth until a child's second birthday
  - **childhood** – from two until 12 years
  - **youth** – from 12 until 18 years
  - **adulthood:**
    - early adulthood: 18–40 years
    - middle adulthood: 40–65 years
    - late adulthood: 65 years old and older.
- The definitions of the four types of development are:
  - **physical** – the changes that relate to people's size and shape, and therefore body structure
  - **social** – the increasing complexity of behaviour patterns used in relationships with other people
  - **intellectual** – (also called 'cognitive development') the ways in which people are able to think and reason
  - **emotional** – refers to feelings and moods, and the ways in which people learn to express, understand and exercise control over them.
- The characteristics of each type of development are:
  - **physical** – growing and developing gross motor skills (e.g. walking) and fine motor skills (e.g. using cutlery)
  - **social** – learning to form new relationships, learning to communicate, and learning to behave appropriately
  - **intellectual** – recognising and remembering objects, words and events, establishing and expanding vocabulary, understanding concrete and abstract concepts, and developing the ability to think logically and to use reason
  - **emotional** – developing self-esteem and self-concept, learning to control emotions, and learning to understand the emotions of others.
- Examples of the various types of development that youth experience as they transition from being a child to being an adult are:
  - **physical** – having a growth spurt, developing primary and secondary sexual characteristics
  - **social** – forming new intimate relationships, becoming closer to friends, increasing independence, and adapting to new roles (e.g. being an employee)
  - **intellectual** – understanding abstract concepts and increasing ability to think logically and to reason
  - **emotional** – developing self-esteem and self-concept, learning to express new emotions such as romantic love.

KEY QUESTIONS

SUMMARY QUESTIONS

1 Explain how health differs from development.
2 Using examples, explain the term 'socialisation'.
3 Explain self-esteem and self-concept. Identify the type of development for which these concepts are relevant.
4 Identify the sex hormones for males and females and explain their function.
5 Provide four examples of primary sexual characteristics and four examples of secondary sexual characteristics.
6 During youth, an individual expands their ability to reason and problem-solve. Discuss what effect gaining these new abilities has on an adolescent's social and emotional development.
7 Identify and describe the emotional development challenges that occur during youth.
8 Explain why levels of self-esteem are changeable during the lifespan stage of youth.

EXTENDED-RESPONSE QUESTION

More Australian adult children are living at home, census data shows

By Christina Zhou, *Domain*, 13 July 2017

What do you do when you are priced out of the housing market? Sarah Bouker, 23, and partner, Anthony Joel, like a growing number of young adults, decided to stay living at home to save more money for a deposit.

With house and rent prices outpacing income growth in Melbourne and Sydney, it has become increasingly popular among adult children to live with their parents and for longer in life.

An analysis of census data by population consultancy .id estimated the average child in their mid-20s is staying at home longer, by about an extra six months over the past five years.

The proportion of 20–24-year-olds living with parents grew from 41.4 per cent to 43.4 per cent between 2011–16. For 25–29-year-olds, the jump was from 15.7 per cent to 17 per cent.

…

Ms Bouker, who turns 24 next month, said her partner moved in with her family in Langwarrin, in Melbourne's south-east, about 18 months ago so they could save faster. 'We're able to save – out of my pay alone – about $400 a week, which is a lot more than what we'd be able to if we were renting', she said.

QUESTION

The development that an individual experiences when transitioning from youth to adulthood may differ depending on whether they live independently or at home with their parents. Referring to the article above, explain how living independently might positively and/or negatively impact the development of an individual who is transitioning to adulthood. (6 marks)

EXAMINATION PREPARATION QUESTIONS

Tess is 17 years old and in Year 11 at a high school in the outer suburbs of Melbourne. She enjoys school, where she is on the debating team. Outside of school, Tess plays netball and swims competitively. Tess also recently got a part-time job at a bookshop at her local shopping centre. Tess is popular and has many friends with whom she spends time on the weekend. Recently, Tess started dating a boy from her school named Seb, who is also 17. Seb was very late to hit puberty, experiencing most of his growth spurt in Year 10.

A Identify three physical changes that Tess would have experienced in the previous few years. (3 marks)

B Identify three physical changes that Seb would have experienced in the previous few years. (3 marks)

C Referring to the case study in your answer, discuss how Seb's physical development may have had a negative impact on his social development. (2 marks)

D Referring to the case study in your answer, discuss how Tess's social development may have had a positive impact on her emotional development. (2 marks)

9 A FOCUS ON ADULTHOOD

KEY KNOWLEDGE

- Perceptions of youth and adulthood as stages of the lifespan
- Key characteristics of healthy and respectful relationships and the impact on health and wellbeing, and development
- Considerations in becoming a parent such as responsibilities, and the availability of social and emotional support and resources.

KEY SKILLS

- Collect and analyse information to draw conclusions on perceptions of youth and adulthood
- Analyse the role of healthy and respectful relationships in the achievement of optimal health and wellbeing
- Analyse factors to be considered and resources required for the transition to parenthood.

(VCAA Study Design, © VCAA)

AOS 1

INTRODUCTION

This chapter looks at how the lifespan stages of youth and adulthood are seen or perceived. Investigating this includes conducting your own research by collecting and analysing information about these perceptions. This chapter then moves to focus on relationships – of which there are many formed throughout life – and to examine what a healthy and respectful relationship looks like, sounds like, and feels like. You need to understand the importance of strong and healthy relationships, and the impact they have on health and wellbeing and human development. The last section of this chapter considers parenthood. Specifically, what is required to be a parent, and how parents are supported socially and emotionally during their transition into parenthood and the years beyond. This section of the chapter also reflects on why some adults do not become parents. You need to be aware of these considerations, analyse the factors related to parenthood, and analyse the resources available for this life-changing transition.

What you need to know

- How youth and adulthood are perceived as lifespan stages.
- Key characteristics of healthy and respectful relationships.
- How healthy and respectful relationships impact on health and wellbeing, and human development.
- The considerations and responsibilities of becoming a parent.
- Examples of the social and emotional supports and resources available for parents.

What you need to be able to do

- Collect information about people's perceptions of youth and adulthood, such as through a survey or interview.
- Analyse the information collected to draw conclusions about people's perceptions of youth and adulthood.
- Analyse the role of healthy relationships in the achievement of optimal health and wellbeing.
- Analyse factors to be considered when becoming a parent.
- Analyse the resources that are required for the transition to parenthood.

FIGURE 9.1 Turning 18 in Australia means you legally become an adult.

9.1 PERCEPTIONS OF YOUTH AND ADULTHOOD

In Australia, when young people turn 18 years of age, they have reached adulthood in the eyes of the law. There is an expectation that, as an adult, a person takes on the roles, responsibilities and requirements associated with becoming an adult member of the community. For many, adulthood sees the shift from being a dependent youth family member to an individual establishing independence and later creating a family of their own, with a chosen partner. Adulthood is a time of independent decision-making when a person takes control of their life.

It is also a time when a young person may face many new challenges, choices and changes regarding maintaining their health within this lifespan stage.

Perceptions of both youth and adulthood vary within our community and the distinction of adulthood can blur with some 18-year-olds still finishing their schooling whilst others may be out in the workforce. There are also stereotypes of both age groups within the community as well as expectations about each age group. Perceptions, stereotypes and expectations do change over time, and are impacted by a number of factors, including geographical location, culture, religion and community values.

ACTIVITY 9.1: TURNING 18

Turning 18 is a milestone event in the lives of Australians as by definition you become an adult.

1. Outline what significant activities and responsibilities an 18-year-old has compared with a 16-year-old.
2. Discuss the change in responsibilities as a person transitions from youth to adulthood.
3. Describe what changes and responsibilities you are looking forward to when you become an adult.
4. Explain what, if anything, you are not looking forward to as you transition into adulthood.

DISCUSS

Discuss your perceptions of youth and adulthood. If you had to describe each lifespan stage in three words, what would they be?

FIGURE 9.2 Different perceptions of youth

FIGURE 9.3 Different perceptions of adulthood

ACTIVITY 9.2: GET GOOGLING

Many people's perceptions are influenced by what is portrayed in the media.

1 Research five difference examples of the presentation of both youth and adulthood in the media.

2 Summarise the way that young people and adults are presented in the examples you have collected.

3 Do you believe social media portrays youth and adulthood differently to traditional media? Justify your response.

EXTENSION QUESTION 9.1

In 2019, inspired by 16-year-old Swedish student Greta Thunberg, there was the largest ever global rise of young people speaking up and striking for climate action.

Discuss the perceptions of youth that may have left young people feeling voiceless in key issues like climate change.

ACTIVITY 9.3: RESEARCHING PERCEPTIONS OF YOUTH AND ADULTHOOD

Design a survey to collect data about the different perceptions of youth and adulthood. You might like to use an e-survey such as Google Survey or SurveyMonkey.

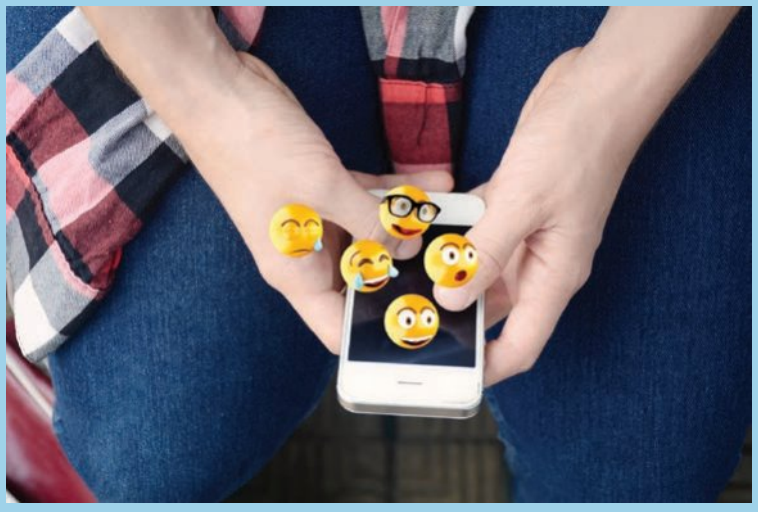


FIGURE 9.4 Does every generation have their own 'language'?

1 Prepare your survey questions carefully. Some ideas for questions include: Describe young people in five words; describe adults in five words; why did you choose these words?
2 Conduct your survey. Ensure you survey members of different age groups to gather a range of comprehensive data.
3 Analyse the information you have collected. Include the collation of data in your analysis.
4 To evalutate your information, consider questions such as: How did the perceptions of youth change depending on the age of the person surveyed? How did the perceptions of adults change depending on the age of the person surveyed? What other factors might influence someone's perceptions?
5 Present your conclusions on the information about the perceptions of youth and adulthood gathered through your survey. You can choose how you present your findings and conclusions.

AOS 1

9.2 HEALTHY AND RESPECTFUL RELATIONSHIPS

As we have seen, a key transition in adulthood is the forming of relationships and partnerships. Relationships that are positive are good for your health and wellbeing. A relationship is the connection between two or more people and their involvement with each other. We are all involved in a number of relationships: with the people with whom we interact every day – our family members, teachers, peers and colleagues – as well as romantic relationships with a chosen partner. Some of the most important relationships you will form may even become lifelong, including best friends who you can count on for support, encouragement and fun.

FIGURE 9.5 We are all involved in a number of different relationships.

EXTENSION QUESTION 9.2

The romantic relationship you have with a partner is only one type of relationship. Brainstorm all the different kinds of relationships you have. Explain how these relationships impact on your health and wellbeing and human development.

DISCUSS

Discuss what you think are the key characteristics of a healthy relationship. Rank your ideas from the most to the least important.

FIGURE 9.6 Key characteristics of a healthy and respectful relationship

ACTIVITY 9.4: RELATIONSHIPS, RELATIONSHIPS

1 With a partner, design an emoji or image to represent each characteristic of a healthy and respectful relationship.
2 Prepare an agreed-upon definition for each of the key characteristics of a healthy and respectful relationship, as shown in Figure 9.6.
3 Rank the characteristics of a healthy and respectful relationship in order, from the most important to the least important.
4 Justify why you consider your top three characteristics to be so important for promoting healthy relationships.
5 Outline why you think healthy and respectful relationships promote good health and wellbeing.
6 Suggest why you think healthy and respectful relationships promote development.

FIGURE 9.7 The dynamic between a coach and their team is an example of a positive and respectful relationship that is based on trust, common goals, friendship and support.

Healthy relationships that demonstrate **respect** are extremely positive for health and wellbeing, and for development. Establishing and maintaining relationships are important for developing resilience throughout life. Relationships provide positive social and emotional interaction and can create a strong sense of **belonging** and connectedness, which are very important for social and emotional health and wellbeing and the development of an individual throughout their life.

respect: The concern or consideration for the feelings, wishes, opinions, rights and needs of others.

belonging: The sense of feeling a part of something; a feeling of connectedness to other people or being involved in a community.

affection: The feeling and showing of emotions of love, support and care towards a person.

Affection is the feeling and showing of emotions of love, support and care towards a person. Healthy and respectful relationships play an important role in providing emotional support and also communicate feelings through physical affection such as hugging, kissing and sharing closeness. Affection has a positive effect on emotional health and wellbeing, and development – when an individual knows they are cared for and loved, their emotional health and wellbeing improves. They feel positive about themselves, are able to cope with the stresses of everyday life and are also more likely to make good choices about their health and wellbeing. People are more likely to be physically active with others than alone, which has a positive impact on physical health and wellbeing.

Spiritual health and wellbeing is also positively impacted, as being a part of healthy relationships can provide people with a sense of meaning and importance, and often people with similar views, values and expectations form relationships, with their spiritual beliefs aligned.

FIGURE 9.8 Feeling a sense of belonging and physical affection is good for all dimensions of health and wellbeing, and for development.

HOW TO RECOGNISE A RESPECTFUL RELATIONSHIP

Respectful relationships:

- allow each person to be listened to and heard, including when each person airs their beliefs and point of view
- allow each person to make their own choices
- foster feelings of self-worth and nurture happiness
- accept people for who they are
- involve trust, respect, honesty and being able to say no
- allow each person to feel safe and to be themself without fear or without being put down or hurt
- allow each person to make mistakes
- encourage each person to be themself.

Studies show that people who are happily married live longer, enjoy better physical health and wellbeing, and experience better mental health. Relationships are also good for protecting you against some health conditions. One example is that people who are in relationships have a higher level of survival from skin cancer, as it is often partners who notice skin changes earlier and encourage their partner to seek medical advice.

ACTIVITY 9.5: MEDIA ANALYSIS

Online, find the article, 'Seven health benefits of being in a happy marriage' (by Melinda Carstensen, *Fox News*, 14 February 2017; available at https://cambridge.edu.au/redirect/8885).

1 List the health benefits of being in a healthy marriage.
2 Outline how these health benefits impact all the dimensions of health and wellbeing.
3 Suggest why people who are in a happy marriage have these health benefits.
4 Discuss whether you think that people who are in a happy relationship, but are not married, would also experience these health benefits. Justify your response.
5 Discuss whether you think being in a healthy marriage is important for achieving optimal health and wellbeing. Justify your response.
6 Research the benefits of being in a healthy relationship. See whether you can find any other health benefits that you could add to this list.

FIGURE 9.9 Healthy and respectful relationships have a positive impact on health and wellbeing.

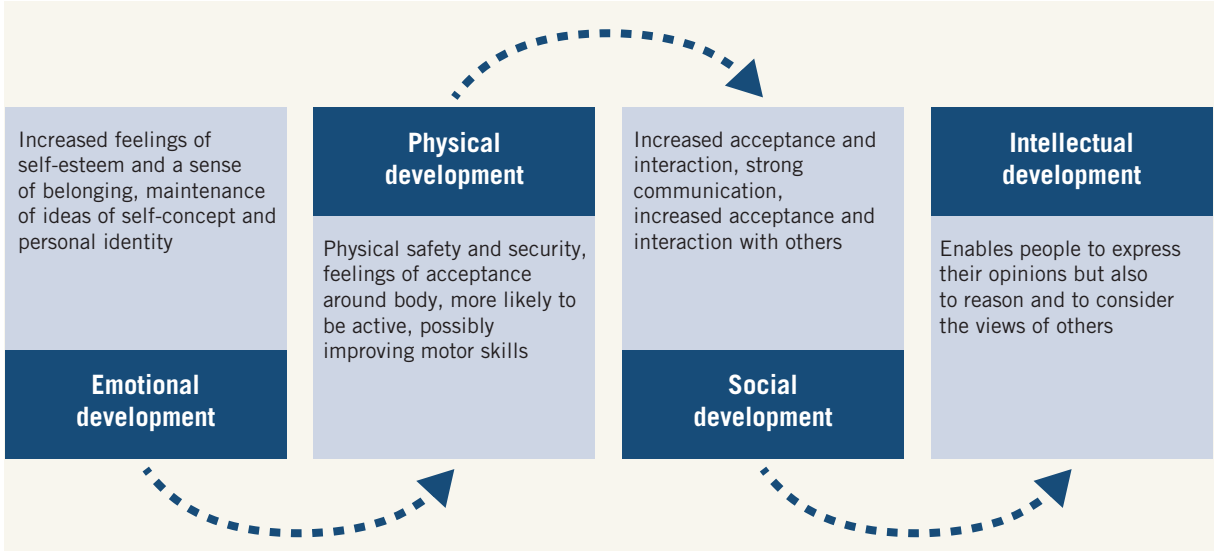


FIGURE 9.10 The positive impact of a healthy and respectful relationship on development

CASE STUDY: ELLIE AND RICKY

Ellie and Ricky have recently moved in together, having been high school sweethearts. It has been exciting for them both, but it took some time to find the right place. They first had to decide which suburb they would live in. This involved some honest discussions about what would work best as they work on different sides of town; after these discussions, they agreed on a compromise. Ellie is also studying to be a social worker, so she spends a lot of time studying. Ricky is supportive of Ellie's goals, but would like to spend more time with her. Ricky catches up with his mates every Thursday night so Ellie can work quietly at home, which is working well for both of them. When Ellie starts to feel overwhelmed with deadlines, she always tries to share how she is feeling with Ricky because he is so great and always asks what he can do to be supportive. They both know it won't always be like this and have planned a holiday together to celebrate the end of uni. They try to share things equally, even though it doesn't always end up that way. Their relationship takes some work and they are both very committed to each other. People love hanging out with Ricky and Ellie and they have a wide group of friends.

1. Discuss if you think that Ellie and Ricky's relationship is healthy and respectful. Justify your response.
2. Identify the key characteristics of a healthy relationship shown in Ellie and Ricky's relationship.
3. Suggest two reasons why these characteristics are important.
4. Using examples, explain how Ellie and Ricky's relationship supports optimal health and wellbeing.
5. Using examples, explain how Ellie and Ricky's relationship supports human development.

In a relationship where respect, affection, equality and the other key characteristics are not demonstrated or experienced, there may be unhappiness, resentment and a lack of trust. This may lead to increased stress, poor self-esteem and physical illness. Individual development may be compromised. Emotional development could be impacted due to feelings of insecurity, and people start to question their thinking and reasoning, which impacts intellectual development.

CASE STUDY: UNHEALTHY RELATIONSHIPS

Visit the website of the Domestic Violence Resource Centre Victoria. Read one of the true stories on the site, then respond to the following questions.

1. Identify the unhealthy relationship.
2. Outline the experience of the person in the unhealthy relationship.
3. Analyse how being in this unhealthy relationship impacted the person's health and wellbeing. Include examples from the story.
4. Analyse how being in this unhealthy relationship impacted the person's development.
5. Identify the trigger for the person to seek help.
6. Describe the positive changes this person was able to make with support.
7. Describe the person's health and wellbeing after they ended the unhealthy relationship.

A healthy and respectful relationship is also based on more than just love and affection. All involved should feel loved, respected, equal and safe to be themselves. Any relationship where someone feels intimidated, pressured, embarrassed or unsafe is not a healthy relationship.

DISCUSS

Being in an unhealthy relationship can affect your mental health. Discuss the warning signs of an unhealthy relationship and the possible consequences of being in an unhealthy relationship.

ACTIVITY 9.6: UNHEALTHY RELATIONSHIPS

1 Define the term 'abuse'. Provide examples of the different forms of abuse.
2 Describe the characteristics of an unhealthy relationship.
3 Explain the impact of being in an unhealthy relationship on a person's health and wellbeing.
4 Explain the impact of being in an unhealthy relationship on a person's development.
5 Outline what advice and support you would give someone in an unhealthy relationship.

ACTIVITY 9.7: 'TO MY WIFE – THIS IS FOR YOU'

In 2017, Grant Denyer won the Gold Logie. Watch his acceptance speech (available at https://cambridge.edu.au/redirect/8886) then answer the following questions.

1 List the relationships Grant mentions in his speech.
2 Describe the high and lows Grant has been through.
3 Outline the support Grant has received from his wife Chezzi.
4 State the different dimensions of Grant's health and wellbeing that Chezzi has supported.
5 Analyse the impact of Grant and Chezzi's healthy and respectful relationship on Grant's human development.
6 Conduct research to find another example of a relationship that has supported a person achieving their optimal health and wellbeing.

AOS 1

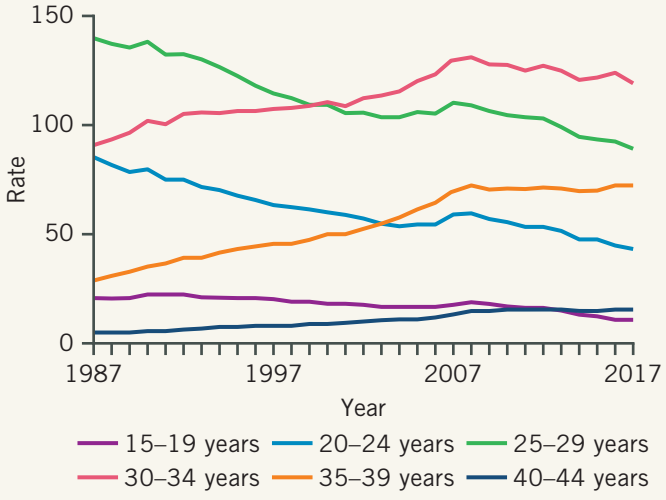
9.3 BECOMING A PARENT

Becoming a parent is one of the most significant times in the life of an adult, and also a period of dramatic change. For many couples, having a child and thus becoming parents has been a decision made together and it is a time of excitement, anticipation and joy.

For other adults, becoming a parent was not planned and has come as a surprise – sometimes with happiness, but not always. And then there are couples who will not experience parenthood, by choice or due to biological reasons beyond their control. Having a baby creates new responsibilities and changed directions for parents, resulting in both positive and challenging experiences, increased responsibilities and possibly greater burdens.

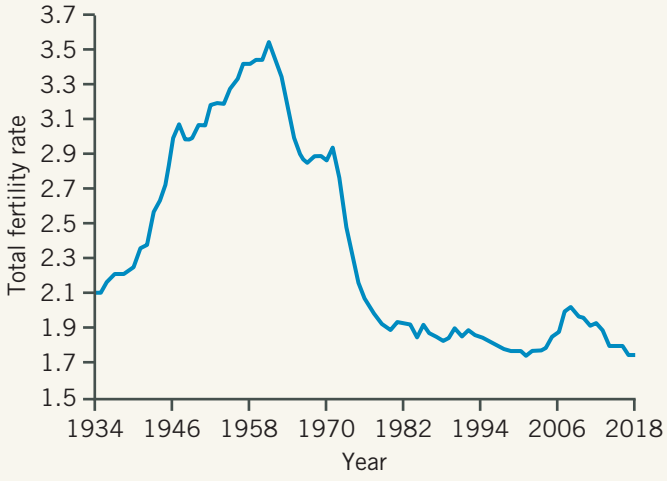
DISCUSS

Becoming a parent is one of the most significant times in an adult's life. When do you think is the right time to have a baby? What factors would influence this decision?



SOURCE: ABS

FIGURE 9.11 Age-specific fertility rates, selected age groups, Australia – 1987 to 2017



SOURCE: ABS, 2018

FIGURE 9.12 Total fertility rate (births per woman), Australia – 1934 to 2018

ACTIVITY 9.8: DATA ANALYSIS – AUSTRALIA'S FERTILITY

1 Outline the trend shown in Figure 9.11.
2 Describe what the data in Figure 9.12 tells us about the total fertility rate in Australia over time.
3 Discuss reasons for your answer in Question 2.
4 Suggest the implications of both these data sets for Australia.

EXTENSION QUESTION 9.3

Discuss why there is a community expectation that couples will have children.

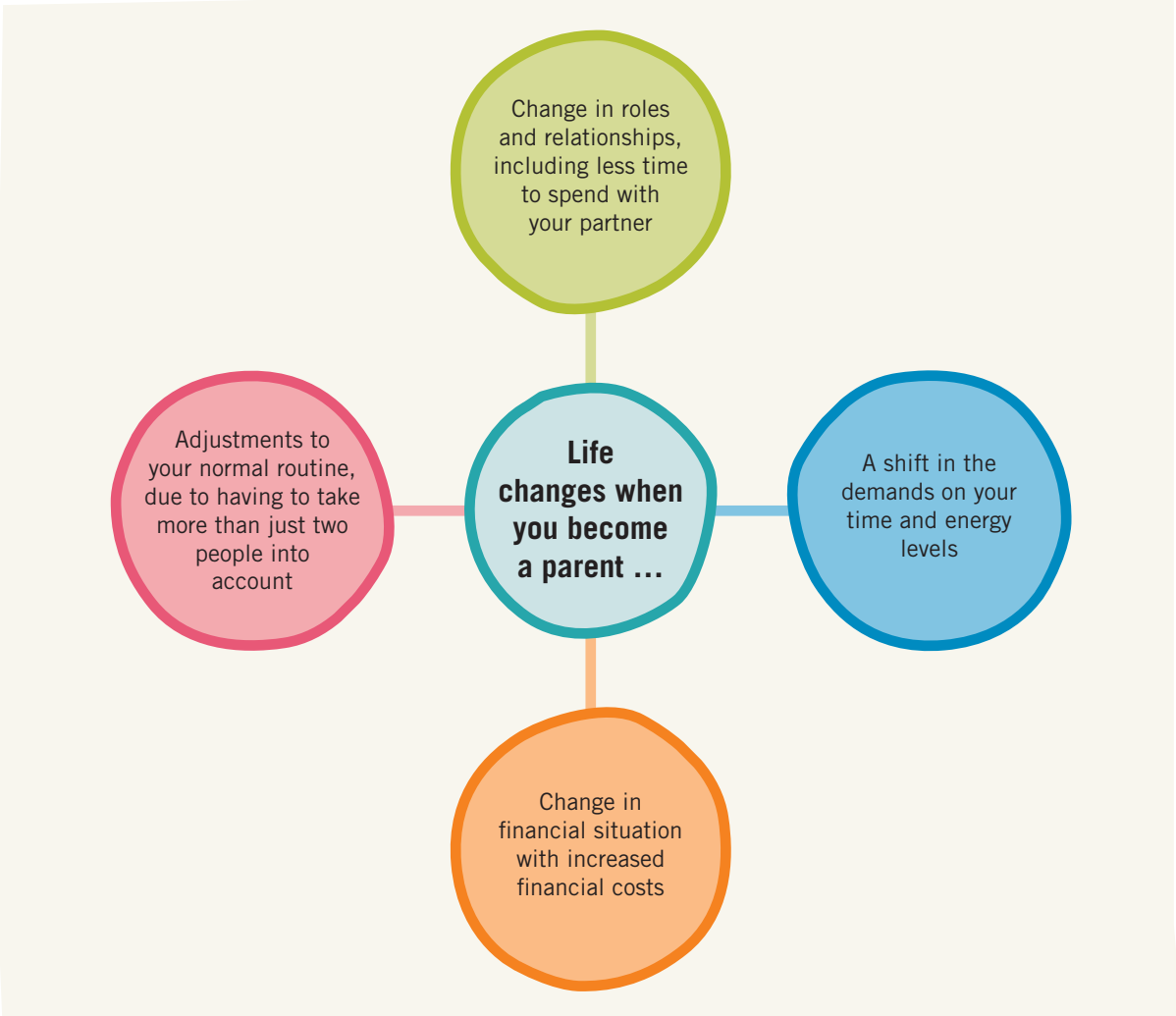


FIGURE 9.13 There are a number of life changes that people need to consider when becoming a parent.

Cost of children

When you think about becoming a parent, one of the first considerations is the financial cost. There are obviously a number of increased costs once a child is born: food, clothing, housing, healthcare, education, recreation activities … the list goes on. These costs do increase the everyday living expenses of couples. Housing and utility costs are the most significant after your first child. Housing costs increase as families often move to larger homes, increasing their mortgage or rental payments so they have the space to accommodate their family. But as the family grows, this cost remains relatively steady as the extra space and utilities needed for additional children can usually be accommodated within the current housing arrangements. Once you have more than two children, the most expensive cost of raising a family is food.

DISCUSS

Brainstorm all the costs associated with raising a child.

The cost of becoming a parent is not only financial; there is also a cost in time and energy. Once you have children, the demands on your time increase and the needs of your child take priority. Sleeping patterns change, with the baby needing feeding every few hours in the early months. The energy levels of parents change, as they need to respond to the demands of parenthood. Life tends to revolve around your child or children – certainly when they are babies, but even when they are older: there is football and netball, homework and birthday parties. A range of many different demands are placed on the time, energy and emotions of parents.

FIGURE 9.14 Statistics show that children are living at home with their parents for longer; the average age of moving out of home now 24 years.

Work and career

For some adults, a key consideration with regard to deciding to become a parent is based around work and career goals. Having a baby does impact the working life of both parents. For some women, the timing of when to have a baby is a consideration based on where they are in their chosen career and what they consider is the best time in terms of their career progression.

EXTENSION QUESTION 9.4

The number of working mothers continues to rise. Analyse the impact of being employed and being responsible for the majority of home duties, on the health and wellbeing, and development, of mothers and children.

ACTIVITY 9.9: LIFE AS A PARENT

Design three different original memes highlighting the considerations of becoming a parent.

Responsibilities

It is often said that being a parent is the hardest job of all and, given the long list of roles and responsibilities that parents often have to fulfil, it is easy to see why.

The main responsibilities of parents include:

- to care for their child/children and spend time with them
- to love and protect, ensuring a sense of security
- to listen, support and provide guidance
- to provide a sense of belonging
- to teach values, morals and behaviours
- to provide food
- to provide a clean and safe home
- to provide clean and warm clothes
- to educate
- to pass on family culture and heritage
- to maintain positive communication.

EXTENSION QUESTION 9.5

Taking responsibility for a child is hard work, especially as a new parent when you are still learning how to look after a child. There is no book of instructions when a baby is born, and each child can be very different.

Outline the responsibilities of parents and what the consequences are for a child if their parents do not fulfil their responsibilities. Discuss your ideas about how children might be supported in this situation.

DISCUSS

An unwanted pregnancy can lead to social, emotional and economic concerns for adults. Discuss what the impacts of an unwanted pregnancy might be on the health and wellbeing and development of the parents.

DISCUSS

FIGURE 9.15 Sonia Kruger gave birth to her daughter Maggie when she was 49 years old. In 2019, Fifi Box revealed that she had conceived her second child via IVF from an anonymous donor.

Discuss why women like Sonia Kruger and Fifi Box have made the decisions they have regarding parenthood. What might the community response be to their decisions? Explain how these women are breaking traditional stereotypes.

ACTIVITY 9.10: MEDIA ANALYSIS

Childfree: Meet the women who don't want to become mums

By Kellie Scott, *ABC News*, updated 21 March 2017

Women decide not to have children for many reasons.

Whether it be career-motivated, a lack of maternal feelings or a concern for population growth's impact on the environment – it's often a carefully considered decision.

And we already know fewer women are having kids as each decade goes by.

Data from the Australian Bureau of Statistics shows the number of childless women in the 45–49 age group was at 14 per cent in 2006. That compares to 11 per cent in 1996, and 9 per cent in 1986.

But what does this choice of childlessness mean for women at different stages of their life?

Career-minded and carefree: Amy Gurd, 27

'I don't need to have kids to validate my life,' 27-year-old Amy Gurd of Brisbane says with conviction.

Amy and her husband of five years, Brad, have chosen a childfree life and are considering protective measures like a vasectomy.

Amy is not shy about her decision, but is tired of the judgement she is constantly faced with.

'I'm kind of annoyed this is a topic of conversation. Women are judged for conforming or not conforming to this gender role of being caring mothers,' she says.

The PhD student researching criminology realised in high school being a mum wasn't for her. She plans to dedicate herself to a career and travel the world.

'I know there are certainly women who can manage both really well, but becoming a parent would significantly impact and delay mine and my husband's career,' she says.

'I'm happy with just my husband. We have two dogs which is enough responsibility.'

Amy says lying has become a tool of avoidance in social circles where she often feels the pressure to comply with society's idea of being a woman.

'We actually got to the stage where it was just easier to tell people that we can't have kids just so the conversation will stop.

'I am supportive of people having kids, but it's not reciprocated.'

My kids would have been neglected: Natasha David, 43

Sydneysider and career woman Natasha David is relieved she didn't succumb to 'baby pressure'.

The 43-year-old writer has experienced several traumas in her life, including the suicide of her husband, who wanted children.

'If I had have had children because my husband wanted them, there would have been a long period where they might have been emotionally neglected by me while I worked my own stuff out,' she says.

'I even had to give away my cats during a time because they weren't getting enough attention; it would have been horrific for a child.'

Natasha had not completely written off having kids with her late husband, but wanted for them both to work on their own mental and emotional health before considering it.

'I felt it would be selfish to have a child against all the odds,' she says.

'But I felt like society was thinking I was selfish for trying to improve myself before having kids.'

Natasha has a vivid memory of her five-year-old self announcing she would be forever childfree.

'My aunties were all laughing and saying I will change my mind. I remember being very offended they said that, because I was very strong-minded.

'I don't like having people depend on me, and am quite independent myself, so I get quite impatient with those who are needy.'

Natasha has again found love since her husband's passing, with someone who also doesn't want children.

As for a 'kid fix', Natasha says she gets that from loved ones' families.

'Like the saying goes, it takes a village to raise a child, I am part of that village.'

...

Not sure? Embrace the 'freedom of uncertainty'

Healthy Mind Project psychologist Talya Rabinovitz works with women in their 30s and 40s who don't want children but have anxiety around it.

'On the one hand, they can see themselves being happy in life without kids. On the other hand, they're worried they're making the wrong decision,' she says.

'[Some] women report wanting kids but cite social pressure as the main motivating factor.'

Talya says there are also cases of clients regretting their choice.

'They reach their early 50s and said, "I wish I'd just taken the risk and had kids; now it's too late".'

But she says those who are confident about being childfree typically report feeling a sense of fulfilment and freedom from other areas of their life.

For women who feel selfish for considering a childfree life, Talya says choosing not to have children is as valid as choosing to have them.

'There is, however, a real opportunity for these women to learn how to harness the power of uncertainty and the freedom that comes when you surrender to it.

'Women who I've seen do this, step into their lives with a sureness that they will be OK, no matter what happens.'

1 List the reasons why the women in this article do not want to have children.

2 Describe the impact they believe having children would have on their lives.

3 Explain the benefits of not having children.

4 Discuss the reasons why some women who are childless experience regret later in their lives.

5 Outline the services available to support women and couples who have decided not to have children.

6 Childless couples have been criticised as being 'selfish' by choosing not to become parents. Do you believe this is the case? Justify your response.

Infertility

For some couples, the consideration to become a parent is one that is out of their control, with many couples faced with infertility. It is estimated that infertility affects about one in six Australian couples. There are many causes of infertility, and it can involve both males and females, including the structure or function of the reproductive system, problems with the production of eggs or sperm, and hormonal and immune conditions.

Couples experiencing fertility issues have treatment options available, including in vitro fertilisation (IVF), which is now a common medical procedure. Many couples seek medical help when trying to start their family, and as a direct consequence fall pregnant and have a child. But, sadly for some, medical intervention is unsuccessful and they are unable to give birth to their own child.

The emotional and mental impact on couples facing infertility is significant. It is a time of stress, pressure and anxiety. As adults, we take it for granted that we will be able to have children: this is viewed as a natural, normal experience. Those who can't do so often feel that there is something wrong with them. With this comes feeling of loss, grief and disappointment. The relationship can also become strained as one partner may feel responsible and inadequate. Women grieve the loss of the experience of being pregnant, the nine months' gestation, the experience of giving birth and breastfeeding. There is often pressure, or perceived pressure, to have children – especially by parents who are hoping to become grandparents.

Becoming a parent is a lifelong commitment. It is a uniquely demanding job, which changes dramatically over time as your child grows and develops. For some adults, becoming a parent is carefully considered and planned, while for others it is completely unplanned, and for some not wanted or not possible. While there are many considerations involved in becoming a parent, once you are a parent you have to manage and do your best. Your child is depending on you.

DISCUSS

Consider the impact of wanting to become a parent and not being able to; how do you think this would affect a person's health and wellbeing?

DISCUSS

Discuss which resources new parents may need. Outline which resources experienced parents may need.

Available social and emotional supports for parents

The importance of assisting parents to raise healthy children is well recognised, and there are a number of supports and services – government and community – available to parents.

Maternal and Child Health Service

The Maternal and Child Health Service exists to help parents meet the various challenges of parenthood. It is available at no cost to families with one or more children under school age. Maternal and Child Health Services are available in every government area in Victoria, and each centre is staffed by trained maternal and child health nurses.

The Maternal and Child Health Service offers a series of one-on-one consultations for the mother and the child. These are scheduled at a range of different ages.

These visits provide an opportunity for parents to get advice on a range of health services, such as:

- maternal health
- family planning
- parenting
- breastfeeding
- nutrition
- child health
- child development
- child safety
- immunisation.

During these sessions, the nurse not only assesses the child's health, they also discuss and support the health and wellbeing of the mother. They may also run open sessions that allow parents to drop in and discuss any concerns they may be having, as well as parent groups that allow parents to meet other new parents in the local area.

FIGURE 9.16 The Maternal and Child Health Service is available to all Victorian parents. The service provides support and resources to help parents meet the various challenges of parenthood.

FIGURE 9.17 The Maternal and Child Health Line (13 22 29) is a confidential telephone helpline that is available 24 hours a day, seven days a week.

CASE STUDY: MOTHERS GROUP

My biggest social and emotional support when my son was first born, apart from my family, was my mothers group. This wonderful group of women, who were all first-time mums like me, became my social network. We would always support each other and this made a big difference to me during the first few months of being at home with my new baby. It was so foreign to not be at work and I missed seeing people. This new group of mums and their bubs became my world. We always went for walks, at least three times a week. There was never any pressure to go, but if you didn't make a walk at least once, one of the mums would touch base just to check you were OK. During these walks, which usually included a coffee stop, we would share stories – the highs and lows of the week. We would laugh together, cry together and you always knew you had someone who understood what you were going through. I had it tough and it was these ladies who were my greatest support. They built my confidence in being a mum, they made me feel like an integral part of a group and they cared for me and I for them. Ten years on, we still catch up – often, but mostly now without our kids. We have a strong bond and the social and emotional support is still there. Some of us have gone back to work, full-time, part-time, some still at home. Some have had more babies, others not. We still share stories, the highs and lows, and love to reminisce about our times when we were new mums starting our parenting and mothers group journey.

1. Outline what a mothers group is.
2. Describe the emotional support this group provides. Include examples in your response.
3. Explain the social support this group provides.
4. Analyse the importance of the mothers group for the mother in the case study.
5. Suggest other ways new parents could receive emotional and social support.
6. Discuss whether you think mothers groups are an important support for new parents. Justify your response.

Positive parenting

The Triple P program (which stands for Positive Parenting Program) was developed by Professor Matt Sanders and the Parent and Family Support Centre at the University of Queensland in Brisbane more than 30 years ago. It aims to assist parents with the difficult job of parenting and to give parents the skills they need to prevent problems developing in their children in the first place. The program equips parents with the skills and strategies to:

- create a supportive family
- encourage appropriate behaviour in their children
- deal with problem behaviour in a positive, consistent and confident way
- build positive relationships with their children
- resolve conflicts.

There is a clear link between parenting quality and positive functioning in children. A child's temperament can have an impact on parenting style. As a result, a parent might use different parenting styles and need different resources and supports with different children, to better meet the needs of each individual child and also reflect their own parenting personality.

Other services and supports available include:

- Playgroup Victoria
- Raising Children Network
- Parentline
- Strengthening Parent Support Program
- Nurse-on-call
- Parenting Services such as O'Connell Family Centre, Queen Elizabeth Centre and Tweddle Child and Family Health Service
- Beyond Blue's Healthy Families focus, which has the 'Dad Stress Test' and 'Postnatal Depression Scale' available
- Breastfeeding Australia
- Berry Street
- Child First.

FIGURE 9.18 Establishing a positive relationship with your children is very important for both you and your child.

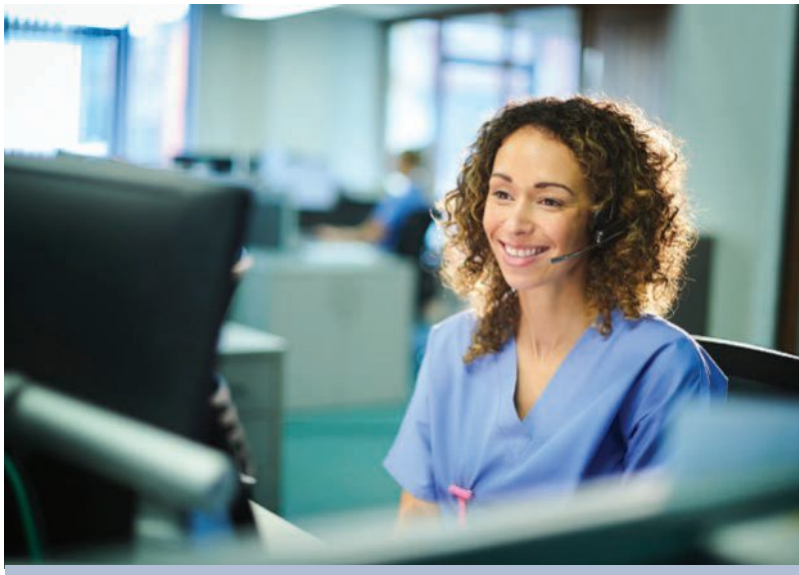


FIGURE 9.19 Nurse-on-call is a free health advice service that puts you directly in touch with a registered nurse 24 hours a day. 000 should be contacted in the case of an emergency.

ACTIVITY 9.11: WE CAN HELP

Research what social and emotional services, supports and resources are available to parents in your local area.

ACTIVITY 9.12: SUPPORTS FOR PARENTS

From your research in Activity 9.11, select one of the services or resources available to parents in your local area. Prepare an infographic of this service or resource for your class that includes:

- the name of the service
- what the service offers parents and children
- how the service provides social and emotional support for parents
- the impact the service has on the health and wellbeing of parents and their children.

ACTIVITY 9.13: COPING WITH TEENS

Many parents use services and resources that provide emotional and social support when their children are young but not when their children are older.

1. Conduct research and find one service or resource that provides emotional or social support to parents with older children.
2. Summarise how this service supports parents.
3. Explain why this service is important for parents.
4. Suggest why parents may not use services and resources when their childen are older.
5. Develop a strategy to encourage parents' awareness and use of such services and resources.

CHAPTER SUMMARY

- How youth and adulthood are perceived as lifespan stages:
  - Perceptions of youth and adulthood vary within our community. There are also stereotypes of, and expectations about, both age groups.
- Key characteristics of a healthy and respectful relationship:
  - We are all involved in a number of relationships; for example, we have relationships with the people with whom we interact every day, with our family members, teachers, peers and colleagues, as well as a romantic relationship with a chosen partner.
  - Key characteristics of a healthy and respectful relationship are more than simply love and affection. The people in the relationship should feel loved, respected, equal and safe to be themselves. Any relationship where someone feels intimidated, pressured, embarrassed or unsafe is not a healthy relationship.
- How a healthy and respectful relationship impacts on health and wellbeing and human development:
  - Healthy and respectful relationships have an extremely positive impact on health and wellbeing, and for human development.
  - Relationships protect against some health conditions. One example is that people who are in relationships have a higher rate of survival from skin cancer, as it is often partners who notice skin changes and encourage their partner to seek medical help.
- Considerations and responsibilities of becoming a parent:
  - Becoming a parent is one of the most significant times in an adult's life; it is also a period of dramatic change.
  - The things to consider when evaluating whether or not to become a parent include the cost of children, the impact of being a parent on your career and work, and the change in your lifestyle.
  - Responsibilities of parents include providing food, shelter, love, support, a sense of security, education and care.
  - Not all adults become parents; some adults choose to remain childless.
- Examples of social and emotional supportive services and resources available for parents:
  - One example of social and emotional support that is available for new parents is the Maternal and Child Health Service. This local council service exists to help parents meet the various challenges of parenthood.

KEY QUESTIONS

SUMMARY QUESTIONS

1. Describe the positive impact having a family can have on an adult's health and wellbeing. Explain how this is achieved.
2. Outline one supportive service or resource available to new parents.
3. Suggest why the cost of children may not be the main consideration for adults planning to have a baby.
4. Discuss why perceptions may not always be correct.
5. List the key characteristics of a healthy and respectful relationship.
6. Suggest why parenting practices can vary greatly.
7. Describe how you might collect data to draw conclusions on the perceptions of youth and adulthood.
8. Describe the term 'relationship'.
9. Provide five examples of different relationships you already have or you might experience.
10. Describe the benefits of emotional and social support for parents.

EXTENDED-RESPONSE QUESTION

QUESTION

'The best age to become a parent is around 20 years of age.' Based on your understanding of the factors that need to be considered when deciding to becoming a parent, to what extent do you agree with this statement? (8 marks)

EXAMINATION PREPARATION QUESTIONS

Mark, aged 40, is married to Jo, aged 38. Five years ago, they had their first child, Mia, who is in good health. Their second child, Michael, was born last year. Mark works full-time as an engineer and Jo works part-time as a dentist. Mark is quite active and loves spending time with his friends. He usually goes out with 'the dads' once a week. He and Jo always have dinner with friends or family at least once on the weekend. Mark also has a regular tennis game with a small group of friends every Friday night after work, to catch up, work off the stress of the week, and help him to stay fit. Jo catches up with her sister every week so their kids can have a play and they can have some adult time. She also plays in her neighbourhood netball competition. Mark and Jo are celebrating their tenth wedding anniversary this year, and plan on renewing their vows later in the year with their closest friends and family present. They have recently had trouble getting Michael to sleep throughout the night, creating some stress for them both. The couple has also stretched themselves financially in purchasing their new home, but it is great for entertaining.

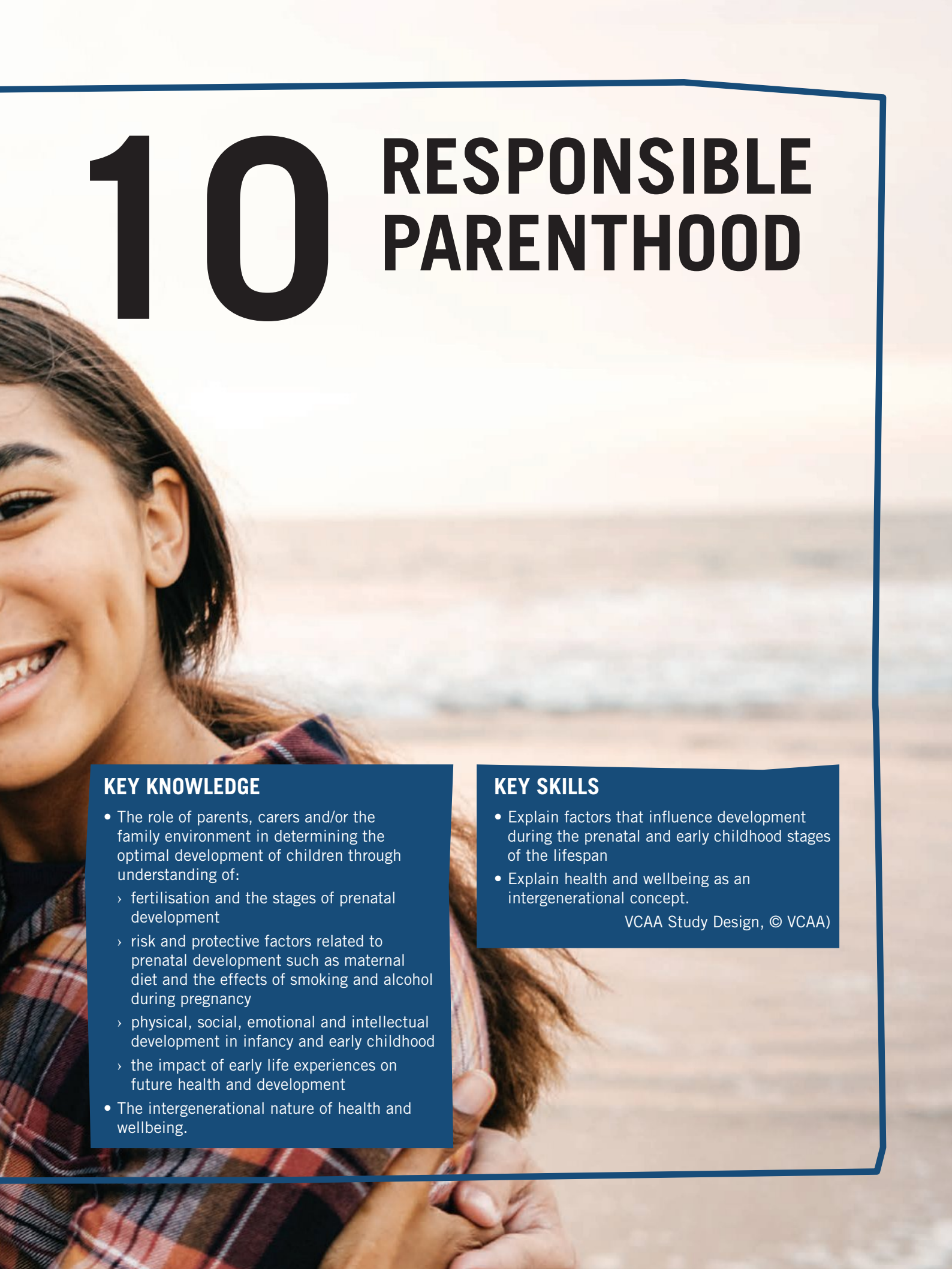
A Outline two characteristics of social and physical development for Mark and Jo. (4 marks)

B Identify all of Jo's different relationships. (3 marks)

C Describe how Jo's relationships promote her health and wellbeing. (6 marks)

D Explain two of the factors Mark and Jo considered before becoming parents. (4 marks)

10 RESPONSIBLE PARENTHOOD



KEY KNOWLEDGE

- The role of parents, carers and/or the family environment in determining the optimal development of children through understanding of:
  - fertilisation and the stages of prenatal development
  - risk and protective factors related to prenatal development such as maternal diet and the effects of smoking and alcohol during pregnancy
  - physical, social, emotional and intellectual development in infancy and early childhood
  - the impact of early life experiences on future health and development
- The intergenerational nature of health and wellbeing.

KEY SKILLS

- Explain factors that influence development during the prenatal and early childhood stages of the lifespan
- Explain health and wellbeing as an intergenerational concept.

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AOS 1

INTRODUCTION

This chapter explores the important roles that parents, carers, and the environment play in the optimal development of children from fertilisation through to early childhood.

What you need to know

- The process of fertilisation.
- The key developmental characteristics of the prenatal stages: germinal, embryonic and foetal.
- The role of protective factors – such as a nutritious maternal diet and access to healthcare – on prenatal development.
- The impact of risk factors – such as smoking, drinking alcohol, and using drugs – on prenatal development.
- The physical, social, emotional and intellectual developmental characteristics related to infancy and early childhood.
- The impact of a child's early life experiences on their future health and development.
- The role of intergenerational health in influencing future health and wellbeing.

What you need to be able to do

- Identify the risk and protective factors that influence development, and describe the influence they have on prenatal, infant and early childhood development.
- Explain how health and wellbeing is an intergenerational concept.

FIGURE 10.1 Parenting plays a major role in children's development.

10.1 THE ROLE OF PARENTS, CARERS AND THE FAMILY ENVIRONMENT IN DETERMINING THE OPTIMAL DEVELOPMENT OF CHILDREN

Parents play an important role in the development of their children from before they are born. They influence the health and development of a baby, and parents/carers and the family environment continue to influence a child's development for their entire life. It is often the things that an individual learns either directly or indirectly through their experiences in childhood that influence their physical, social, emotional and intellectual development, and shape the person they become. There is much evidence to support the belief that experiences in childhood lay the foundation for future health and wellbeing and development.

10.2 FERTILISATION AND THE STAGES OF PRENATAL DEVELOPMENT

The miracle of life is quite extraordinary. It is amazing to take the time to think about how all humans have been created since the beginning of time. For all of us, our journey started in the same way: when the ovum from a woman and the sperm from a man came together and created a new life. Those two single cells combine and continue to multiply and differentiate for about nine months, when we are ready to enter the world.

The sperm and the ovum have to meet at the right time in order for conception to occur, then the new cells need to multiply and differentiate to form the major organs that will keep us alive for our whole life. If all that goes to plan, we then have to survive the traumatic and somewhat dangerous moment of our birth. The true miracle is that, despite all of this, every hour in Australia we welcome approximately 36 new babies into the world.

Process of fertilisation

Fertilisation or conception is the beginning of human development. In the week prior to ovulation, the release of additional oestrogen causes the lining of the woman's uterus, or endometrium, to thicken. Rising levels of progesterone prepare the uterus to support a fertilised ovum and at the same time the ovaries ripen ova in fluid-filled sacs called follicles.

fertilisation: The point at which the sperm penetrates the ovum to form new life.

Around the mid-point of a woman's cycle (approximately day 14 of a 28-day cycle), when oestrogen levels are high enough, a surge in luteinising hormone triggers ovulation. At this point, the ovum is swept into the fallopian tube, where over the next 12–24 hours it awaits fertilisation as it travels to the uterus. For the sperm, it is a matter of survival of the fittest as they make the journey from the cervix to the uterus and into the fallopian tubes (depending on how far the ovum has descended), in search of the ovum.

Sperm can usually survive for about three days in the woman's body. It is difficult to know the exact moment of ovulation; it is thought that conception is most likely to occur if a couple has sexual intercourse one to three days prior to ovulation. This allows the sperm to be waiting in the woman's fallopian tubes.

FIGURE 10.2 Only one sperm can penetrate the ovum.

deoxyribonucleic acid (DNA): A complex acid that contains all of the genetic instructions for the development of an individual organised into the chromosomes within cells.

Once the successful sperm penetrates the ovum, a chemical reaction takes place. This automatically changes the outer covering of the ovum to make it impenetrable to other sperm that have made the journey. At the same time, the tail of the sperm (which helped it swim to the fallopian tubes) is no longer needed and detaches, leaving only the head in the egg.

The 23 chromosomes from the sperm and the 23 chromosomes from the ovum unite, resulting in a new cell with 46 chromosomes that contains the genetic blueprint of a new individual, including its sex. Chromosomes contain tightly packed, tightly coiled molecules called **deoxyribonucleic acid (DNA).** Amazingly, DNA contains all the instructions needed for this single-cell embryo to develop into a unique individual.

TWINS

Identical twins are formed when a fertilised egg splits within a few days of conception, often referred to as monozygotic as they form from a single zygote. Identical twins can share a placenta and develop within the same amniotic sac or sometimes they have their own placenta and amniotic sac. Fraternal twins are formed when two ovum are released from the ovaries during ovulation and are fertilised with two sperm, often known as dizygotic. Fraternal twins have their own placenta and amniotic sac.

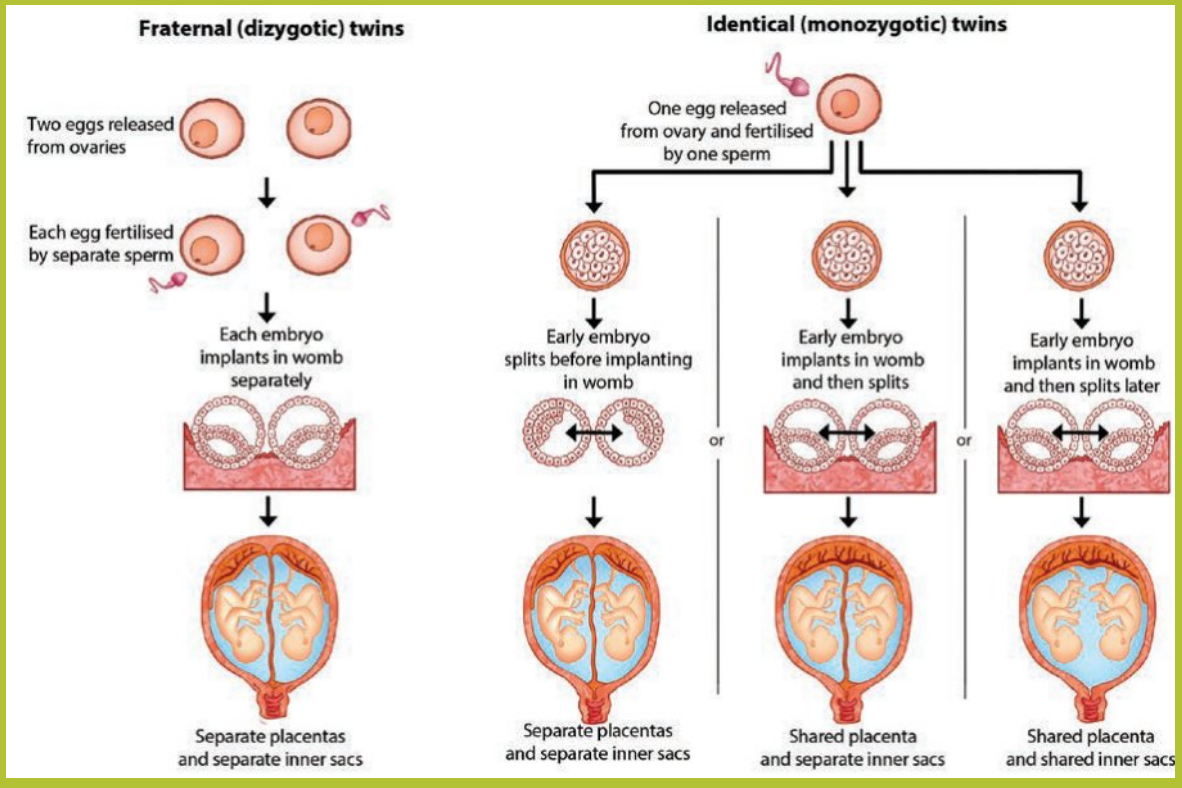


FIGURE 10.3 Fraternal and identical twins

ACTIVITY 10.1: PRENATAL DEVELOPMENT

Watch the video, 'Inside pregnancy: fertilisation' (available at https://cambridge.edu.au/redirect/8887), then complete the following questions.

1 Explain the process of fertilisation.

2 Create some diagrams to assist in your explanation.

Stages of prenatal development

A typical human pregnancy is just over nine calendar months, or 40 weeks, in duration. The baby's due date and gestational age are often calculated by doctors and midwives from the beginning of the mother's last period. This marker is used because it is difficult to determine exactly when the mother is ovulating and, as a result, when the sperm fertilised the egg. The actual moment of conception is likely to occur approximately two weeks into the 40-week timeframe and the baby's real age or foetal age is two weeks behind the gestational age.

Pregnancy is often divided into three trimesters – a period that lasts for about three months. The trimesters are also based on calculating pregnancy from the first day of the mother's last period (40 weeks), as opposed to the stages of pregnancy, which are calculated from conception. The first trimester is measured from week 1 to week 13, the second trimester from week 14 to week 27 and the third trimester from week 28 to week 40, or birth. Trimesters are often used to discuss the wellbeing of the mother. For example, many women report feeling unwell or nauseous in the first trimester.

EXTENSION QUESTION 10.1

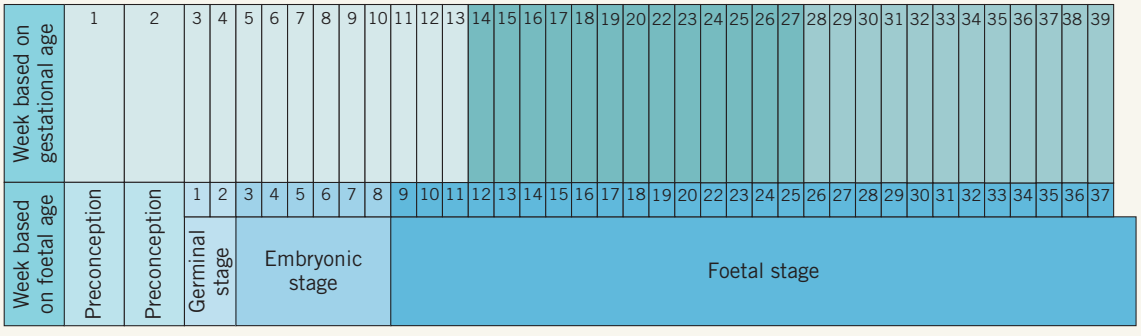
The World Health Organization says sex selection for non-medical reasons raises 'serious moral, legal, and social issues'. Discuss.

In terms of the newly formed life, there are considered to be three major stages or periods of prenatal development. They are determined by the timing of the key characteristics of physical development. These are known as the **germinal**, **embryonic** and **foetal stages**. The timeframes associated with these stages are based on foetal age and are calculated from the moment of conception. As a result, they only span 38 weeks in total. This chapter focuses on the physical development of the baby from conception until birth, and therefore refers to foetal age.

germinal stage: The first stage of prenatal development, measured from the moment of conception until implantation (about two weeks post-conception).

embryonic stage: The second stage of prenatal development, measured from implantation (about two weeks post-conception) until the end of the eighth week after conception.

foetal stage: The third stage of prenatal development, measured from the end of week eight until birth.



Gestational age and the trimesters are generally used when referring to the mother; foetal age refers specifically to the prenatal development of the baby.

FIGURE 10.4 The timeline of foetal and gestational age

Gestational age and the trimesters are generally used when referring to the mother; foetal age refers specifically to the prenatal development of the baby.

Germinal stage of prenatal development

The germinal stage of prenatal development lasts from the moment of conception until about the end of the second week. The newly formed cell divides itself into identical cells as it moves down the fallopian tube on the way to the uterus, where it continues to grow.

The first cell division occurs approximately 24–30 hours after conception. After this first division, the fertilised egg is called a **zygote**. The process of cell division, called mitosis, continues so that by four days after conception there is a group of about 16–20 cells called a **morula**, meaning ball of cells.

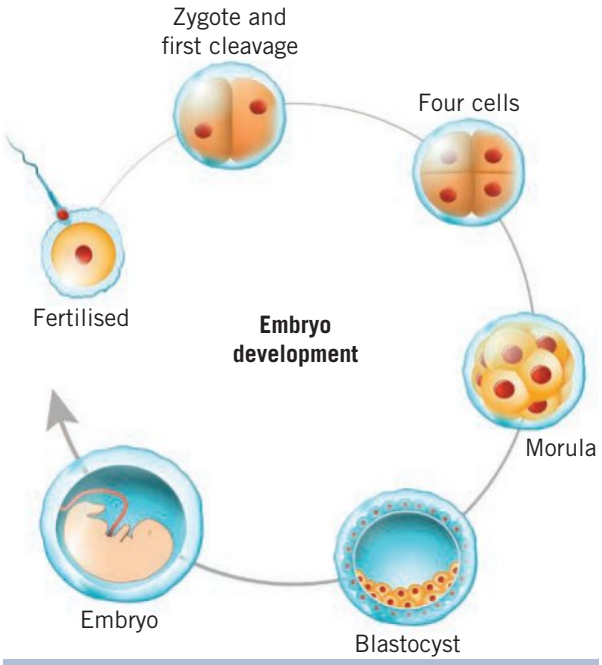


FIGURE 10.5 Cell changes in germinal to embryonic development

About five days after conception, most of the cells in the morula move to one side, leaving a bunched-up group of cells on one side and a sac full of fluid in which the baby will live and grow. Up until this point, all the cells have looked the same, but they now begin to change and perform different functions – a process known as **differentiation**.

At this stage, around six days after conception, the morula becomes a **blastocyst** and continues to move gently down the fallopian tubes. The cells now begin to prepare to perform their individual functions and become different parts of the baby's body or **placenta**. The blastocyst consists of about 64 cells by the time it reaches the uterus. It is at this stage that the blastocyst attaches itself to the endometrium in order to find nourishment to sustain its existence; this is known as implantation.

The primary event of the second week is implantation, which begins about six days after conception and is complete by day 12. A number of hormones are important at this stage. Progesterone plays an important role, ensuring that the endometrium is thick and soft, to allow the blastocyst to sink into it.

Approximately eight days after conception, cells from the growing embryo begin producing a hormone called human chorionic gonadotropin (HCG). This hormone is present in a pregnant woman's blood and urine almost immediately, and is the substance detected by most pregnancy tests. The HCG hormone interrupts the normal menstrual cycle, prevents the new embryo being lost with normal changes to the endometrium and allows the pregnancy to continue. After implantation, the cells are referred to as an embryo. Once implantation occurs, the embryo begins receiving nourishment directly from the cells that line the mother's uterus.

zygote: The name given to the new cell following fertilisation.

morula: The name given to the group of 16–20 cells about four days after conception.

differentiation: During the germinal stage, the process by which cells take on individual functions.

blastocyst: The name given to the group of human cells following differentiation, approximately six days after conception.

placenta: A vital organ that supplies oxygen and nutrients to the developing embryo and removes waste products; it is formed from a layer of the developing embryo and links it to the circulatory system of the mother until birth.

TABLE 10.1 Three stages of prenatal development

STAGE OF PRENATAL DEVELOPMENT	TIMING (FROM CONCEPTION AGE)
Germinal stage	Conception until implantation (approximately the end of week two)
Embryonic stage	Implantation (approximately end of the second week) until the end of week eight
Foetal stage	End of week eight until birth

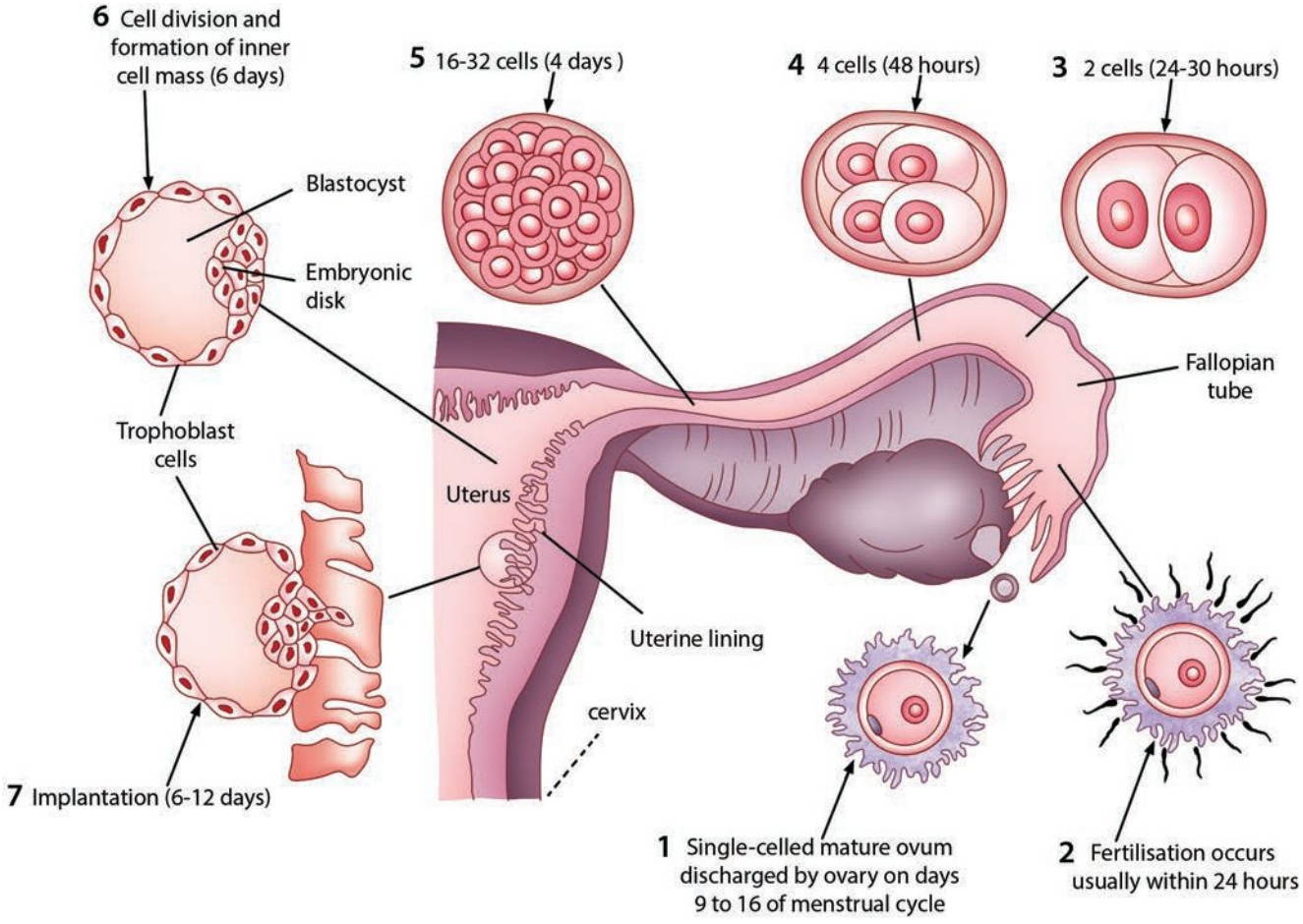


FIGURE 10.6 Germinal stage of prenatal development

Embryonic stage of prenatal development

The embryonic stage of prenatal development lasts from implantation until the end of the eighth week. It is at the beginning of the embryonic stage that a woman would be due to menstruate and, because of the action of HCG after implantation, she should now be able to detect that she is pregnant with the use of a pregnancy test.

During the embryonic stage, the foundations are laid for future growth and development. By about 15 days following conception, the implanted cells of the embryo (which is now about the size of an apple seed) have begun to differentiate. They form three layers, which will later form different organs and tissues, depending on their location.

From the top layer (ectoderm), the neural tube will form, from which the brain, backbone and spinal cord will all grow; other cells will further specialise and form skin, hair and nails. From the middle layer (mesoderm), the heart, circulatory system, muscles, sex organs, skull and bones will begin to appear, and the third layer (endoderm) holds the cells that will become the internal organs, such as the lungs, liver, bowel, bladder and intestines.

At the same time, the outer layer (formed six days after conception) divides into two layers. The outer layer (the chorion) grows fronds (villi) that can penetrate the endometrium to obtain nourishment from the mother and form the beginnings of the placenta.

The second of these layers becomes the amniotic sac that slowly fills with fluid. The amniotic fluid surrounds the baby as it grows, controlling temperature and acting as a shock absorber until birth.

The embryo receives nourishment from the early form of the placenta, chorionic villi and umbilical cord that are already working. By day 17, the central portion of the thyroid gland appears. This important gland soon regulates the rate of metabolism throughout the rest of the human life cycle.

About 18 days after conception, the heart appears. The site of the brain is also recognisable, with the appearance of the neural plate about 18 days after conception. By the end of week three, the sections of the brain are recognisable. The embryo's respiratory system also begins to develop by three weeks. The heart begins to function and divide into chambers.

The main organs, including the kidneys and liver, begin to grow. The limb buds that will later form the arms and legs begin to sprout and facial features are beginning to form. The pituitary gland (which regulates the release of hormones) and muscle fibres form at this point. The embryo begins to move, even though these movements are not felt by the mother until much later in the pregnancy.

During this critical period, the developing embryo is also susceptible to toxic exposures. Alcohol, drugs, infections, radiation and nutrient deficiencies all pose a threat to the health of the embryo. This makes the role of the parents, particularly the mother, critical in promoting the development of the child. To ensure optimal physical and intellectual development, the mother needs to consume a nutritious diet, avoid radiation and limit the embryo's exposure to drugs, alcohol and infections.

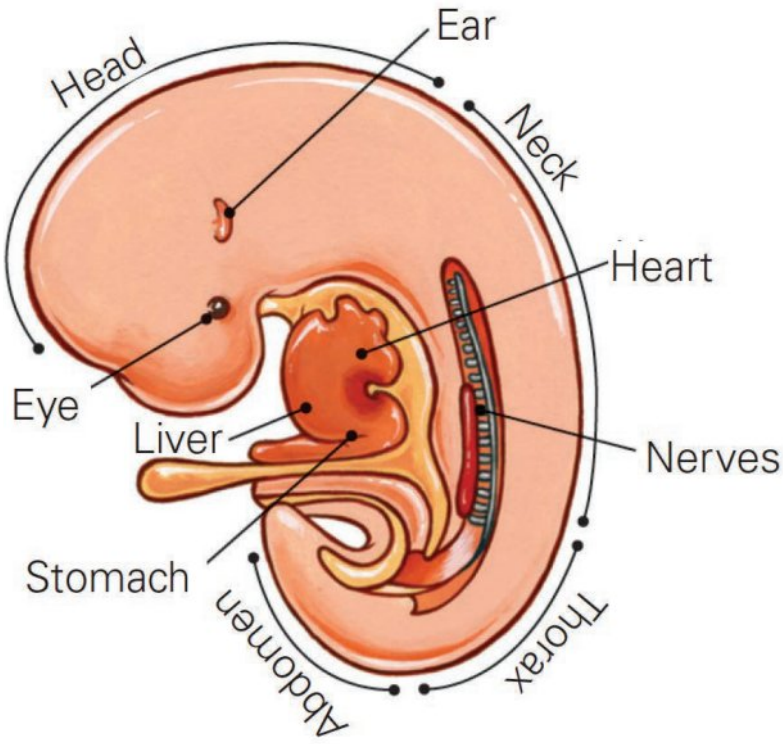


FIGURE 10.7 Embryonic stage of prenatal development

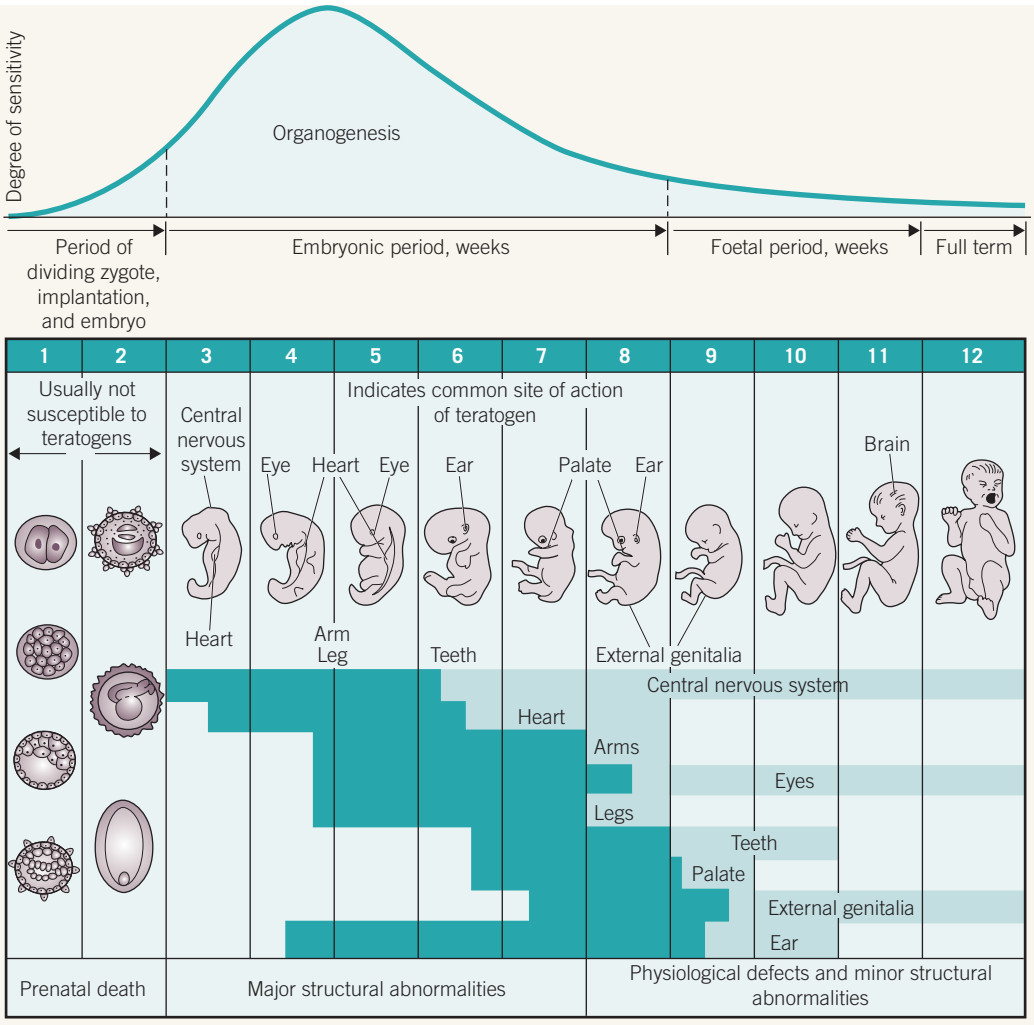


FIGURE 10.8 Detailed timeline of prenatal development

Foetal stage of prenatal development

The foetal period of prenatal development is the longest of the prenatal periods, and lasts from the beginning of week nine until the end of pregnancy. This period is a time of extensive growth (in size and mass) as well as the development of organ systems that were established in the embryonic period.

By the beginning of the foetal stage, all the muscles, organs and nerves are beginning to function. The hands can now bend at the wrist, the webbed appearance of the feet begins to disappear and the eyelids are beginning to cover the eyes. The brain continues to grow and develop, the respiratory system differentiates and the gastrointestinal tract begins to function. However, some systems do not achieve their maximum function until after birth, including the respiratory system (lungs), cardiac system (heart) and neural system (brain).

FIGURE 10.9 Foetal stage of prenatal development

FOETAL DEVELOPMENT BY WEEKS

- **Week 10:** The embryo is now referred to as a foetus. It is approximately 2.5 cm long and all its organs are formed.
- **Week 13:** The foetus is approximately 7 cm long and can now swim vigorously in the amniotic fluid.
- **Week 14:** The foetus's eyelids are fused over and the foetus can now silently cry. Nails on fingers and toes are beginning to grow.
- **Week 16:** The foetus is approximately 14 cm long (about the size of an avocado).
- **Week 18–20:** The foetus is approximately 21 cm long (about the size of a mango). The ears are functioning and the foetus can hear muffled sounds. An ultrasound is usually undertaken at this stage to check for abnormalities and to check the position of the placenta. Genitals can now be distinguished.
- **Week 24:** The foetus is approximately 33 cm long and starts to make breathing movements with the lungs.
- **Week 28:** The foetus now weighs approximately 1 kg and is 37 cm long.
- **Week 32:** The foetus starts to have strong movements and has moved into the 'head down' position. It spends most of its time asleep.
- **Week 36:** The foetus is approximately 46 cm in length. If born now, it has an excellent chance of survival. Lung development is rapid over the coming weeks.
- **Week 40:** The foetus is approximately 51 cm long and is ready to be born.

THE ROLE OF GENETICS

Genetics include all the things that are inherited from parents via DNA at the moment of conception. These include:

- **inherited characteristics:** body type, potential for height, basal metabolic rate, hair colour and eye colour
- **sex:** whether or not the individual is male or female
- **genetic disorders:** genetically inherited diseases such as haemophilia, cystic fibrosis or phenylketonuria (PKU) or other genetic disorders that may be the result of chromosomal abnormality; these are not inherited from the parents, but rather are the result of incorrect cell division. Down syndrome is an example of such a disorder.

Genetic inheritance

Traits or inherited characteristics are passed from parents to their offspring via their genes. The thousands of genes that make up the new human life are situated along strands of a chemical substance that is known as our DNA, which is inside our chromosomes. These chromosomes carry all the genes that determine our traits or physical characteristics, such as hair colour, blood type, eye colour and height.

There are 23 pairs of chromosomes in all human cells (except the sex chromosomes). All the genes that make up each individual also come in pairs. One gene from each pair is inherited from each parent. The sperm and the ovum contain one of each of the genes required to form a new individual in one set of 23 chromosomes.

When the sperm and the egg unite, a new individual is formed with two copies of each gene and 23 pairs of chromosomes (46 chromosomes).

Characteristics such as blood type or eye colour have many different variations. Each variation is called an allele. Dominant inheritance is when one allele of a gene is dominant over the other. For example, if the individual inherits the allele for large eyes from their mother and the allele for small eyes from their father, they will have large eyes as large eyes are dominant over small eyes. Table 10.2 lists dominant and recessive alleles.

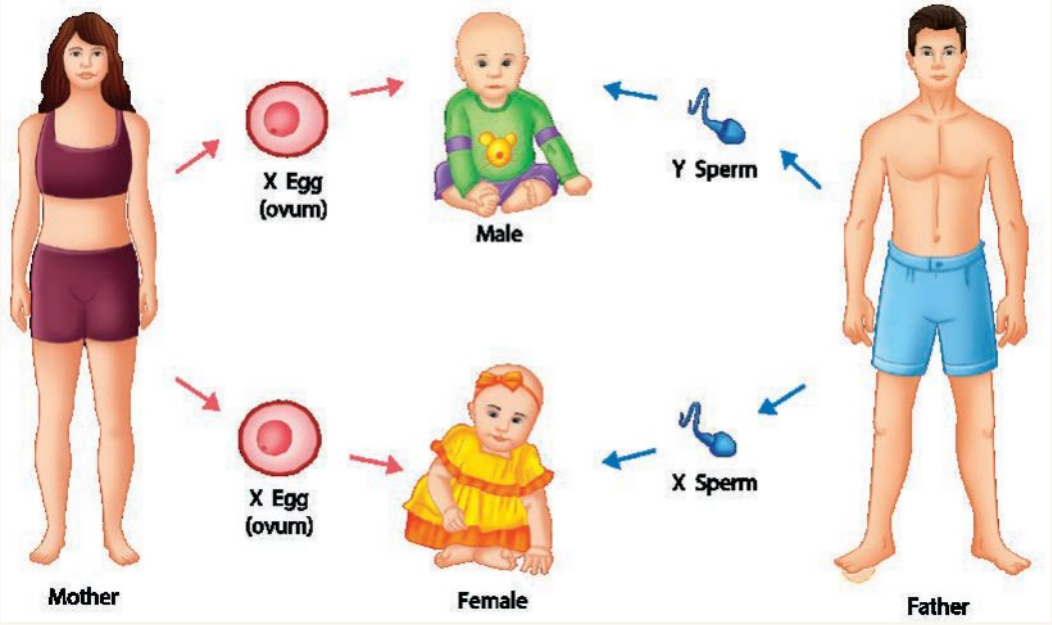


FIGURE 10.10 In Australia, embryonic sex selection is only allowed to prevent the transmission of genetic conditions that are linked to sex.

TABLE 10.2 Dominant and recessive genetic characteristics

DOMINANT	RECESSIVE
Blood type A	Blood type O
A lot of body hair	Little body hair
Baldness	Not bald
Broad lips	Thin lips
Broad nose	Narrow nose

TABLE 10.2 Dominant and recessive genetic characteristics *(continued)*

DOMINANT	RECESSIVE
Dwarfism	Normal growth
Hazel or green eyes	Blue or grey eyes
Large eyes	Small eyes
Short stature	Tall stature
Tone deafness	Normal tone hearing
Second toe longest	First or big toe longest
Tongue rolling	No tongue rolling
Dimples	No dimples
Long eyelashes	Short eyelashes
Free ear lobes	Attached ear lobes
Widow's peak	No widow's peak or straight hairline
Bent little finger	Straight little finger
Left thumb over right when fingers interlocked	Right thumb over left when fingers interlocked

ACTIVITY 10.2: GENETIC INHERITANCE

1 Using the information about genetic inheritance, draw a diagram to explain conception. Include information about gender, chromosomes and genes in your diagram.

2 Complete a survey of 10 friends to see who has certain dominant and recessive traits.

a Copy the following table.

DOMINANT		RECESSIVE	
Tongue rolling		No tongue rolling	
Free ear lobes		Attached ear lobes	
Widow's peak		Straight hairline	
Hair between first and second knuckle on fingers		No hair on fingers	
Bent little finger		Straight little finger	
Left thumb over right when fingers interlocked		Right thumb over left when fingers interlocked	
Second toe longer than first toe		Big toe or first toe longest	
Freckles		No freckles	

b Ask each person to roll their tongue; if they can, put a tick in the column next to 'tongue rolling'; if they can't, put a tick in the column next to 'no tongue rolling'. Repeat this for all eight traits on the list.

c Tally up how many ticks you got for each dominant and recessive trait.

d Report your results to the class.

THE PLACENTA

The placenta implants flat against the wall of the uterus. By the end of pregnancy, it is about the size of a dinner plate and approximately 2 cm thick, and looks very much like a body organ.

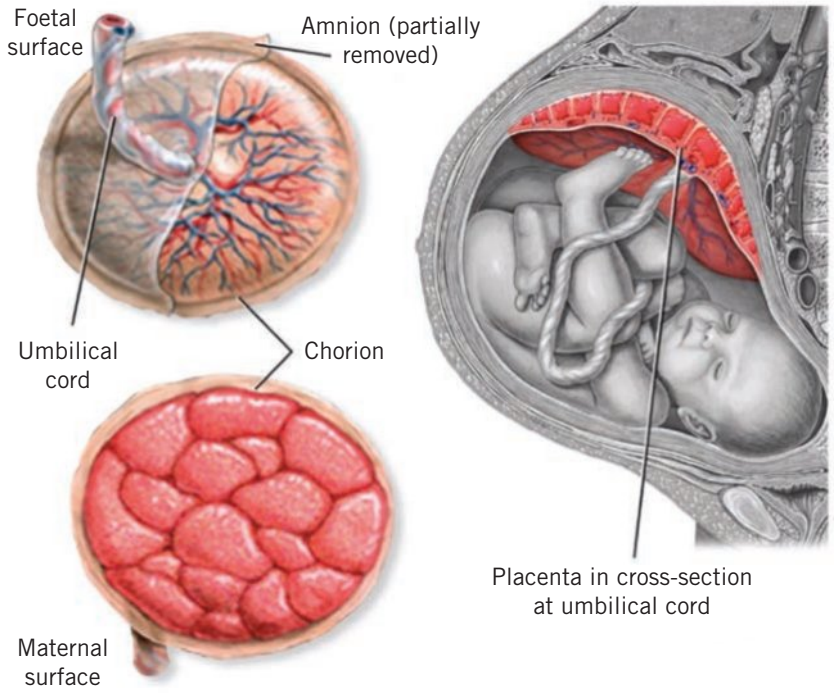


FIGURE 10.11 The placenta

During the nine months of pregnancy, the placenta provides nutrition (e.g. fats, protein, and key vitamins and minerals), gas exchange (e.g. providing oxygen and removing carbon dioxide), waste removal, and endocrine and immune support for the developing foetus.

The placenta is not a barrier, as it allows most substances in the mother's bloodstream to cross over into the baby's bloodstream. These include nutrients, alcohol, nicotine, caffeine, medications, drugs, and viruses such as listeria and rubella.

ACTIVITY 10.3: THE PLACENTA

Explain the role of the placenta in promoting the health and wellbeing and human development of the developing foetus.

AOS 1

10.3 RISK AND PROTECTIVE FACTORS RELATED TO PRENATAL DEVELOPMENT

Many of the things a mother ingests while pregnant can cross the placenta and enter the body of her unborn child. It is important for pregnant women to be informed that the choices they make will impact the health of their baby. Some choices a mother makes – such as eating a balanced diet and engaging in regular low-impact exercise – will not only benefit her own health but also help to promote the health and development of the baby, while other choices, such as smoking tobacco and drinking alcohol, can cause harm to a baby.

Sudden Infant Death Syndrome (SIDS): The sudden unexplained death of a baby.

Risk factors

The risk factors that are discussed in this chapter include smoking and alcohol consumption during pregnancy, drug use and parental health and disability.

Smoking during pregnancy

Smoking tobacco during pregnancy is known to be detrimental to the growth and development of the foetus. Passive smoking can also affect the foetus. Tobacco smoking reduces the oxygen supply and blood flow to the foetus via the placenta; nicotine increases the foetus's heart rate and reduces the movements that it is practising to assist it to breathe after birth.

According to the Australian Institute of Health and Welfare (AIHW):

> Tobacco smoking during pregnancy is the most common preventable risk factor for pregnancy complications, and is associated with poorer perinatal outcomes, including low birthweight, being small for gestational age, preterm birth and perinatal death. (AIHW, 2017)

The physical growth and development of a foetus can be impacted and the birthweight of a baby whose mother smokes during pregnancy is likely to be lower than if the mother were a non-smoker. Babies born with a low birthweight have a greater risk of poor health, of developing significant disabilities and of premature death. They are also more likely to need to be resuscitated and require a longer period of hospitalisation after birth.

Also, when women smoke during pregnancy, it is believed to increase the risk of **Sudden Infant Death Syndrome (SIDS)** and the risk of cleft lip and/or cleft palate, and may impact learning and intellectual development. It can also increase the risk of ectopic pregnancy, miscarriage and preterm birth.

According to statistics (Li et al., 2012), smoking during pregnancy has also been linked to problems with the placenta and premature rupture of the membranes of the uterus. The more cigarettes a woman smokes during pregnancy, the higher the risk of complications.

Nearly 9.5 per cent of women who gave birth in 2017 reported smoking in the first 20 weeks of their pregnancy and 7.3 per cent reported smoking after 20 weeks of pregnancy. The proportion of Aboriginal and Torres Strait Islander women who smoke at some point during pregnancy is significantly higher at just under 50 per cent.

Some population groups have higher maternal smoking rates in the first 20 weeks of pregnancy, including:

- younger mothers, with 32.4 per cent of mothers aged under 20 years smoking in the first 20 weeks of pregnancy (compared with 5.9 per cent of mothers aged 35–39 years)
- mothers living in the lowest SES areas, with 17.8 per cent smoking in the first 20 weeks of pregnancy (compared with 2.9 per cent of mothers in the highest SES areas)
- mothers who live in remote or very remote areas, with 33.7 per cent of mothers in very remote areas and 17.6 per cent in remote areas reporting that they smoked in the first weeks of pregnancy (compared with 7.2 per cent of mothers in major cities).

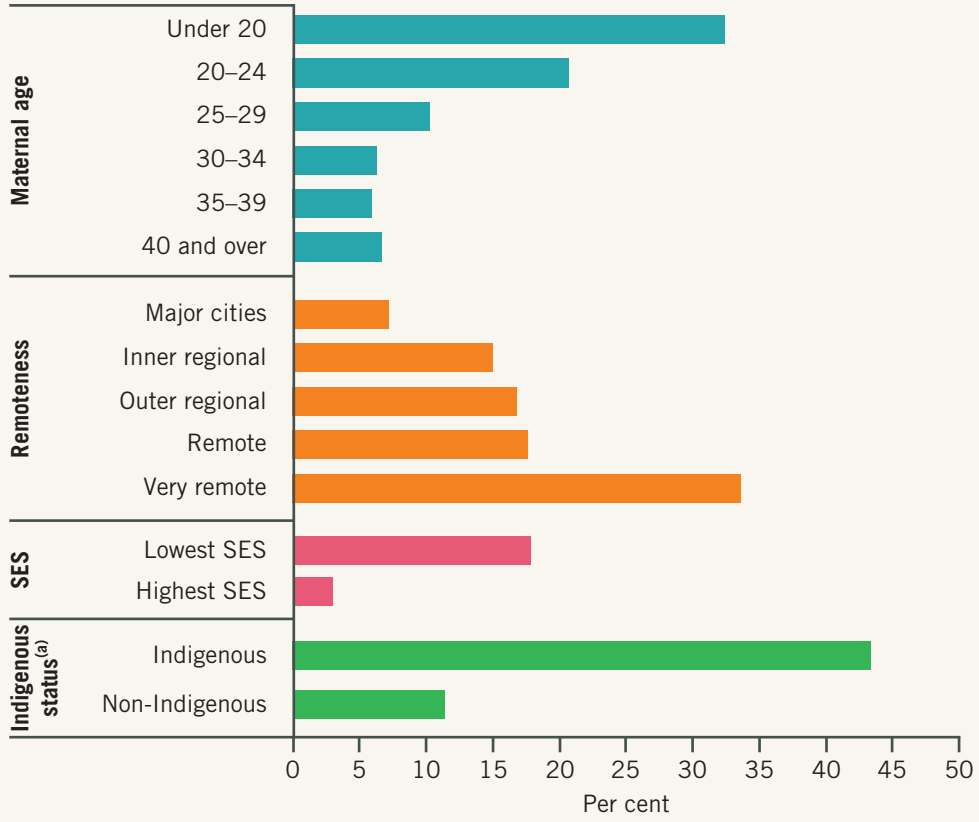
It is important to note that some women may fall into more than one of these categories.

For women who do smoke during pregnancy (some of whom smoke before they know they are pregnant), quitting smoking can reduce the impact on themselves and their baby. Unfortunately, of the 16 per cent of women said that they smoked before they knew they were pregnant, 11 per cent continued to smoke after they found out they were pregnant.

Having tobacco smoke in the home is also known as 'passive smoking'. It is important to note that passive smoking can also cause harm to the developing foetus and its mother. There is considered to be no safe level of exposure to tobacco smoke. Tobacco smoke contains many toxic chemicals that may lead to adverse health outcomes for both pregnant women (e.g. asthma and other respiratory infections) and their unborn babies.

A non-smoking pregnant woman is more likely to give birth to a baby with a low birthweight if she is exposed to passive smoking in the home. Babies who have been exposed to tobacco smoke in the home may also be at higher risk of SIDS, and it is also known to reduce lung growth.

ACTIVITY 10.4: SMOKING



(a) Age-standardised percentages.

FIGURE 10.12 Smoking rates in the first 20 weeks of pregnancy by maternal characteristics, 2017

1 Identify two trends in the data in Figure 10.12.

2 Identify the four population groups of women who are most likely to smoke.

3 Outline reasons that might contribute to higher smoking rates among these population groups.

4 Explain the impact that smoking can have on the development of a foetus.

Drinking alcohol during pregnancy

It is difficult to determine whether there is a safe volume of alcohol that can be consumed during pregnancy. As a result, experts suggest that pregnant women should abstain from consuming alcohol throughout the duration of their pregnancies.

One thing that is clear is that alcohol crosses the placenta, and it can be detrimental to foetal health and development. Binge drinking in particular is potentially dangerous, especially in the first trimester of pregnancy. Some women are not aware that they are pregnant for a large percentage of this trimester.

Alcohol is known to be harmful to the unborn child, and is considered to be the most preventable cause of birth defects and brain damage in children. Consuming alcohol during pregnancy can lead to low birthweight and damage the baby's central nervous system, causing mental retardation, growth deficiencies and facial abnormalities, depending on the time and extent of the exposure to alcohol. It can also increase the risk of miscarriage, premature birth or stillbirth.

Foetal alcohol syndrome (FAS) is a rare condition associated with heavy alcohol consumption during pregnancy. This level of alcohol can restrict the growth of the baby and affect brain growth and development, resulting in developmental delay and behavioural and learning problems in childhood.

Data suggest that 40 per cent of pregnant women consume at least one alcoholic beverage during their pregnancy. Many of these women consume alcohol before they know they are pregnant (56 per cent) and approximately one quarter continue to drink once they know they are pregnant. Of the 26 per cent of women who continue to drink alcohol once they know they are pregnant, most (78 per cent) consume

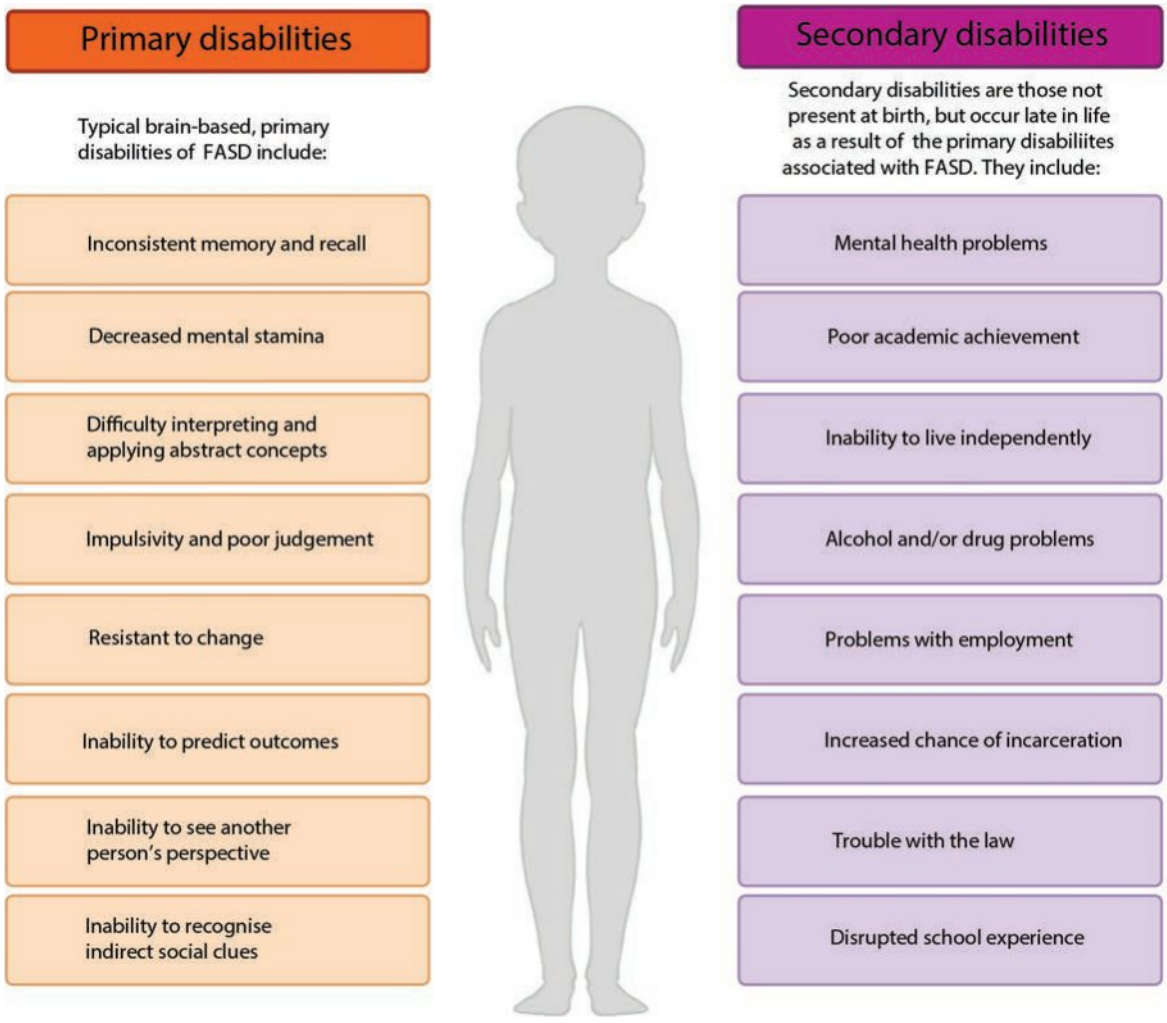


FIGURE 10.13 Alcohol consumption during pregnancy can greatly impact a child's health and wellbeing and their development in many ways.

DISCUSS

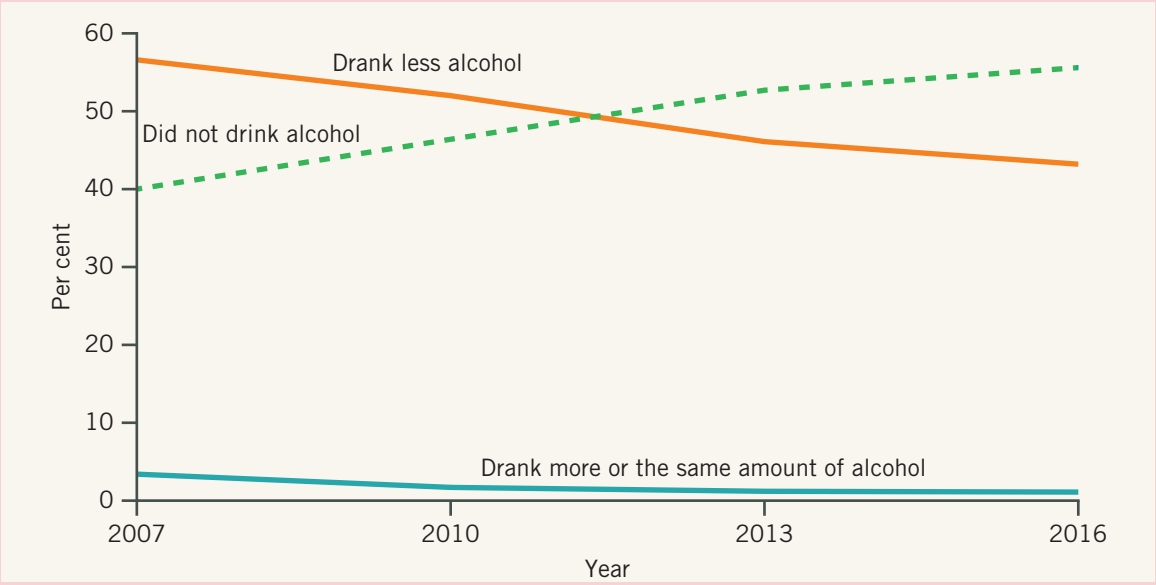


FIGURE 10.14 Pregnant women and alcohol consumption

Discuss two trends evident in the graph in Figure 10.14.

alcohol monthly or less, and most (98 per cent) limit this to one or two standard drinks at a time. In recent years, there has been an increase in the number of women abstaining from alcohol while pregnant, from 40 per cent in 2007 to 56 per cent in 2016.

Drug use during pregnancy

Drugs refer to a range of substances, from illicit drugs to over-the-counter drugs, vitamins and even caffeine. Caffeine is found in some soft drinks, chocolate and coffee. While three serves of caffeine a day is thought to have little impact on a foetus, a heavy caffeine intake can reduce blood flow to the placenta, especially if it is absorbed in conjunction with nicotine. Excess caffeine intake can lead to low birthweight and complications during pregnancy

There are some vitamins that can be harmful during pregnancy if taken in quantities greater than required. Women should avoid self-medicating during pregnancy and should speak to their healthcare professional prior to taking any vitamins or other medication. A balanced diet is safer and healthier for both mother and baby. However, if supplements are still required, a specialised pregnancy vitamin should be used.

There are many antibiotics that have been identified as safe to use during pregnancy; however, there are also many everyday medications such as antihistamines and some pain-relief medications that are not considered safe. Pregnant women should check with their healthcare provider before taking any of these substances.

Illicit drug use at any time is dangerous, but it also carries risks to the foetus during pregnancy. Cannabis has similar effects to tobacco on an unborn baby. A reduction of oxygen and nutrients through the placenta may result in reduced growth and development of the baby. Women who use heroin during pregnancy pass it on to their baby via the placenta. The baby can experience withdrawal symptoms, which increases the risk of miscarriage, early labour or stillbirth. Sharing injecting equipment increases the risk of contracting blood-borne viruses such as HIV and hepatitis C that can be passed onto the baby.

ACTIVITY 10.5: DRUG-TAKING AND PREGNANCY

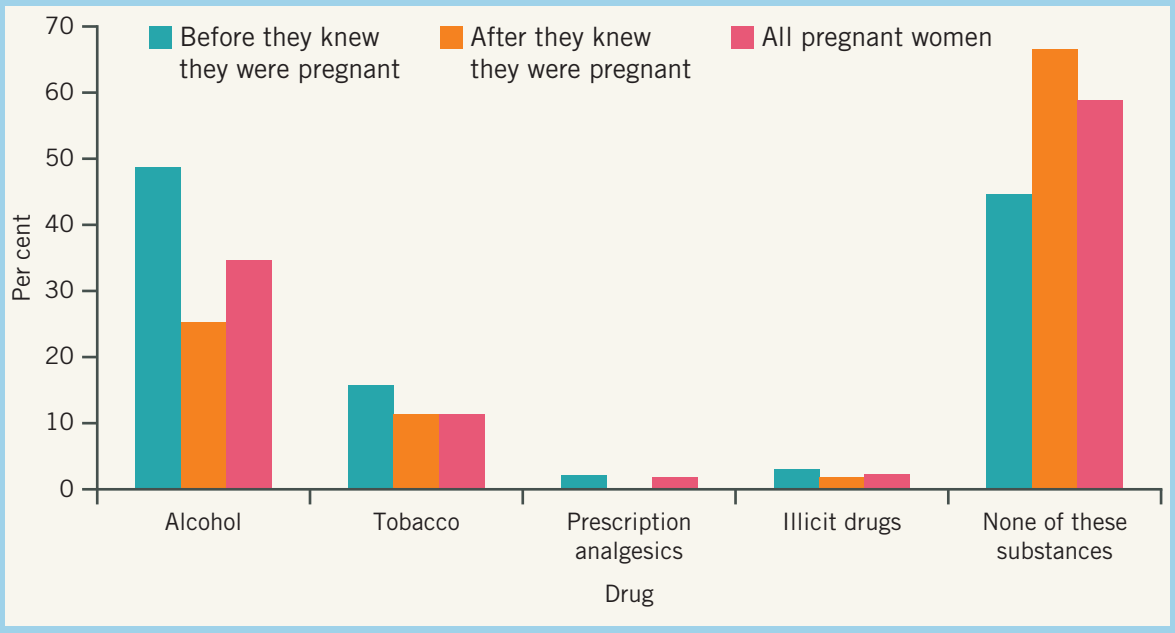


FIGURE 10.15 Drug-taking behaviours before and after knowledge of pregnancy, pregnant women aged 14–49, 2016 (percentage)

Referring to Figure 10.15, answer the following questions.

1 Identify two trends evident in the graph.

2 Explain the impact on foetal and childhood development of illicit drug use by the mother during pregnancy.

3 Investigate the impacts on a child's health and wellbeing and development of growing up with one or more parents who use illicit drugs.

Parental health and disability

There is no doubt that maternal health during pregnancy can have an impact on the health and wellbeing of the unborn child.

A healthy well-balanced diet for the mother, healthy body weight and absence of serious conditions such as gestational diabetes and pre-eclampsia can all assist in promoting the health of mothers, and therefore also promote the health of their babies.

On the other hand, when women with pre-existing conditions such as psychiatric conditions, diabetes, hypertension or other cardiac conditions decide to have a baby, they are exposed to additional risks that may pose a threat to their health and wellbeing or that of their baby.

According to the AIHW (2017), 20 per cent of mothers who gave birth in Australia were classified (according to their body mass index) as being obese. Being obese during pregnancy can increase morbidity and mortality for both the baby and the mother. The babies of mothers who are obese have a higher risk of congenital anomaly, neonatal death and stillbirth. The mothers themselves are more likely to deliver a baby via caesarean section if they are obese and are at greater risk of gestational diabetes, pre-eclampsia, thrombosis, haemorrhage and infections.

Pregnancy places additional physical and mental as well as financial demands on women; however, these factors present an even greater challenge for mothers with a disability. Generally, women with a disability are as fertile

ACTIVITY 10.6: MATERNAL CONDITIONS

Research the following maternal conditions and their impact on the mother's health and wellbeing and on the unborn child's health and wellbeing and development:

a gestational diabetes

b pre-eclampsia

c thrombosis

d haemorrhage.

as women without a disability, as ovulation is regulated by hormones. This means that having a disability does not always rule out the option of becoming a parent. Of all families with children, approximately 17 per cent have one parent with a disability. This is not to say, though, that pregnancy for women with a disability does not come at a risk.

Parental disability in the form of mental illness or physical or intellectual disability can obviously impact the health of both the mother and baby during pregnancy. Careful consideration may need to be given to changes the mother needs to make to the medication she is taking if she wishes to have a baby. In some cases, this can have a negative impact on a mother's wellbeing during her pregnancy.

Women with a disability might need close medical attention throughout their pregnancies, and they may also be more likely to need a caesarean delivery (depending on the type of disability), which carries its own risks.

It is not just the health and wellbeing of the mother that can determine the health and wellbeing and development of a new baby. While the health of the father does not have an impact on a baby during pregnancy (unless he smokes), it is an important factor at the time of conception. It is important that the father be as healthy as possible prior to conception, in order to reduce the risks to the baby. Research has shown that if the father is in poor health and smokes cigarettes and drinks alcohol, this impacts the health of his sperm.

FIGURE 10.16 The father's health at the time of conception can impact the health of a baby.

Unlike women, who are born with all their ova, men need to produce sperm, so their lifestyle behaviours can have a direct impact on the quality of sperm produced. Sperm have an important role to play in conception. The quality, quantity and mobility of sperm are all important. There needs to be a good supply of sperm in the ejaculation, as many will not make the long journey to the ovum. The sperm need to be of a high quality, with the correct structure and form – an oval head and long tail. Finally, they need to be mobile, as this is important to help propel them to the ovum.

Some things men can do to improve their health and the health of their sperm prior to conception is to avoid alcohol, quit smoking and avoid passive smoking, lose weight if needed, continue exercising but only to a moderate intensity to avoid overheating, consume a healthy diet with additional vitamin A, vitamin C and zinc, stay hydrated and keep their testicles cool. Frequent ejaculations a week prior to conception are also thought to produce more sperm of a higher quality.

ACTIVITY 10.7: MEN'S HEALTH AND CONCEPTION

Create a pamphlet or infographic informing men about the importance of optimal health and wellbeing prior to conceiving.

TABLE 10.3 Maternal vaccine-preventable diseases

DISEASE	IMPACT ON THE HEALTH OF A FOETUS
Chickenpox	May cause defects in the brain, eyes, skin and limbs of the baby if a pregnant woman has chicken pox in the first half of her pregnancy, and having chicken pox in the last days of pregnancy can result in high neonatal mortality
Influenza	Increases the risk of miscarriage, premature birth or stillbirth, and increases the risk of severe illness and death in the mother
Rubella	Increases the risk of miscarriage and stillbirth, and can cause congenital anomalies. Being exposed to rubella in pregnancy increases the baby's risk of blindness, deafness, heart defects, defects in the brain, impaired growth, intellectual disability and inflammation of the brain and liver.
Mumps	Can increase the risk of miscarriage
Measles	Can increase the risk of miscarriage, pre-term birth or stillbirth

Protective factors

The protective factors that are discussed in this section are vaccination, maternal diet, parental income, parental education and parental access to healthcare.

Vaccination

Vaccination can protect a pregnant woman and her unborn child from a number of infectious diseases, such as chickenpox, influenza, rubella, mumps, tetanus, measles and hepatitis B. It is important that a woman who is planning to become pregnant speaks to her doctor about ensuring that all her immunisations are up to date, as many cannot be given during pregnancy.

Chickenpox may cause defects in the brain, eyes, skin and limbs of the baby if it occurs in the first half of a pregnancy, and having chickenpox in the last days of pregnancy can result in high neonatal mortality. Influenza increases the risk of miscarriage, premature birth or stillbirth, and also increases the risk of severe illness and death in the mother. Rubella increases the risk of miscarriage and stillbirth, and can cause congenital anomalies. Being exposed to rubella in pregnancy increases the baby's risk of blindness, deafness, heart defects, defects in the brain, impaired growth, intellectual disability and inflammation of the brain and liver. Mumps can increase the risk of miscarriage. Measles can increase the risk of miscarriage, pre-term birth or stillbirth.

Maternal diet

A mother's diet prior to conception is important, as it can help to improve the physical condition of the mother's body and prepare it to support a new life. It is also important that women consume a healthy, well-balanced diet during pregnancy to meet their own nutritional needs and those of their baby.

Folate is a B-group vitamin that is important in protecting against neural tube defects such as spina bifida during foetal development. A concern over deficiency of folate in the diet of Australians has led to the fortification of some foods with folic acid. It is recommended that women trying to become pregnant consume 400 mcg of folate per day, and should continue to consume that amount during the first three months of pregnancy. Most women do not consume enough folate, and it is estimated that women of childbearing age (16–44 years) should consume an average of 108 mcg daily. Folate can be found naturally in a wide range of foods, such as green, leafy vegetables, cereals, fruits and grains. Folic acid is a synthetic form of folate that is used in supplements.

SPINA BIFIDA

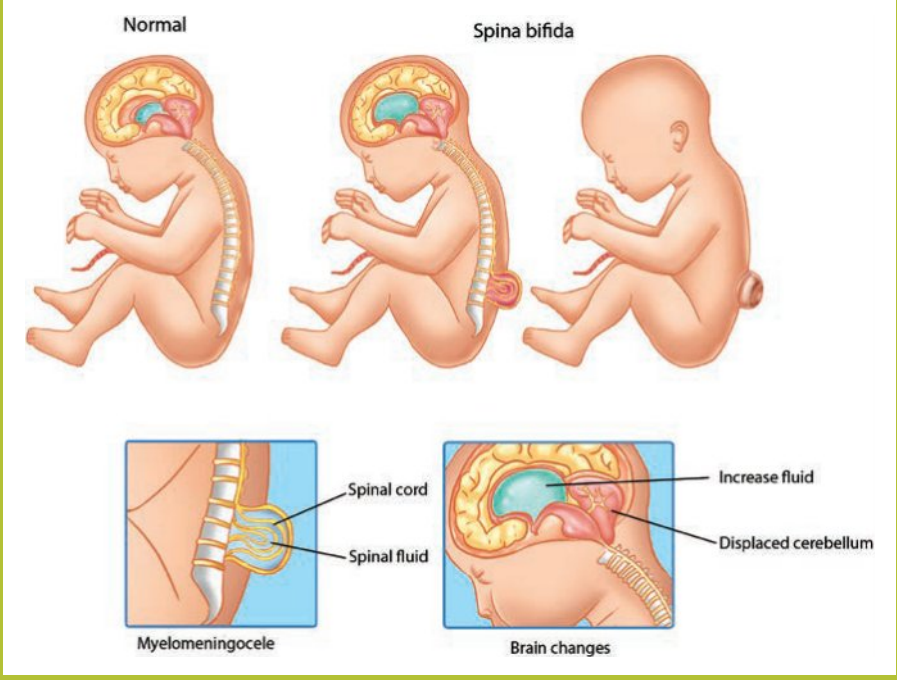


FIGURE 10.17 Taking folate prior to and during pregnancy can significantly reduce the risk of having a baby with a neural tube defect.

Spina bifida occurs when there is an incomplete formation of the spine and spinal cord, which occurs during the embryonic stage of pregnancy. In the initial cell division stages the neural tube is a flat layer of cells that then fold over to form a tube that houses the spine and spinal cord. If the tube fails to fold over to form a tube at some point along the spine, the spinal cord is left exposed and can protrude out.

Spina bifida has varying degrees of disability, though common effects are paralysis, leg and bowel weakness, bladder incontinence, excess fluid in the brain and cognitive impairment. In Australia the risk of spina bifida is approximately one in 800 pregnancies. Taking folate prior to and during pregnancy can significantly reduce the risk of having a baby with a neural tube defect.

Iodine is another essential mineral important for the healthy development of the brain and nervous system of the foetus. In recent years iodine consumption has dropped in Australia due to a possible reduction in iodine levels in Australian soils and less use of iodised salt in cooking. All bread now made in Australia is fortified with iodised salt to help address this deficiency. Other food sources of iodine include seafood, seaweed, dairy products and eggs.

It is suggested that pregnant women consume 220 mcg of iodine daily, and it is estimated that, on average, women of childbearing age consume less than half this amount.

DISCUSS

'Eating for two' is not healthy for a pregnant woman or the foetus. Discuss how poor maternal health and wellbeing can impact a child's development.

The old saying that 'women who are pregnant need to eat for two' is simply untrue. While women need to ensure that they are consuming adequate amounts of key nutrients, they certainly do not need to double their kilojoule or energy intake. Consuming too much energy can lead to unhealthy weight gain, which can have a negative impact on the health of the mother and her unborn child.

It is recommended that the dietary intake of protein, vitamin A, iodine, iron and vitamin C needs to increase during pregnancy. The B-group vitamins, zinc and magnesium also need to increase slightly. These increases in nutrients equate to two extra serves of fruit, half a serve of meat, fish, nuts or legumes and possibly one extra serve of vegetables, providing that the mother was consuming the adequate number of serves prior to pregnancy. In real terms, this could be as easy as adding one orange, eight strawberries and 40–60 g of meat/fish/legumes extra per day.

It is important to note that while the number of serves of dairy food does not increase in pregnancy, and nor does the recommended dietary intake of calcium, during pregnancy women need to ensure that they consume the recommended 1000 mg per day. Calcium is important for the formation of hard tissue in the foetus and also to maintain bone strength in the mother. If women do not consume enough calcium, the growing foetus draws calcium from the mother's bones, which increases the risk of the mother developing osteoporosis later in life.

In addition to the nutritional value of food, pregnant women need to avoid certain foods, and to ensure that food is prepared and stored safely to avoid the risk of infection from listeria, salmonella and toxoplasmosis. Foods women should avoid when pregnant include soft cheeses such as brie and camembert, soft-serve ice-cream, cold meats, raw seafood and prepackaged salads. Listeria can grow in the fridge, so pregnant women should avoid foods that have been prepared and stored for more than 12 hours. Listeria is serious, as it can cross the placenta to the foetus and result in miscarriage, stillbirth or premature birth, yet it may have common flu-like symptoms or no symptoms at all. If detected quickly, it can be treated with antibiotics. A healthy maternal diet is therefore a significant protective factor in promoting the health and development of the unborn baby.

Parental income

A higher income increases access to goods and services such as nutritious food and healthcare. Having access to these resources can assist women to promote their own health and the health and development of their baby. For example, women living in the highest SES areas tend to have their first antenatal visit earlier in pregnancy than those in lower SES areas. In 2017, approximately 76 per cent of women in the highest SES areas attending antenatal care in the first trimester, compared with 67 per cent of women in the lowest SES areas.

Women of higher SES are more likely to have private health insurance, which allows them a choice of doctor to care for them during their pregnancy, which results in a continuity of care. Private health insurance may allow the mother to access services such as physiotherapy, acupuncture, chiropractic, massage and pilates – all of which can help enhance the mother's health and wellbeing.

When women in low-income families become pregnant, they tend to have less access

DISCUSS

Discuss the how exercising during pregnancy can enhance a mother's health and wellbeing.

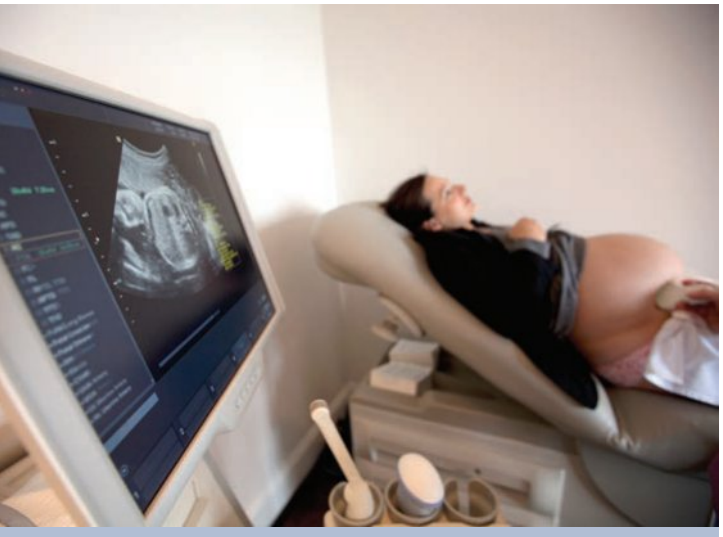


FIGURE 10.18 A woman's access to health facilities during pregnancy can be determined by her socioeconomic status.

FIGURE 10.19 Education can help women to make better lifestyle choices while pregnant.

to adequate nutrition, less access to health services, poorer housing, less safety and more stress. All of these factors can have a detrimental impact on the health and wellbeing of the mother and the health and wellbeing and development of the unborn baby.

Parental education

Evidence suggests that higher education and literacy impact positively on health and development. Higher levels of education are related to higher income and better employment prospects. Education can also have a more direct influence on health by providing knowledge and skills to assist in accessing health services and living a healthy lifestyle.

This suggests that parents who have attained higher levels of education will have the knowledge and skills to make healthier choices for themselves during pregnancy and for their unborn babies. As a result, women with a higher level of education might be more likely to have more antenatal health checks and consume adequate levels of folate and iodine, and less likely to drink alcohol or smoke during their pregnancies.

Parental access to healthcare

Access to healthcare refers to the provision of a healthcare system and the care provided by the people within that system. Having access to healthcare is vital for the health of women during pregnancy, as well as for the health of their unborn child.

Women who experience a lack of access to healthcare during pregnancy are at greater risk of complications with their pregnancy, which increases the risks to their baby. Barriers to adequate access to healthcare may include culture, language, knowledge and cost. All Australians have the right to free or low-cost medical or hospital care but acquiring the knowledge and resources to access these services may be a challenge for some women.

There are several general services that can assist a pregnant woman when she needs care, such as general practitioners and public or private hospitals. There are also services designed specifically to meet the needs of pregnant women, such as obstetricians, midwives, diagnostic testing techniques (e.g. ultrasound) and maternal and child health services.

Antenatal healthcare is healthcare that is accessed prior to the birth of a woman's baby and should ideally start prior to a woman getting pregnant, to ensure that her body is prepared for pregnancy. Evidence shows that there is a strong link between regular antenatal healthcare and positive child outcomes.

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DISCUSS

Discuss how being able to access to antenatal care during pregnancy can ensure positive outcomes for the mother and child.

Over the past 100 years, significant improvements in access to routine antenatal care have helped to reduce maternal mortality rates, perinatal mortality, miscarriages, birth defects and low birthweight. The WHO recommends at least four antenatal visits during pregnancy, and most women in Australia have at least one antenatal visit during pregnancy.

congenital disorder: An inherited or medical condition that occurs at or before birth.

Centres that supply antenatal healthcare may provide advice on nutrition and immunisation prior to pregnancy, and during pregnancy may provide further advice on maternal nutrition and monitor the health of the mother, such as her blood pressure, blood glucose levels and weight gain, as well as providing advice about avoiding exposure to harmful substances. These types of health checks and advice can help to identify and reduce the impact of risks to mothers and their unborn babies.

EXTENSION QUESTION 10.2

Identify and explain the most critical stage of prenatal development. Outline why it is the most critical stage and explain the role of parents in promoting prenatal health during this stage.

ACTIVITY 10.8: CONGENITAL DISORDERS

There are a number of congenital disorders such as Down Syndrome, cleft palate and clubfoot.

Research a **congenital disorder** and discuss the impact this disorder has on the health and wellbeing and development of the infant/child.

10.4 PHYSICAL, SOCIAL, EMOTIONAL AND INTELLECTUAL DEVELOPMENT IN INFANCY AND EARLY CHILDHOOD

During the first 12 years of life, we grow from one tiny cell to a fully functioning person who can talk, walk, eat and function within the community. It really is an amazing journey, especially when you consider that this development occurs without much conscious effort on the part of the individual.

After surviving the most dangerous moment of life – their birth – an infant is thrust into a new stimulating world where they experience a period of rapid growth and development in the first 12 months. As a child develops, so do the skills that a person needs throughout their life.

Australia has low rates of infant and child deaths. Most Australian children experience good health – they generally grow up in a safe environment and have access to an adequate, safe and nutritious food supply, safe water and an excellent standard of education and healthcare.

This lifespan stage is an important one in terms of health and development, as childhood – especially early childhood – lays the foundation for later health and wellbeing.

Adjustments made at birth

Immediately after birth, babies need to make a number of physiological adjustments to allow them to survive in the outside world.

TABLE 10.4 Physiological adjustments made at birth

PHYSIOLOGICAL ADJUSTMENT MADE AT BIRTH	BEFORE BIRTH	AFTER BIRTH
Respiration	During pregnancy, the growing foetus relies on the placenta for oxygen supply and carbon dioxide removal. The lungs are unable to provide oxygen and remain full of amniotic fluid. During the final weeks of pregnancy, the lungs prepare the newborn infant to take their first breath.	During delivery, much of the fluid in the lungs is squeezed out. Once the umbilical cord is cut, the tiny infant must take its first breath and inflate its lungs. At this stage, excess fluid is absorbed by the body.
Circulation	Before birth, the path of blood through the heart of the foetus is different from that of a newborn infant, and the placenta fulfils the role of the not yet fully functioning lungs and liver.	When the umbilical cord is cut, there is a change in blood pressure. Once the baby has taken its first breath, the lungs inflate and there is an increase in blood supply to the lungs. As a result, the opening between the left and right side of the heart is closed, causing a change in the blood flow through the heart. This change needs to occur, as the baby now needs to obtain oxygenated blood from the lungs instead of the placenta.
Digestion and removal of waste	Prior to birth, the baby obtains vital nutrients via the placenta and waste products are removed from the foetus via the placenta, with the kidneys beginning to contribute once they start functioning.	The baby must now adapt to drinking and digesting milk. After birth, when the placenta is no longer available, a number of organs take on their new roles and share the task of removing waste from the body. The lungs excrete carbon dioxide and the kidneys purify the blood, and the baby needs to start to pass urine. As a result of ingesting milk, they also need to begin to use their bowel. The first bowel movement is called meconium, and is very dark in colour and sticky. Gradually, after two to three days, the faeces changes to a much lighter yellow colour.
Temperature control	Prior to birth, the amniotic fluid helps to keep the womb a constant warm temperature.	Once delivered, due to a large surface area, wet skin and low fat stores, the baby's temperature falls, but should return to normal over the next few hours. The newborn baby now needs to begin to regulate their own body temperature with the help of caregivers and appropriate clothing and blankets.

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10.5 UNDERSTANDING CHILDHOOD

A variety of terms can be used to describe young people from birth to 12 years of age: newborns, babies, infants, toddlers, pre-schoolers and children. There are also a number of ways of defining children. Most commonly, children are considered to be 3–12 years of age, and this stage is preceded by the prenatal (conception to birth), infancy (birth to 18 months) and toddlerhood (18 months to three years) stages of the lifespan.

FIGURE 10.20 Children undergo significant growth and development in the first six years.

PRINCIPLES OF DEVELOPMENT

Six key principles characterise the pattern and process of growth and development in childhood.

Development requires change. By definition, development is linked to change, so if an individual is not changing, they are not developing. The changes that we can see occurring to an individual usually relate to physical development, such as changes in body size, proportions and functions. Individuals also experience changes in social, emotional and intellectual development, including everything we learn.

Early development is essential for later development. As a child develops, they add to the skills they have already gained and these new skills become the basis for further mastery of skills. During childhood, one stage of development lays the foundation for the next stage of development. For example, in relation to physical development, a child will need to be able to hold a pencil before they are able to draw or colour and an infant will lift and turn its head before it can roll over.

The pattern of development is orderly and predictable. While it must be acknowledged that each individual will develop differently and at a different rate, the order in which we develop specific milestones follows a predictable pattern. There are two laws of human development that influence the orderly predictable nature of development. These are the cephalocaudal and proximodistal laws of development. There are also two general patterns that make development orderly and predictable. The first is that development occurs from general to specific and the second is that development occurs from simple to complex. Examples relate specifically to physical development, as growth and development occur from large muscle movements to smaller ones. An example is the way an infant learns to grasp an object in their whole hand before they can pick up items using only their thumb and forefinger (called the pincer grip).

Development occurs in the order of simple to complex. Again, there are many examples of how development progresses from simple to complex during childhood. One example of physical development is that a child is able to walk before they can walk on tiptoe or up stairs. The same is also true with

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intellectual development, which involves children learning to reason; for example, when they learn relationships between things or how they are classified. Development involves maturation and learning. The two terms 'maturation' and 'learning' refer to the journey that an individual takes to reach their full genetic potential. Maturation refers to the sequential change in biological growth and development; this pattern is genetically programmed. Learning, on the other hand, is influenced by the experiences to which we are exposed and refers to the acquisition of behaviours and skills through interaction with the environment. A child must mature to a certain point before they can gain new skills. For example, a four-month-old cannot use language to communicate because their brain has not matured enough to allow the child to speak. By 18 months of age, the brain has developed enough that, with the help of others (learning), a child will have the capacity to say and understand words. Maturation in the brain and nervous system helps to improve a child's thinking (intellectual development) and motor (physical development) skills.

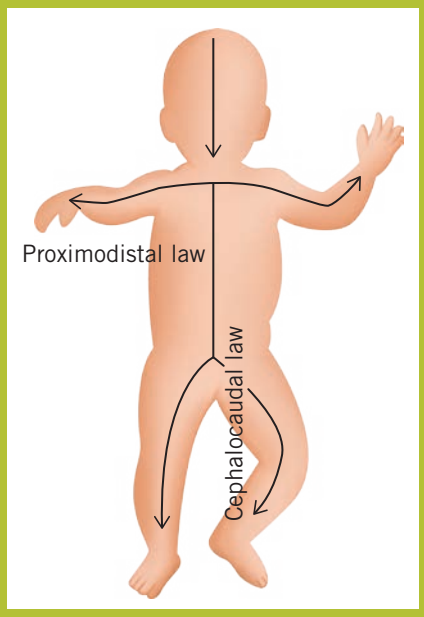

FIGURE 10.21 Cephalocaudal and proximodistal development

Growth and development are continuous. As the first principle identified, development requires change; because individuals continue to change throughout the lifespan, development therefore continues. Development actually continues from the moment an individual is conceived until they die.

Rates of development are unique. Each child is different and the rates at which individual children grow and develop are also different. Although the patterns and sequences for growth and development are orderly and predictable, the rate and time at which individual children develop and achieve milestones will be different.

It is important not to rely too heavily on an understanding of development aligned only to specific milestones being reached at specific ages. There is no such thing as a normal or average child, which is why an age range is usually given within which developmental tasks will take place. For example, there are differences in the rate and timing of when children learn to walk. Some will walk at 10 months while others walk as late as 18 months of age. As far as the timing goes, both of these are considered normal.

Rates of development are also not uniform. Using the same example of learning to walk, some infants take their first steps and never look back (it appears as though they learned to walk overnight). Other infants proceed more slowly, over several weeks; they may start by standing then progress to walking while holding on to furniture before taking steps alone.

Characteristics of social, emotional and intellectual development are more difficult to measure than physical development because they are more about internal 'improvements' (quality) rather than an increase in size and functioning, which are more easily measured (quantity).

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10.6 CHARACTERISTICS OF PHYSICAL, SOCIAL, EMOTIONAL AND INTELLECTUAL DEVELOPMENT FROM BIRTH TO EARLY CHILDHOOD

Physical development

Physical development refers to the changes that relate to people's size and shape, and therefore body structure. From the moment of conception, the process of physical human development begins and will continue until death. After birth, a baby has a number of adjustments to make as they enter their new world.

cephalocaudal law of development: The direction of development that occurs from the top (head) down to the bottom (toes) of the body.

proximodistal law of development: The pattern of development that occurs from the centre (or inside) of the body and extends to the body's extremities.

fontanelles: The areas between the bones in the skull of an infant.

The first year

Infants spend much of their first week becoming accustomed to their new surroundings. After nine months in the womb, the space, light and noise in the outside world are very new to a tiny baby.

Growth

Growth during the first 12 months is rapid. A baby more than doubles in weight and their length increases from approximately 49 cm to nearly 75 cm. The biggest change that begins to take place in relation to growth is in body proportions. At birth, an infant's head is about one quarter of its total body size. In the first year of life, muscle mass needs to increase. The muscles that are undeveloped at birth grow to support the larger size and weight of the infant. As a result of the increase in muscle strength, the infant will achieve new gross and fine motor skills, as outlined later in this chapter.

Like other areas of development, muscle growth follows the **cephalocaudal** and **proximodistal laws of development**. This means that the muscles that support the head and neck grow before those in the legs, and the muscles closer to the torso develop before the limbs.

Much of the bone in a child's body begins as cartilage. During infancy, this soft cartilage becomes much harder and stronger bone via the process of ossification. The bones also grow in length and width, contributing to the overall growth of the infant. From between 10 and 18 months of age, the bones are strong enough to support the infant, which enables them to walk.

The **fontanelles** are the areas between the bones in the skull of an infant. They are flexible and very soft at birth (to assist in the delivery of the baby). During infancy, these fontanelles harden and fuse together, a process that is usually complete by two years of age. The bones of the skull continue to grow and harden after this time as the infant grows.

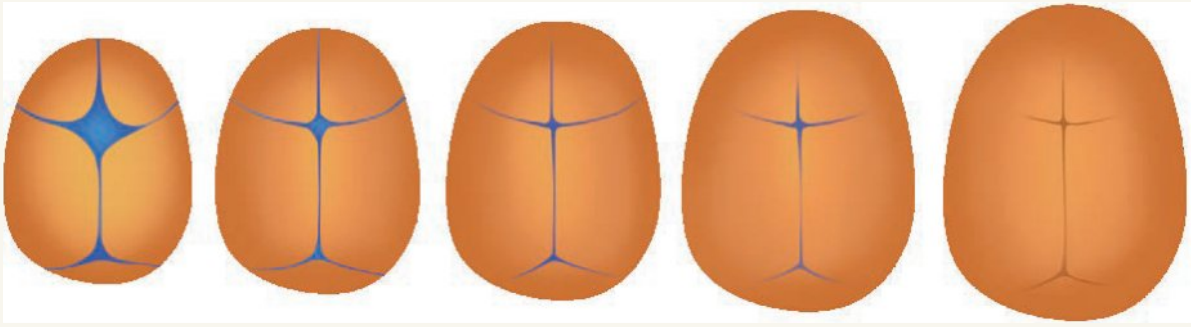


FIGURE 10.22 The fontanelles harden and fuse together during the first two years of life.

FIGURE 10.23 Babies go through many changes as they grow.

Vision

A newborn's vision is blurry. The furthest they can see is the distance from a care-giver's arms to their face (approximately 20–40 cm). At about three weeks, an infant likes colours and shapes. Toy frames and mobiles with bright colours are good toys for babies at this age. By four weeks, they can gaze steadily and focus on the face of someone speaking to them. From five weeks, a baby can focus both eyes on an object and can track movement of objects in close range, and from two months, they can focus on and track objects from further away.

Movement

In relation to movement, a newborn is still adjusting to their new world, which they may find a little bit noisy and bright. A newborn moves its limbs in a jerky, uncoordinated way, but by about four weeks their movements become more fluid as muscle control matures. At about two weeks, the innate reflexes continue to be important for a new baby (see Table 10.5). Sucking, grasping, rooting (when it is searching for a nipple) and blinking are examples of such reflexes.

By the end of the third week of life, a baby may be able to lift its head briefly when lying on its tummy. They may also be able to turn their head from side to side. Leg and arm movements are becoming less jerky as they gain greater control of muscles.

A seven-week-old baby is much stronger and will appear steadier when held upright. When on their tummy, they may now be able to lift their head and chest for short periods.

Between two and four months of age, babies get stronger and begin to recognise their hand as their own. They use their hand to voluntarily reach out and try to grab an object. They are also growing fast at this stage, and may gain almost 1 kg each month. They also have greater control over limbs and may entertain themselves by playing with their hands and fingers, kicking and waving their arms when happy. A baby may also be able to roll from their tummy to their back, and can be pulled to sit with only a slight head lag. This demonstrates increasing strength and control of the neck.

Between five and seven months, a baby may be able to roll from being on their back to their tummy and may enjoy rolling as a means of getting where they want to go. Most babies can hold their head steady when upright and many babies may be strong enough to support themselves while sitting for a short time. They probably can reach out for and grasp objects, and many babies have mastered skills such as raising their chest while on their stomach by using their hands as support, and holding their head steady when upright. Some babies may also be able to bear some weight on their legs and be able to sit alone.

Their fine motor skills are also developing. A baby may now be able to pass objects from one hand to another, bang objects together, clap hands and pick up toys with one hand.

FIGURE 10.24 An infant beginning to bear weight

TABLE 10.5 Innate reflexes exhibited by the neonate

REFLEX	DESCRIPTION
Breathing reflex	The ability to take the first breath after birth and continue breathing; this is a permanent reflex that is vital to supply oxygen to the body
Blinking reflex	The ability to open and close the eyes at regular intervals; this is a permanent reflex that is necessary to protect the eyes
Rooting reflex	In response to touch or brush against the cheek, the infant turns its head in the same direction in search of food; this reflex is present at birth and may last up to five months; it is used to assist/direct the infant to find food (bottle or breast)
Sucking reflex	Items placed in the mouth or on the lips trigger a sucking response; this lasts for up to seven months and is useful to encourage infants to suck for nourishment
Babinski reflex	When an infant's foot is stroked, it causes the toes to fan then curl; this reflex lasts for up to 18 months and is linked to the ability to learn to walk
Grasping reflex	The infant's fingers curl against an object placed in their palm; this reflex usually lasts for up to four months; after this time, a child can voluntarily grasp an object; this innate grasp is linked to normal neurological function
Moro reflex	When an infant is lying on their back, in response to being startled they fling their arms out, may arch their back and then relax their arms back in towards their chest; this innate reflex usually disappears by about four months of age; however, an infant may still continue to react to loud unexpected noises
Swimming reflex	When an infant is placed horizontally under water, they move their arms and legs as if swimming and innately hold their breath; this reflex disappears by six months of age
Stepping reflex	When an infant is held upright with their feet touching a solid flat surface, they move their feet as if they are walking; this reflex lasts until about two months of age

By eight months, many babies are able to move around, even if they are not using the typical crawling technique. Many babies can stand when holding on to something and be able to pick up objects using the pincer grip (using thumb and finger). By nine months, it is common for babies to be able to pull themselves up to stand when holding on to something and some may even walk holding on to someone or something. By 10 months, many babies can stand or walk holding on to something and some may even start to stand or walk alone. By 11 months, infants may enjoy playing more physical games, such as ball games or knocking over blocks.

Teeth

Tooth buds have formed in the gums during the prenatal stage of development. Once they have calcified (hardened) enough, they begin to rupture through the gums. The timing of the eruption of the first tooth varies greatly among infants – most get their first tooth around six months of age. The rest of the baby teeth appear shortly afterwards, usually beginning with those at the bottom. The last of the primary teeth, the molars, usually appear around two-and-a-half years of age.

FIGURE 10.25 Teething can be a difficult time for babies.

Eating

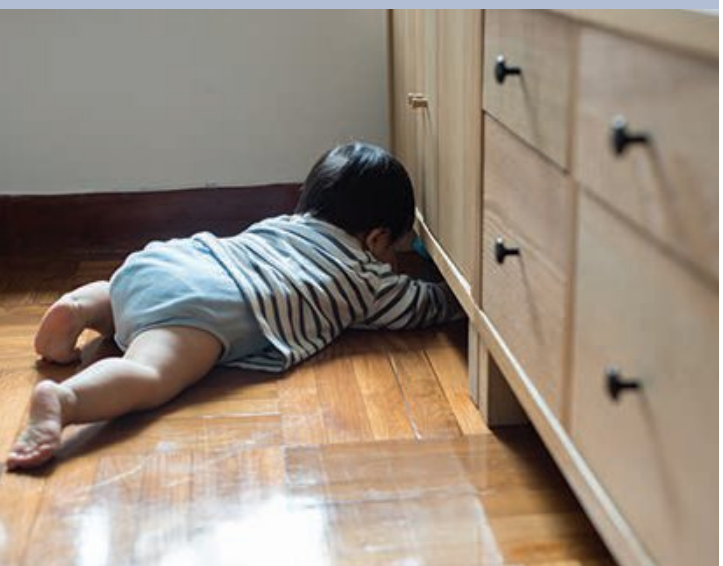
For the first four to six months of life, most infants consume milk (breast or infant formula) only. At around six months, infants may be introduced to solid foods. This is usually in the form of infant cereal and pureed fruits and vegetables. They may also be offered a cup with water from about six months. By eight or nine months, infants may be eating a more varied diet with more texture to their food. From about 11 months, infants may start to feed themselves with a spoon.

Between one and two years

From the time they turn one, a baby who is not yet walking will progress from crawling to walking while holding on and standing alone. Most children are walking by 15 months and can run by 20 months. Other gross motor skills may include squatting, being able to bend down from a standing position, kneeling and being able to move up and down steps.

During this second year of life, balance also improves, enabling a child to sit for long periods while playing. The child can also stay in a kneeling position while moving their head. At this age, children may also learn to grasp and release a ball and may even be able to kick a ball forward. The child will enjoy finding new ways to move their body, such as dancing, running and climbing. In terms of fine motor skills, children of this age will be refining their pincer grip and most have achieved this skill by 15 months.

FIGURE 10.26 Babies begin to explore as they grow and become more mobile.



Some children will be quite persistent in trying to pick up a tiny object using their pincer grip. Looking at books is a quiet pastime that many toddlers enjoy sharing with their parents, and at this stage they may be able to start to turn the pages, although it may not be one at a time. Children may enjoy drawing (scribbling) – something that is usually made easier with larger crayons or pencils. They may frequently swap the pencil from hand to hand. Building towers with blocks is another game that many toddlers enjoy, as is knocking them down. At this age, a toddler may be able to build a tower of six blocks. Most children can use a cup well and are able to feed themselves a range of foods with their fingers. Many are now able to use a fork and spoon effectively. They may assist with dressing themselves. However, they are more likely to be better at taking their clothes off than at putting them on.

Between two and four years

After their second birthday, a child's motor skills will continue to improve and many two-year-olds enjoy being very active. They explore many different ways to move around, including rolling, crawling, walking, running, jumping, tiptoeing and climbing. They can crawl through tunnels, go over and under obstacles, climb steps and balance on one foot with assistance. They now find it easy to bend over without falling, and use this skill often to pick up objects such as toys from the floor. Children master being able to walk up and down stairs with one foot on each step, while holding on to a handrail.

The improvement in motor skills also increases independence in regard to daily activities; for example, many two-year-olds can get on and off a chair independently and can more effectively assist in dressing and undressing themselves. They may also be able to catch a ball that is rolled to them, attempt to catch a ball thrown to them and throw a ball overhand.

As they move from infancy through toddlerhood and into childhood, the growth pattern slows to a steady rate. Three-year-olds are less

top-heavy and move with greater coordination when running, climbing and jumping. Many demonstrate an increasing ability to coordinate movements in throwing, catching, kicking and bouncing balls. They can catch a large ball with two hands and their body, kick a stationary ball forwards and run to kick a stationary ball. They can jump off low steps, and climb stairs with alternating feet, using a handrail for balance, which are examples of the use of gross motor skills.

They can also walk without watching their feet and walk backwards. Many can also ride a tricycle. Fine motor skills are improving. From the age of two, many toddlers are better skilled with cutlery and can now turn pages one by one. They love using their hands and learn to pound, squeeze, roll and cut shapes out of play dough. They may also now be able to make lines and circular strokes when drawing, and can turn doorknobs and unscrew lids.

From the age of three, improved finger dexterity allows children to put together simple puzzles, use tools, hold crayons with fingers instead of fists, make balls and snakes out of clay and undress without assistance (although most still need help dressing). Improved hand-eye coordination aids them in developing fine motor skills: building towers with blocks, threading beads on a string, drawing shapes such as circles and pouring liquids with some spills. They also begin to show a preference for being right- or left-handed.

FIGURE 10.27 Motor skills continue to develop during the early childhood stage.

Between four and six years

Most children at four years of age have achieved a skilful level of ability, control and balance in walking, climbing, jumping, hopping, skipping, marching and galloping. They are able to walk down steps with alternating feet and may be able to hop three or four times without touching both feet to the floor. Many children demonstrate better coordination when throwing, catching, kicking and bouncing balls. As their balance improves, they are able to master low balance beams of about 10 cm width but have difficulty on a narrower beam without watching their feet. They may still, on occasion, lose balance when jumping. They may begin to coordinate movements to climb on a jungle gym and are able to balance while doing a forward roll without falling over. They may still lack the wrist strength to propel themselves effectively on monkey bars.

From the age of five, many children demonstrate a mature form when walking and running, and can walk backwards with speed. They are also able to maintain balance while moving quickly and can hold a balanced position for 8–10 seconds and walk easily on a 5 cm-wide beam. Many children at this age can skip and run with agility and speed, although many girls skip better than boys at this age. Most five- to six-year-old children have improved agility and are able to climb and hop well; they can also coordinate movements for swimming or bike riding. They are now able to move in a variety of pathways to the beat of different types of music and move with an awareness of others and the general space available. By this age, children begin to perform most ball-related skills, such as throwing, kicking, bouncing, catching, and hitting correctly and more frequently. They also have much greater accuracy with overhand throws.

Many children at this age think their abilities are greater than they are. In terms of fine motor skills, four-year-olds have improved hand-eye coordination in building block towers, doing puzzles, drawing shapes and patterns, threading small beads on a string and pouring liquid into containers. If sufficient practice has been

FIGURE 10.28 By the age of five or six, a child's agility has greatly improved.

provided, they can cut on a line continuously with scissors and have an improved ability to use writing, drawing and art tools. Most children of this age can draw simple shapes, people with at least four body parts and objects that are recognisable to grown-ups.

Many can manage to dress and undress without assistance but might still have trouble with some fastenings. From the age of five or six, fine motor skills improve and many children can hit nails with a hammer, use drawing and painting tools with efficiency, gain skill at colouring within the lines, use scissors unaided and build three-dimensional block towers.

Most children aged five or six years can copy shapes, draw people, print some letters and print their first name. They may enjoy disassembling and reassembling objects, and dressing and undressing dolls. They can now perform many tasks associated with dressing, grooming and eating. They also show a clear preference for being right- or left-handed.

Percentile charts

It is important to assess the growth and development of a baby at regular intervals over the first two months of life. Regular assessment by a maternal and child health nurse or doctor can indicate any potential concerns with development in the early stages. Percentile charts are commonly used to assess the growth of infants and children.

There are two sets of percentile charts for infants aged from birth to three years, one for boys and one for girls. Within each set, there is a chart for length, one for head circumference and one for weight. Length is measured while children are lying down as opposed to height, which is measured while children stand.

There are also two sets of percentile charts for children and youth aged two to 20 years. Each set includes a chart for height, one for weight and a third for their body mass index. The charts are used to measure and record the growth of the infant or child and the results of the individual are compared with a set of 'norms', which are considered to be the normal range of height, weight and head circumference at the particular age. The percentile charts are developed using the actual measurements of children in a particular population group over a period of time.

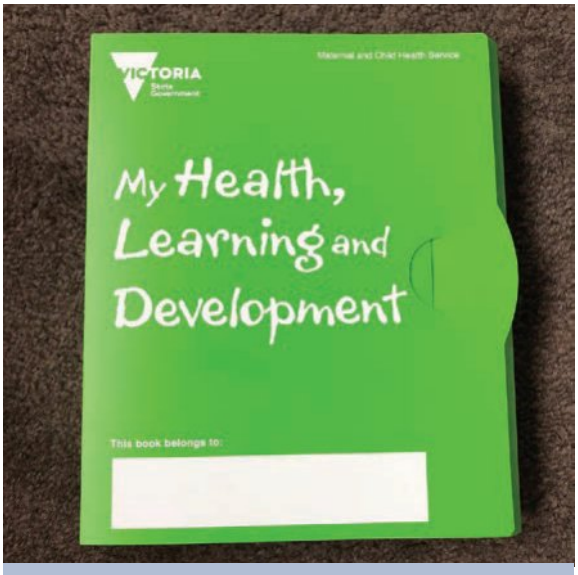


FIGURE 10.29 A child's development is tracked to ensure they are reaching their milestones.

Using percentile charts

Percentiles, as the word suggests, are based on percentages. The particular height, weight and head circumference measurements are divided into percentiles, which are drawn to take in variations between children. When a child's measurements are recorded on the chart, it compares their individual result with the normal range. The score or percentile they are given indicates where they would sit in an average sample of 100 children of the same age and sex as them.

Looking at Figure 10.30, you can identify a series of lines, which represent percentiles on each chart. The fiftieth percentile represents the median or average in the weight range for children of that particular age. If a nine-month-old boy measured 75 cm in length, he would be on the ninetieth percentile, which suggests that he is at the taller end of, but still within, the normal range. Being on the ninetieth percentile suggests that only 10 per cent of boys the same age would be taller and 90 per cent of boys the same age would be shorter. Likewise, if a little boy at three months measured 57.5 cm in length, he would be on the tenth percentile. This means that only 10 per cent of boys at the same age would be expected to be shorter and 90 per cent of boys the same age would be taller.

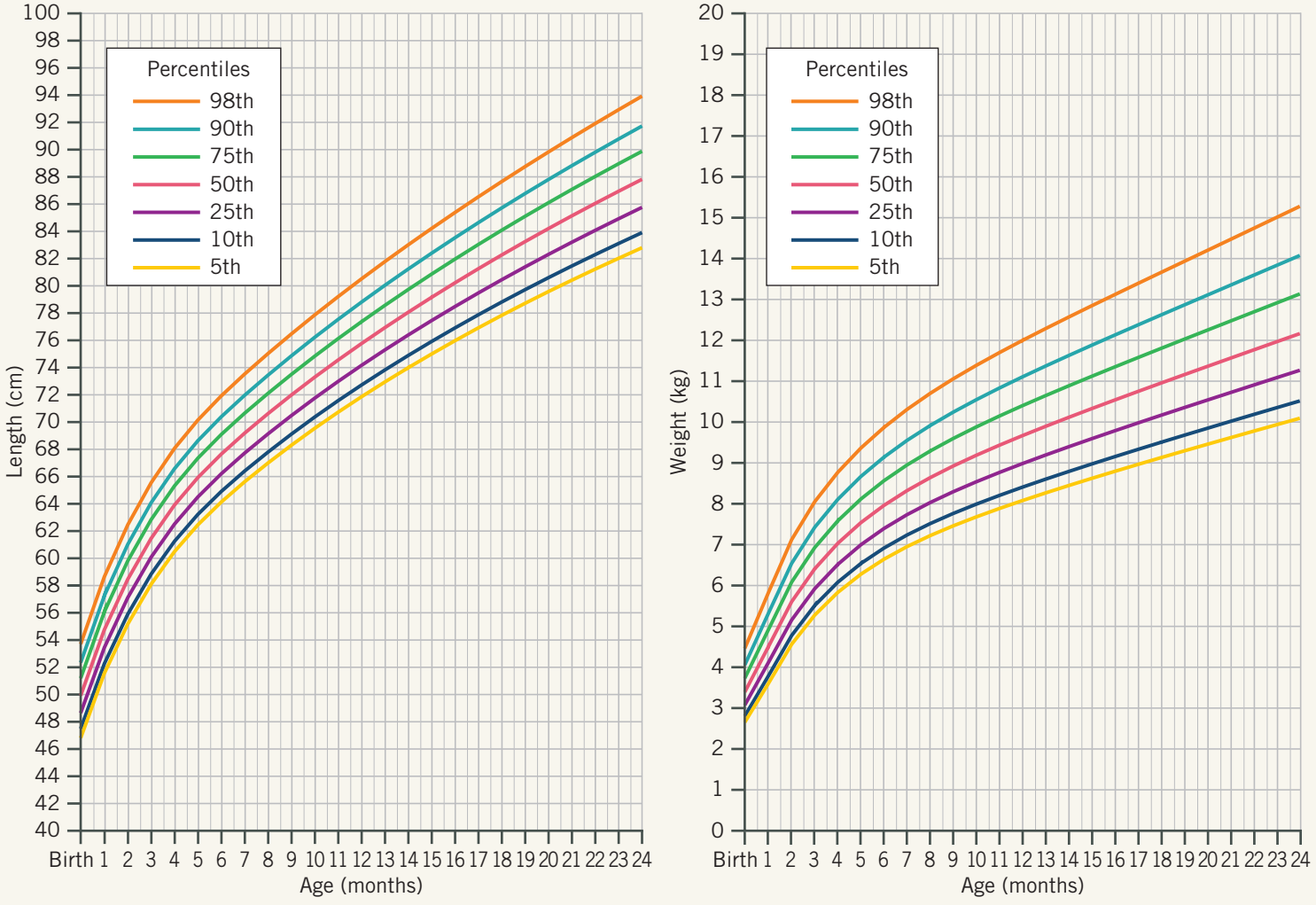


FIGURE 10.30 Boys' length-for-age and weight-for-age percentile charts (birth to 24 months)

ACTIVITY 10.9: PERCENTILE CHARTS

1 What are percentile charts?

2 Outline why percentile charts are used.

3 Identify the percentile on which the following infants would be located:

- **a** a two-year-old boy who weighs 14 kg
- **b** a three-month-old boy who is 58 cm in length
- **c** an 11-month-old boy who is 76 cm in length.

4 Explain how you would expect the length or weight of these three boys to compare with boys of the same age.

FIGURE 10.31 Social behaviours continue to develop as children grow and learn.

Social development

Social development refers to a person's ability to interact with those around them.

The first year

During the first week after birth, a baby spends much of its time observing the facial features and voices of parents and family members, and does not need to be entertained. Most infants depend totally on parents to have their needs met, and they need to learn quickly how to communicate their needs; for example, crying when they are tired, hungry or uncomfortable.

By four weeks of age, babies are starting to vocalise by making sounds, and they also enjoy hearing others talk or sing. Some time after about five weeks, an infant may smile for the first time and begin to show a preference towards the primary carer.

From seven weeks, an infant responds to the voice of its primary carer and finds their voice comforting. When a parent speaks to a baby and a baby responds, it stimulates language development – even at this very early stage. This also demonstrates the beginnings of an infant's first relationship.

From about three months, an infant smiles more frequently, and by four months their communication skills are developing. They may begin to laugh out loud, squeal when excited and develop the ability to make basic sounds without understanding their meaning.

Infants are more sociable at five months. They begin to enjoy attention from others. By six months, infants are very social and love to have fun. Six-month-olds may enjoy playing peek-a-boo and being sung nursery rhymes with actions. By seven months, social development is continuing apace, and infants may blow a kiss or wave goodbye to familiar people. They may also begin to feed themselves with their hands and most can now drink from a cup with handles.

Infants at this age begin to learn appropriate social behaviours via observing other people or through experience. They tend to repeat actions that previously have received a positive reaction. From about eight months, an infant may be able to participate in basic games with which they are familiar, such as peek-a-boo, and from 10 months they may also enjoy playing in the company of other children. Even though they do not play with others (this is a skill that will develop in the years ahead), they may enjoy having them around.

Between one and two years

At this age, a toddler demonstrates awareness of others and enjoys interacting with adults. They may also approach familiar children and

offer them a hug. Toddlers often respond to conflict physically (by hitting or pushing) or emotionally (by crying or screaming). They may begin to play alongside other children, but are not able to understand how to share. They enjoy imitating the actions of people around them. Some toddlers start to understand how to get attention from others by 'showing off'.

Between two and four years

Most two-year-old children enjoy playing alongside other children, but usually keep to themselves. Depending on their exposure to other children, they may start to have favourite playmates. They look for and rely on adults when conflict with other children occurs but start to learn strategies from adults about how to resolve conflict.

Between the ages of three and four years, children generally show an interest in other children and copy what they do. They may now be capable of playing cooperatively with another child for a time, such as pretending to talk on the phone with the child. Children at this age begin to learn social skills such as sharing and may also begin to learn social rules. They also begin to have friendships, even though the child may not understand the concept of friendship or that these relationships may not last. Many offer simple assistance to peers in need if they are upset, hurt or angry; for example, a push on a swing, a cuddle, or an encouraging word.

FIGURE 10.32 Children begin to develop friendships between the ages of two and four years.

At this age, many children may also be capable of accepting a compromise when resolving conflict if it is suggested by an adult. They may also seek adult help in resolving a conflict while they continue to learn simple alternatives to aggressive ways of dealing with conflicts.

Between four and six years

Between the ages of four and five, children show further progress in developing friendships with peers, and begin to try to please other children. New social environments such as kindergarten and school influence their social development. They learn to interact with new people such as teachers and peers, and start to form new relationships. A child learns the rules and appropriate behaviours associated with the new environment, even if these rules are different from the rules at home.

Children at this age (depending on their emotional development) gain the confidence to experience new situations. A child may now be able to successfully enter a group of children and ask to participate in a game. They can also begin and sustain pretend play in a group, such as 'Let's play shops. I'll be the shopkeeper and you can both be customers.' They are also able to respond more appropriately and sympathetically to peers who are in need, upset, hurt or angry, potentially offering appropriate solutions.

They may suggest solutions to problems or conflict with other children (while continuing to seek adult help). They are able to use more appropriate volume control and may start to speak in a volume and tone appropriate to the situation. They also start to speak more politely, using terms such as 'Could I have ...?' rather than 'I want ...'

Five- and six-year-old children enjoy interacting with other children and adults. They have developed a broader range of social skills, such as being able to suggest something to do together or to ask to join in an existing activity. They continue to establish and maintain friendships with other children, and seek acceptance and friendship from others.

DISCUSS

Discuss ways in which play promotes the different aspects of a child's development.

Children of this age are capable of using a wide array of words or actions to demonstrate awareness, understanding and concern for what others are feeling. They are also now able to use a broader range of strategies to resolve conflicts, including negotiation and compromise, before seeking adult help; however, they may still have difficulty at times.

Emotional development

Emotional development deals with feelings and moods, and the ways in which people express, understand and exercise control over them.

FIGURE 10.33 Children learn to recognise and manage their emotions as they get older.

The first year

From about four weeks, babies vocalise (coo, gurgle, hum or grunt) to express their feelings, and by five weeks a baby may smile for the first time, which is another way in which they can express their feelings. From about the age of six weeks, a baby can probably recognise their parents and prefer them to strangers. By this stage, a baby may smile at the sight of their parents and respond vocally with pleasure. By about three months, the infant may smile, kick and wave their arms to express when they are happy.

From around seven months, an infant may be able to make their feelings more obvious and they begin to assess and imitate the moods of others. They enjoy positive reactions to their behaviours and often repeat an action for praise. From eight months, they really begin to have an opinion on things and express their likes and dislikes, often quite vocally. When a toy is taken away from them, for example, many babies protest loudly. They may also protest when bored.

By eight months, a significant attachment to the primary carer has formed. This attachment is important for the child's future emotional development, helping them to feel secure when entering new environments. It can also be the case of separation anxiety in some infants. From 10 months, an infant becomes more assertive. When around other children, an infant may object if another child tries to play with their toys.

Between one and two years

Many toddlers from the age of 12 months are still just learning to recognise basic emotions. As a result, they find it difficult to know how to respond when they become angry or frustrated. Often, they may decide to hit or yell, as they do not have the emotional development or the language skills to understand how to cope with their feelings.

Parents and family have a strong influence on emotional development from the support and encouragement they offer and also via role modelling. This is also a time when toddlers are seeking some independence.

During the first year, a child develops a close bond with their parents and carers. At this developmental stage, they fall back on these relationships for support when they hurt themselves or need assistance. They watch for the facial expressions of others to determine emotions; for example, when they are seeking praise from a parent. In addition, they may begin to demonstrate signs of self-consciousness.

They may also show empathy to others when they are upset – for example, they may show concern or even sadness when another child is crying. Most toddlers during this year demonstrate a range of emotions such as affection (especially to parents or carers), independence, fear, anger, frustration, sadness and anxiety.

Between two and four years

Children of this age are beginning to label feelings that they recognise in themselves and others. They still find controlling emotions difficult, so frustration and anger may trigger physical and/or emotional responses. Tantrums are common at this stage. They may begin to trust other adults and children with whom they are familiar. They establish a strong sense of self and assert themselves more; for example, they may say 'No!' to an adult's request to pick up a toy.

Three- and four-year-old children continue to develop preferences for specific adults, using them as a secure base for exploration and play. For example, they may want Mum to come to the park or kindergarten with them, but barely notice she is there if they are playing happily. At this age, a child begins to express a sense of individuality and personal preferences.

They begin to label their own feelings and those of others based on their facial expression or tone of voice. For example, a child of this age looks at a picture in a book and says, 'She's angry'. At the most basic level, the child understands that actions have consequences and that people feel things as a result, such as, 'Megan is sad because she didn't get a turn'.

Between four and six years

From the age of four years, a child is better able to tolerate the absence of familiar adults and may cope with distress through the use of language or drawing. For example, they may draw a picture of Mum and Dad for when they get home. They increasingly express a sense of self in terms of abilities, characteristics, preferences and actions. For example, they compare themselves with others, making statements such as, 'I am taller than Cooper'. They continue to gain an understanding of the causes of feelings, and that others may feel differently about the same situation. They begin to learn coping strategies such as language and imaginary play to establish greater control and competence in managing emotions.

FIGURE 10.34 At the ages of five and six, children begin to form a closeness with a few key adults.

Children between the ages of five and six years maintain closeness to a few special adults such as parents, grandparents and teachers. For example, they might say, 'I love my teacher!' They build self-esteem when they feel capable and are able to demonstrate new skills. They can use their improved language skills to express their feelings and their causes. They can now use a range of resources to comfort themselves and to control the expression of emotion, such as going to their room or colouring in when upset.

Intellectual development

Intellectual development refers to the way in which a person thinks and reasons. It includes memory, perception, language development, creativity and intelligence.

The first year

When an infant is born, their brain is not fully formed. Not all the neurons are present and links between them are not yet fully functional. As the development of these links increases, so will the intellectual development of the infant. At the time of birth, however, all five senses are present in an infant, and they use them to assist their understanding of the world around them.

During the first month of life, a baby is exposed to a lot of stimuli and the human face is the first thing that they recognise; from about six weeks, they are able to recognise their parents. They also begin to repeat pleasurable actions, such as thumb sucking. Even though the baby moves their limbs a lot in the first two months of life, it is not until about eight weeks of age that they begin to recognise that their hand is their own.

By four months, a baby's language is developing and they may laugh out loud, squeal when excited and develop the ability to make basic sounds without understanding their meaning, such as 'Mama' and 'Papa'. By nine months, many babies begin to understand the meaning of words such as 'no' and 'goodbye'. They can recognise a partly hidden object and are more aware of their own behaviours.

At this age, infants are also starting to develop an awareness of the means–end relationship. For example, an infant learns that they need to push a button on a toy to make the noise happen. From about 10 months, many babies put new sounds together and enjoy babbling. They can communicate by pointing and grunting. At this age, many babies enjoy exploring their environment and may investigate items, from toys to the television remote control.

From 11 months, many babies are able to understand and follow simple instructions, such as if they are told 'no' or asked for a cuddle or kiss. Other than being able to say 'Mama' and 'Papa', babies may now learn other words. They can indicate what they want in ways other than crying and continue to babble.

Between one and two years old

When they are between one and two years of age, a toddler expands their vocabulary. The number of **words they can understand** increases from about 50 words at 12 months (e.g. names of common things like body parts, household objects and items of clothing) to 300 words by their second birthday. The number of **words they can say** increases from one or two at 12 months to between 50–100 words by their second birthday – although many words may not be pronounced correctly.

One and two-year old infants may also begin using two-word sentences (e.g. 'my shoe') and may use a combination of gestures and words to assist other people to understand them. They learn to follow instructions and may request information by pointing and asking, 'What's that?' Between one and two years of age, infants also look for a hidden object, as they are beginning to understand that an object continues to exist even when it is out of sight. By the age of two, infants can point to body parts when named and can point to a familiar object when named.

FIGURE 10.35 Reading to a child can help them expand their vocabulary.

Between two and four years old

Between the ages of two and three, a child's vocabulary continues to increase. At about two-and-a-half years, a child can say about 500 words and by the time they are three, they can use nearly 1000 words. By the age of three, many children can also use sentences with three or four words. Their sentence structure also improves and they start to use correct word endings, word tense and plurals when appropriate.

Children at this age also start to understand the rules of conversation: listening to others and then responding. By the age of three, children may also be able to discuss events of the day in conversation. Many can answer questions about who they saw and what they did, even if they cannot answer questions about how and why. They can provide their full name and sex.

Three-year-old children also start to be able to understand and follow two-step instructions, such as, 'Pick up your toys and take them to the bedroom' and how to ask for help if they can't do something. By the age of three, children can use language in play when sharing toys, playing games and giving voices to toys.

Between the ages of three and four years, a child learns thousands of new words. They learn by listening to adults, from new experiences and from listening to stories read out loud. They still understand many more words than they say. However, they start to use more connecting words such as 'because', 'and', 'if'. They also learn numbers, words about emotions, names for groups of things and family terms (e.g. aunty, brother).

By the age of four, a child may know the primary colours and some contrasting concepts, such as longer and bigger. They start to use their initiative and apply language rules, not realising how often the English language breaks its own rules. For example, 'There were lots of mouses'; a sentence such as this shows that they have used their initiative as it is not a sentence they will have heard from an adult. They start to tell stories that follow a theme and often have a beginning and an end, but need a lot of prompting and reminding from adults to keep the story moving.

DISCUSS

By the age of four or five, children can engage in imaginary play and play more detailed characters. Discuss the important role of imaginary play in a child's development. Consider all aspects of development.

Four and five-year-old children ask lots of 'why' and 'how' questions to find out more about the world and often start conversations using questions such as, 'Guess what?' By the age of four, a child begins to seek clarification when they do not understand what is said to them. They can understand instructions with two steps and may be able to do some simple problem-solving with other children; for example, deciding what game to play, or who plays with something first. They may also create imaginary characters in play.

Between four and six years old

At the age of four, a child uses around 1500 different words but understands even more. By the age of five, they have a vast vocabulary of words that they are able to understand and use. They can understand and use words that explain when things occur, such as 'before', 'after' and 'next week'. They also begin to speak in more complex sentences by joining small sentences together to form longer ones. By five years, a child can form long sentences of up to nine words. They now have the ability

to discuss things that happened in the past (using past tense and plurals), rather than just things currently happening. They improve their ability to repeat stories of recent events, although they might still give too much or not enough information and get the order of events wrong.

At this age, children can also follow directions with more than two steps, even in a new situation. For example, at preschool they may be told to 'take your lunch box out of your bag and put it on the bench before you place your bag on your hook'. However, they might ignore words that tell them the order in which they should carry out the steps; for example, ignoring the word 'before' in the sentence.

At five years, a child may know between 4000–5000 words, and will acquire 3000 additional words during this year. The average child has the capacity to acquire between six and nine words per day, given access to new words in their daily experiences. Adults and school are increasing their exposure to new words, as are new experiences and having books read aloud to them. Five-year-old children learn specialised words for particular areas of interest, such as the names of different dinosaurs, sea creatures, cooking utensils, tools, or words to do with the weather.

By this age, a child has learned to follow multi-step directions and can understand verbal explanations of things that they have not directly experienced. Children at this age can also learn to add and subtract.

ACTIVITY 10.10: DEVELOPMENT IN CHILDHOOD

Work in pairs to complete the following tasks.

1. Create a timeline or mindmap that represents the physical, social, emotional and intellectual development that occurs in the first three years of life (infancy). You could list characteristics of physical and intellectual development on one side of the timeline and social and emotional development on the other. Don't forget that most milestones do not occur at one specific age.
2. Create a second timeline that represents the physical, social, emotional and intellectual development that occurs between four and six years of age.
3. Explain how parents' and carers' understanding of the developmental milestones identified in Questions 1 and 2 can influence the development of the children in their care.

TABLE 10.6 Summary of developmental changes

	INFANCY	EARLY CHILDHOOD
Physical development	Rapid growth period Teeth begin to erupt Rolling over Sitting Crawling Walking Places objects in mouth Pincer grip develops Fontanelles harden and fuse over	Slower growth Jumping Running Skipping Walking backwards Catching a ball Climbing objects Improved finger dexterity – holding crayons and drawing pictures Walk up and down stairs Pedal a tricycle

TABLE 10.6 Summary of developmental changes *(continued)*

	INFANCY	EARLY CHILDHOOD
Social development	Infant smiles for first time around six weeks Seven to eight weeks will respond to the voice of primary carer Begins to laugh and squeal when excited Seven months – blow a kiss, wave goodbye Eight months starts to play games such as peek-a-boo Play alongside other children but not able to understand how to share Respond to conflict through hitting or pushing	Show interest in other children and often copy other children Engage in pretend play Start to understand the concept of sharing Maybe able to compromise in some situations when guided by an adult Five to six years – start to maintain friendships
Emotional development	By six weeks, baby can recognise parents and prefers them to strangers Smile at parents, kick and wave arms when happy or excited From eight months express like and dislikes Significant attachment to primary carer is formed by about eight months Looks for facial expressions in carers to seek praise Starts to demonstrate a range of emotions such as fear, anger, frustration, sadness, anxiety	Still finds controlling emotions difficult Tantrums are common at this stage in response to frustration Begin to assert themselves more – may say 'no!' to an adults request to pick up a toy Will begin to label emotions – for example, can look at a picture of a person and describe the emotion the are expressing Better able to use language to express emotions Still has a few close adults with whom they like to be with
Intellectual development	Six weeks – able to recognise parents Eight weeks – begin to recognise hand as their own Language development begins with laughing, squealing Can start to make basic sounds such a 'Mama' and 'Papa' Starting to point at objects they want By 11 months they can understand and follow simple instructions such as being told 'no' or 'give me a kiss' At 12 months they can understand about 50 words	By three years of age they use nearly 1000 words and by four years about 1500 words Start to ask lots of 'how' and 'why' questions By four they can understand colours and basic shapes Can count and understand numbers Start to tell more complex stories and use imagination to create complex characters

10.7 IMPACT OF EARLY LIFE EXPERIENCES ON FUTURE HEALTH AND DEVELOPMENT

Human beings continue to learn throughout life. From the moment of birth, the environment, the people with whom an individual interrelates and their experiences all have the potential to contribute to future health and development. The brain is the only organ that is not fully formed at birth, and during the first five years of life a child's brain develops faster than at any other time in their life. It is widely recognised and accepted that the environment, people and experiences encountered in the early years of life are very important for laying the foundations for the future.

> Early disadvantage can also have lasting effects. Healthy development requires that children grow and learn in supportive and nurturing environments. Children who are vulnerable are more likely to develop problems with health, development, learning and behaviours. These problems may have a cumulative effect over their lives, which can have an impact on their ability to fully participate in society.
>
> **SOURCE:** AIHW, 2015

When children experience nurturing and supportive environments that promote optimal health and development, it significantly improves the child's chance of a successful transition to youth and adulthood. Conversely, research indicates that there are connections between adverse childhood family experiences and lower levels of wellbeing in early adulthood. Obviously, parents and carers have a significant influence on child health and development, and therefore their future health and development.

The importance of the early years is now well known throughout Australia and the rest of the world. These years are a time when the brain develops and much of its 'wiring' is laid down. The experiences and relationships a child has, plus nutrition and health, can actually affect this enormously. Positive experiences help the brain to develop in healthy ways. Seriously negative experiences such as neglect and abuse, on the other hand, affect brain development in more harmful ways, and contribute to emotional and behavioural problems later in life. The experiences a child has in the early years can either support learning or interfere with it.

As a child develops, they add to the skills that they have already gained, and the new skills become the basis of further mastery of skills. For example, in relation to physical development, a child will learn to stand, then walk holding on, progress to walking alone and then be able to walk up and down stairs with alternating feet. Similarly, development that occurs in childhood can impact social, intellectual and emotional development in adulthood. The information and habits learned in childhood can also impact the choices individuals make in later life. For example, it is widely accepted that the eating patterns established in the early years can set up healthy eating habits for life. This can impact health and development in later life if children develop poor eating habits that include snacking on energy-dense foods, skipping meals and not eating enough vegetables, as it can affect the nutrients they provide for their body.

DISCUSS

What we experience as a developing child can impact our lives as adults. Discuss.

The development individuals experience early in life is very important and forms the building blocks for further development as the individual progresses through the lifespan. There has long been debate about the influence of nature versus nurture on childhood development. This refers to the different impact of genetic or biological factors (nature) versus the physical and social environment (nurture) on children's development. The reality is that the future health and development of a child is influenced by a combination of nature and nurture. It is the quality and safety of a child's environments and a range of appropriate experiences in conjunction with biological factors such as their gender, age and genetic predisposition that is likely to determine the future health and development of a child.

Impact of socialisation

Socialisation is a lifelong process of learning to interact with others in the society in which an individual lives. It involves learning appropriate behaviours, values and skills through interacting with others to enable each individual to take their place within a social group.

Childhood is considered to be the most intense period of socialisation, and therefore parents play a vital role in the socialisation of children. One of the ways in which young children learn is through observation, and it is important that parents lead by example and model appropriate behaviour.

Children also learn the information they need for socialisation through what they are taught directly, the way they are treated and the response (reward versus punishment) they get

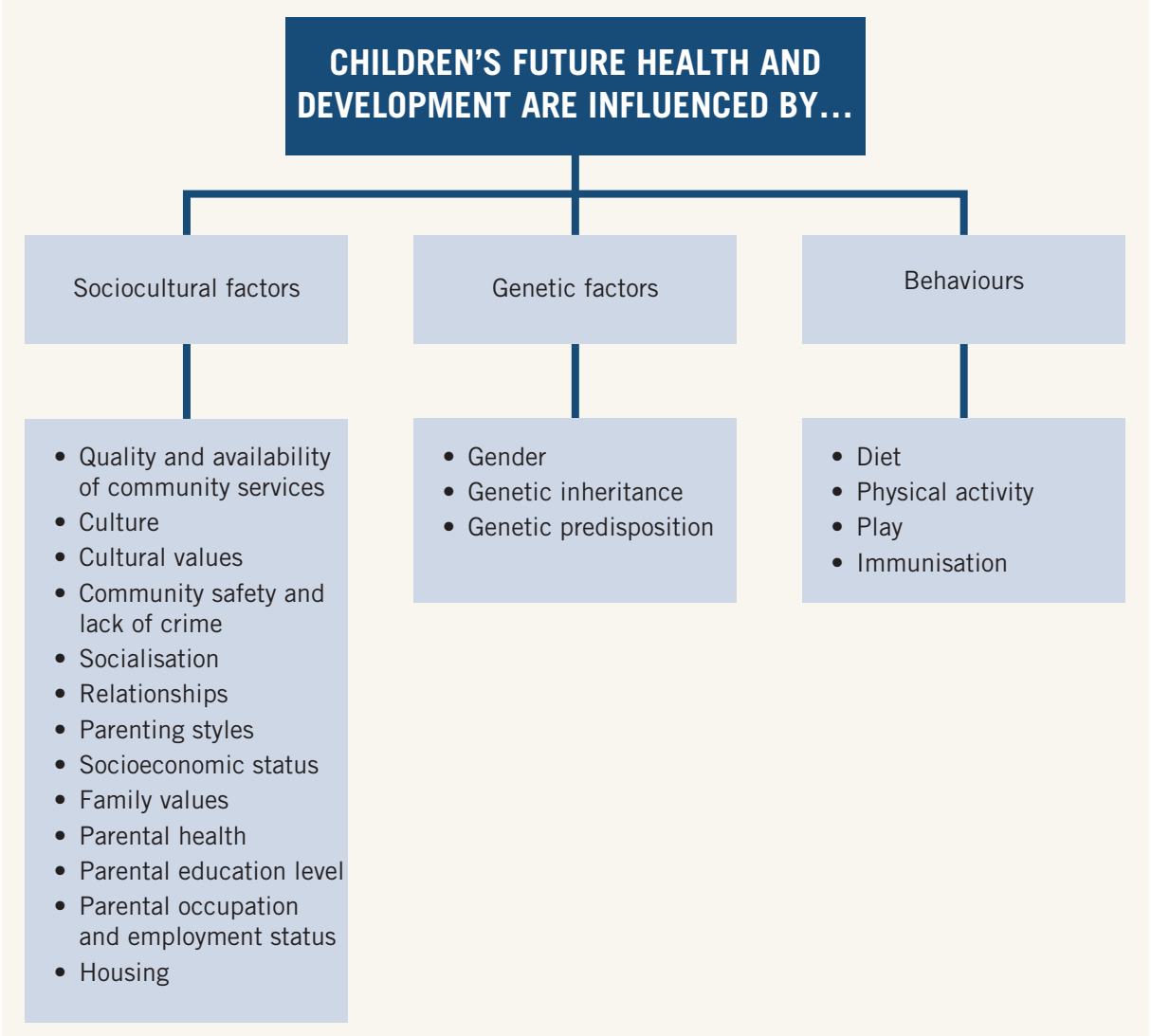


FIGURE 10.36 Children's future health and development are influenced by many factors.

to certain actions. The process of socialisation requires families to interact with their physical and social environment so that their children can learn the skills that will be required for them to take their place in society, not only in childhood but also once they reach adulthood.

As children get older, other influences will impact on the process of socialisation as a result of them participating in other social groups. These influences include childcare, kindergarten, school, the media and peers.

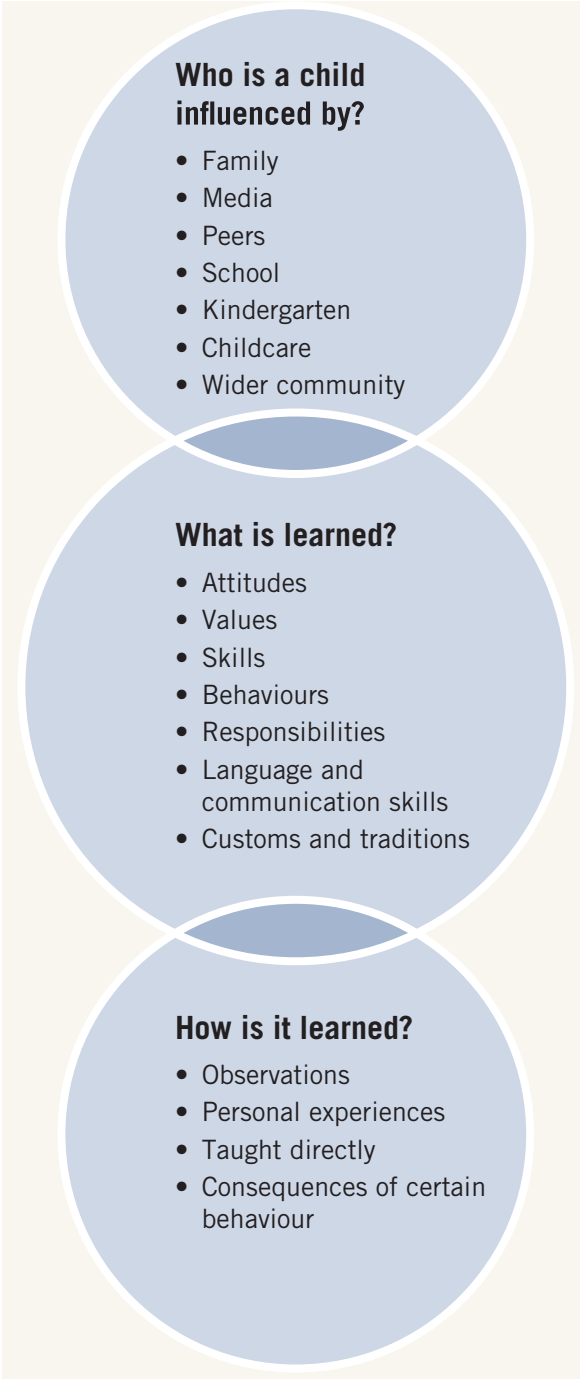


FIGURE 10.37 Socialisation in childhood

Impact of relationships

Relationships impact on future development, as they provide experiences that enable children to learn about their world. Relationships with other people provide an opportunity for children to play, talk, listen and interact with others. This teaches children how to behave appropriately with others, problem-solve and communicate appropriately, as well as a range of social skills such as using manners and sharing.

Relationships also teach children how to appropriately express emotions with others and provide them with a sense of belonging. This is really important to help children develop a sense of self, and helps promote future mental, spiritual, social and emotional health and wellbeing, and also social and emotional development.

Family members, and in particular parents, play an important role in providing positive relationships for children and also as role models to demonstrate appropriate behaviours required for healthy relationships.

Impact of early education

Early education can include the informal education learned in the family home; however, it can also include the education that occurs in childcare, kindergarten and school.

School provides the opportunities for children to learn and grow academically and socially, and lays critical foundations for a productive and healthy adult life. As such, maintaining regular school attendance and participation is essential. School attendance also contributes to the development of social skills and healthy self-esteem.

SOURCE: AIHW, 2015

DISCUSS

Discuss how attending school can increase a person's chances of success later in life.

The literacy and numeracy skills that a child gains during childhood provide important foundations for further education and other life skills, and can influence further academic achievement and employment outcomes. Later education, such as completing VCE or equivalent, is a key factor in improving economic and social opportunities in later life, through preparing individuals for tertiary education and the workforce.

Impact of play

Children can learn about their world through all sorts of real-world objects and safe replicas, from cardboard boxes and cooking utensils to toy cars and play phones. Infants are able to learn about shape and size just by exploring the ways that measuring cups fit together and they can learn about social skills through role-play or by imitating a parent having a conversation.

It is important that families provide time and resources for children to play. Equipment does not have to be expensive – as the old saying goes, a child is often happier playing with the box than the toy it contains. When provided with time to play, children are able to promote their social development through learning a range of social skills and appropriate behaviours. They are also able to promote their intellectual development through gaining a greater understanding of the world around them, learning new concepts and learning to problem-solve. Play can promote emotional development through providing children with a range of opportunities to learn to express a range of emotions, and some forms of play can also promote physical development such as fine and gross motor skills.

ACTIVITY 10.11: THE ROLE OF PLAY

It is important for children's development that they are provided with plenty of time and resources for play. Children are likely to love playing with pots and pans from the kitchen, playing dress-up in Mum's or Dad's clothes, building cubby houses, and just playing around the backyard with a ball.

When parents play with their children, they act as role models, teaching their children important skills such as how to take turns and cooperate. During play, parents can encourage children by asking questions and exploring different ways of doing things.

1 In pairs, select three examples of different types of play, such as different games or activities in which a child could participate.
2 Explain how each of these activities can promote the development of a child.

Impact of parenting practices

Doing well in young adulthood does rely on high-quality parenting during childhood, such as parents who provide love, affection and encouragement to their children. According to the AIFS, being raised in supportive parent–child childhood relationships is significantly associated with positive development outcomes in adulthood (measured at 23–24 years of age), such as social competence, trust and tolerance

of others, and trust in authorities. Parental involvement can result in positive outcomes in child development through the quality time the parent spends directly interacting with their child through activities such as playing games or reading. Research indicates that children who are raised in families where they experience poverty, have less supportive parents or are maltreated are significantly more likely to experience issues with their health and development in adulthood.

Corporal punishment is a disciplinary method that uses physical force on the body that causes some degree of pain of discomfort as a means of controlling someone or correcting behaviour. Corporal punishment of a child may include smacking or hitting. Victorian common law allows parents to administer corporal punishment to children in their charge provided the punishment is neither unreasonable nor excessive.

Research indicates that children who are physically punished are more likely to use corporal punishment on their own children, and some of the outcomes of using physical force as a means of punishment can include low self-esteem, anti-social behaviour, aggression, mental health problems, negative parent–child relationships, impaired cognitive ability and risk of physical abuse from parents.

DISCUSS

Discuss how the actions of parent(s) can impact a child's development.

Impact of child health on future health and development

A child's health can influence development throughout their lifespan. For example, chronic or long-term health conditions such as diabetes, asthma or cancer can affect a child's future development as the condition may impact their participation in school or recreational activities. Missing school can lead to gaps in a child's learning that can affect intellectual development in the long term. Through missing out on participating in recreational activities, having a long-term and chronic condition may not only impact health due to a possible reduction in fitness, but can also impact on physical (gross motor development and muscle growth) and social development, due to reduced opportunities to interact with others and learn new social roles.

Obesity in childhood can impact all dimensions of health in childhood, including physical health, as being obese can contribute to an increased risk of type 2 diabetes mellitus, asthma, cardiovascular disease and some cancers compared with non-obese children. It can also impact emotional and mental health due to issues with self-esteem and body image. Being overweight or obese during childhood is also a risk factor for poor physical health and increased illness in adulthood.

10.8 THE INTERGENERATIONAL NATURE OF HEALTH AND WELLBEING

For centuries, family members have been passing down information and skills to promote the health and wellbeing of the next generation. For example, when an infant's first tooth appears, they are taught from a young age by parents or carers that they need to brush their teeth in order to protect them. They are given the resources they need such as a toothbrush and toothpaste, and are taught the skills they need to effectively clean their teeth; over time, this is a responsibility that they take over for

themselves. The child then grows into an adult and, if and when they become a parent, they will teach this skill to their own children.

Even as life and society have changed, the advice from older generations has typically continued to be passed on from carer, parent or grandparent to child. An example is wearing seatbelts to promote road safety. Over time, the world has witnessed the invention and then development of motor vehicles, which have become faster, so laws have been established to protect human life. Parents have adapted to teach the children in their care the steps they need to take to be safe, such as ensuring that they use a seatbelt whenever they are travelling in a motor vehicle.

There are some issues, however, where previous generations are finding it challenging to support and guide future generations about making choices to promote their health and wellbeing. A recent example is the issue of appropriate social media use and exposure to technology. Parents have no benchmark or advice from previous generations to pass on, due to the rapid and recent evolution of technology and social media, and are having to make up the rules as they go. This can be particularly harmful to the current generation of young people if parents don't get the balance right. Overexposure and poor judgement regarding the use of digital technology and social media can have a negative impact on health and wellbeing through issues such as lack of physical activity, cyber-bullying, mental health issues, issues with addiction and poor social skills.

Parents and older generations have a significant role in the lives of Australian children and youth, as they typically provide the environment in which children learn and are cared for. Evidence suggests that children brought up in healthy, loving, stimulating and nurturing families have better health and wellbeing outcomes throughout life.

It is not only older generations who influence the health and wellbeing of the younger generation. As Australia's population ages, more and more children are providing care, with the intention of promoting the health and wellbeing of their parents. In this way, the health and wellbeing of children may impact directly on the health and wellbeing of their parents through the care that they are able to provide.

Passing on values, advice and information and skills

Information about health and wellbeing is passed from one generation to the next; for example, advice about when to introduce a baby to solid foods, or what foods to eat when you are unwell.

Sometimes this advice supports current government or expert advice and sometimes it doesn't. For example, current infant feeding guidelines encourage exclusive breastfeeding of infants until approximately six months of age, while many women may be encouraged by older generations to introduce solid foods earlier than this. There is also informal advice that can be passed on from one generation to the next; for example, some people insist that their children wash their hands before every meal to ensure they don't have germs on their hands, while others believe it is important to let kids play in the dirt to build up their immunity.

The advice individuals receive is often largely influenced by the advice their parents received while growing up. This can also include more political or controversial opinions about public health issues such as vaccination. Individuals often adopt the opinions of their parents as their own default opinion, as they trust their parents.

It is also the parents or carers who make decisions early in a child's life about whether or not to support the child's participation in organised sport or recreational activities. This decision can influence a child's health and wellbeing in the future, as if they are active in childhood and develop skills and interest in a particular sport, they are more likely to participate in this activity or sport as they get older and then expose their own children to similar opportunities.

DISCUSS

Discuss the importance of parents and grandparents passing on their knowledge to their children and grandchildren.

Socioeconomic status

The SES of one generation can certainly have an impact on their own health status, as those with poorer social or economic status have a greater risk of poor health, disability, illness and death. SES can also have an impact on the health status of future generations. For example, according to the AIHW, in 2013 mothers in the lowest SES areas were 30 per cent more likely to have a low birthweight baby than mothers in the highest SES areas.

Childhood is an important time for laying down the foundations of literacy. Reading to children contributes to the early development of their literacy skills, such as vocabulary and comprehension. Children in the highest SES areas are more likely to have been read to or told stories on a regular basis than those in the lowest SES areas. This can have an impact on their future health and wellbeing, and their future literacy levels.

According to the AIFS, young people (aged 23–24 years) whose families experienced poverty when they were growing up were significantly more likely than their peers to suffer depression or anxiety. Research indicates that because low-income parents are less able to have sufficient economic resources to support a minimum living standard, this can impact negatively on the nutritional intake, safety, level of stress, quality of housing and access to healthcare of their family, including children. This contributes to children in low-income families being more likely to have behavioural problems, social and psychological difficulties, and poor health and educational outcomes in both the short and long term.

Parental education

Educational achievement is increasing among Australians. Evidence suggests that parental education impacts on their health and development and that of their families (especially children). NAPLAN data indicates that parents who have higher levels of educational attainment are more likely to have children who achieve at or above the national minimum standard.

Higher levels of education are related to higher income and better employment prospects. It can also have a more direct influence on health by providing knowledge and skills to assist in accessing health services and live a healthy lifestyle. This suggests that parents who have attained higher levels of education have the knowledge and skills to make healthier choices for their children. As their children grow, parents are likely to have the resources to assist them to make healthy choices.

Maternal diet and substance use during pregnancy

If a mother smokes tobacco during pregnancy, it can act as a significant risk factor to the health and development of her unborn baby, with results such as low birthweight, premature birth, birth defects, respiratory symptoms and complications with lung function. The effects of maternal smoking of tobacco can continue for the infant as they move into childhood, as it has been linked to some childhood cancers, lower cognitive development, high blood pressure, asthma and obesity.

If a mother consumes alcohol during pregnancy, then it can act as a significant risk factor to the health and development of her unborn baby, as alcohol can have a negative impact on foetal growth and development both during the pregnancy and after birth. Due to the fact that alcohol can easily cross the placenta during pregnancy, there is no safe amount of alcohol that can be consumed during pregnancy and women are encouraged to abstain from drinking alcohol while pregnant. The consumption of alcohol during pregnancy is associated with low birthweight, foetal alcohol syndrome and neurodevelopmental disorders among infants; many of these conditions will continue to impact on health and development throughout life.

Mothers who consume a nutritious diet during pregnancy and meet all of the extra nutrient requirements will ensure their unborn children have all the correct nutrients for their growth and development inside the womb and when they are born. Adequate iodine levels are very important for brain development to prevent cognitive impairment. Folate is required for the prevention of neural tube defects, which can impact physical and intellectual development.

Parental health

Parental health (particularly maternal health) can have a direct impact on the health and development of a child. Maternal stress, poor nutrition, mental health issues and risk-taking behaviour can all lead to adverse health and development outcomes for the child and into adulthood.

Poor parental health, such as parents who have a chronic illness or disability, can lead to loss of income and hospitalisation, and can at times make it difficult for them to meet the physical, social, emotional and economic demands of parenthood. This can impact child health, as it can be stressful for the child. It can also impact the long-term health and development of children, by increasing the risk of long-term mental illness, behavioural problems and poor academic performance.

An increasing number of children provide informal care for a parent or relative with a disability or long-term condition. For some, taking on this care may be rewarding and promote development in terms of building resilience and social maturity.

However, it can also have a negative impact on the health and development of a child, as it can reduce their involvement in educational and social activities. Young carers have higher levels of stress and lower levels of educational achievement than other children. The extent of the impact depends on the type and extent of the disability of the parent or relative.

Children need time to be children, and play is an important part of their development. When children take on adult responsibilities, such as caring for a parent or relative, it reduces the time they have available for play and interacting with other children. They may be completing tasks that place physical strain on their body and at times may feel emotionally drained. All these factors can have negative consequences for a child's physical, social and emotional development.

DISCUSS

Discuss how a parent's health has a major influence on a child's health and wellbeing and development.

ACTIVITY 10.12: PARENTAL SKILLS

1 Explain how poor parenting skills can impact the social development of an infant.
2 Explain how parental mental health can impact the intellectual development of a young child.
3 Explain how parental alcohol dependence can impact a child's physical development.

Parents who suffer from mental illness or poor mental health may not be able to provide the emotional support a child needs, which may impact the health and development of the child. According to the AIFS, reports of parental mental illness/substance use problems were significantly associated with higher rates of long-term health problems among their children as they moved into adulthood (at 23–24 years of age).

When parents are healthy, they are better able to meet the physical, social and emotional needs of a child, which contributes to them raising healthy children who are more likely to be able to grow up as healthy adults and in turn provide for their own children.

FIGURE 10.38 The associated impacts of experiencing trauma can be passed on to future generations.

INTERGENERATIONAL TRAUMA

Intergenerational trauma is trauma that is experienced by one generation and then its impacts passed on to subsequent generations.

Many Aboriginal and Torres Strait Islander peoples in Australia have suffered from intergenerational trauma as a result of colonisation. The loss of land and culture along with the forced removal of children from families has led to this trauma. The trauma that these Aboriginal and Torres Strait Islander peoples have suffered has led to secondary trauma in subsequent generations. This initial trauma has seen many Aboriginal and Torres Strait Islander people suffering from mental health issues, poor parenting practices, violence and alcohol dependence. These factors have then contributed to poorer health and wellbeing and development outcomes in subsequent generations. The pain of this initial trauma continues and cycles through future children potentially greatly impacting their health, wellbeing and development.

CHAPTER SUMMARY

- Fertilisation or conception is:
  - the beginning of human development
  - the point at which a sperm penetrates an ovum to form new life.
- The stages of prenatal development are the germinal, embryonic and foetal stages. The key developmental characteristics of these stages are:
  - **germinal** – the first stage of prenatal development, measured from the moment of conception until implantation (about two weeks post-conception)
  - **embryonic** – the second stage of prenatal development, measured from implantation (about two weeks post-conception) until the end of the eighth week after conception
  - **foetal** – the third stage of prenatal development, measured from the end of the eighth week after conception until birth.
- Risk and protective factors play a significant role on prenatal development:
  - **Risk factors** are things that increase the chance of developing a problem or, if a problem exists, make it worse. Risk factors affect wellbeing and increase the chances of harm, injury or death occurring. Examples of risk factors in the prenatal stage include a mother smoking, consuming alcohol or taking other drugs, whether either parent has a disability, and the health of both parents.
  - **Protective factors** are positive things in a person's life that decrease the chance of the person developing a problem or, if a problem exists, make it better. Protective factors promote wellbeing and reduce the risk of harm, injury or death. Examples of protective factors in the prenatal stage include the mother's diet and access to healthcare, whether or not the mother has been vaccinated, and the parents' level of education.
- There are physical, social, emotional and intellectual developmental characteristics related to infancy and early childhood:
  - **physical development** – rapid growth (infancy), slow and steady growth (childhood), learning to walk, pincer grip develops and teeth erupt
  - **social development** – learning to play social games like peek-a-boo, learning to play alongside other children, starting to understand the concept of sharing, and may start to develop friendships
  - **emotional development** – learning to express likes and dislikes, starting to demonstrate a range of emotions, and learning to label and understand emotions
  - **intellectual development** – starting to develop language, learning to count, learning to tell more complex stories, and developing imagination.
- A child's early life experiences impact on their future health and development:
  - An individual's experiences early in life are very important and form the building blocks for further development as they progress through the lifespan.
  - Experiences relating to socialisation, relationships, education, play and parenting practices can all impact an individual's development during infancy and early childhood and may continue to impact on health and wellbeing and development in the future.

- Intergenerational health plays a role in influencing future health and wellbeing:
  - For centuries, family members have passed down information and skills to promote the health and wellbeing of the next generation.
  - Aspects of one generation that might impact on the next include passing on values, advice, information and skills, parental health, socioeconomic status, parental education, maternal diet and substance use.

KEY QUESTIONS

SUMMARY QUESTIONS

1. Explain the process of fertilisation.
2. Outline the three main stages of prenatal development.
3. Explain the role of parents in determining the optimal development of children through their understanding fertilisation and prenatal development.
4. Identify two risk factors during prenatal development. Explain the impact of each risk factor.
5. Identify two protective factors during prenatal development. Explain the impact of each protective factor.
6. Define ‘physical development’. Identify three examples of physical development during infancy and early childhood.
7. Define ‘social development’. Identify three examples of social development during infancy and early childhood.
8. Define ‘emotional development’. Identify three examples of emotional development during infancy and early childhood.
9. Define ‘intellectual development’. Identify three examples of intellectual development during infancy and early childhood.
10. Explain the role of parents, carers and/or the family environment in promoting the optimal development of children.
11. Explain the impact of early life experiences on future health and development.

EXTENDED-RESPONSE QUESTION

QUESTION

Quality parenting is important for raising healthy children. Unfortunately, not all children receive quality parenting. Explain the intergenerational impact on child health and development if they do not receive quality parenting. (8 marks)

EXAMINATION PREPARATION QUESTIONS

This is Liam, who is four years old, and his parents Jacqui and Joel, who have just found out that they are pregnant with their second child.

FIGURE 10.39 Liam and his parents, Jacqui and Joel

A Outline two examples of the role of Jacqui and Joel in determining the optimal development of their unborn baby through their understanding of prenatal development. (4 marks)

B Identify one risk factor and one protective factor relating to prenatal development. Explain the possible impact of each factor on the development of Jacqui's unborn baby. (4 marks)

C Identify two examples of physical, social, emotional and intellectual development that Liam is likely to be experiencing. (8 marks)

D Explain one example of how the health and wellbeing of Jacqui and Joel might impact on the health and wellbeing of Liam and their unborn baby. (2 marks)

11 THE HEALTH SYSTEM IN AUSTRALIA

KEY KNOWLEDGE

- Key aspects of Australia's health system such as Medicare, the Pharmaceutical Benefits Scheme and private health insurance
- The range of services available in the local community to support physical, social, emotional, mental and spiritual dimensions of health and wellbeing
- Factors affecting access to health services and information
- Rights and responsibilities associated with accessing health services, including privacy and confidentiality relating to the storage, use and sharing of personal health information and data
- Opportunities and challenges presented by digital media in the provision of health and wellbeing information, for example websites, online practitioners and digital health apps
- Issues such as ethics, equity of access, privacy, invasiveness and freedom of choice relating to the use of new and emerging health procedures and technologies
- Options for consumer complaint and redress within the health system.

KEY SKILLS

- Describe key aspects of the health system
- Research health services in the local community and explain which dimension(s) of health each one supports
- Identify and explain factors that affect people's ability to access health services and information, including digital media, in Australia
- Discuss rights and responsibilities of access to health services
- Analyse issues such as ethics, equity of access, privacy, invasiveness and freedom of choice associated with the use of new and emerging health procedures and technologies
- Explain the options for consumer complaint and redress within the health system.

INTRODUCTION

This chapter explores the key aspects of Australia's **health system** at a national level, including Medicare, the Pharmaceutical Benefits Scheme, and private health insurance. This includes looking at the purpose, health services covered, and funding of each of these three schemes.

health system: Activities whose primary purpose is to promote, restore and/or maintain health.

This chapter also explores the range of health services available at a local level that promote the various dimensions of health and wellbeing. Such health services include hospitals, yoga studios, maternal and child health services, and youth support centres.

The accessibility of health services in Australia is also examined. This chapter looks at why people may experience difficulties in accessing health services, including the distance they need to travel, as well as financial, language and cultural barriers. Australians have a right to access health services under the Australian Charter of Healthcare Rights. Health service providers have responsibilities to the people they assist, as outlined in the Code of Conduct for General Health Services. There are processes available for consumers to complain about, and seek redress for, aspects of the health system.

There are opportunities and challenges created by health services being provided via digital sources, such as health apps and websites. There are also issues surrounding the use of new health procedures and technology.

AOS 2

What you need to know

- The key aspects of Australia's health system including:
  - Medicare
  - the Pharmaceutical Benefits Scheme
  - private health insurance.
- The various services that are available in your local community to support health and wellbeing.
- The reasons why people have difficulty accessing health services and information, including distance, cost, knowledge, language, cultural and religious barriers.
- The various opportunities and challenges that arise when health services are provided through digital media sources such as websites and health apps.
- The rights and responsibilities that come with accessing health services; these include privacy, confidentiality, respect and safety.
- The issues relating to the use of new health procedures and technologies, including ethics, privacy, invasiveness, freedom of choice, and whether all individuals have the same level of access.
- The options that consumers have to complain about, and receive compensation for, unsatisfactory health services.

What you need to be able to do

- Describe the various aspects of the Australian health system (Medicare, the Pharmaceutical Benefits Scheme, and private health insurance).
- Conduct research on the health services in your local community and explain which dimensions of health and wellbeing each one supports.

- Identify and explain the different factors that affect people's ability to access health services and information, including digital media, in Australia.
- Analyse issues such as ethics, equity of access, privacy, invasiveness and freedom of choice associated with the use of new and emerging health procedures and technologies.
- Understand and discuss the rights and responsibilities of access to health services.
- Explain the options for consumer complaint and redress within the health system.

11.1 KEY ASPECTS OF AUSTRALIA'S HEALTH SYSTEM

As shown in Figure 11.1 on the next page, the Australian healthcare system is highly complex and incorporates a wide variety of private and government-funded service providers. Members of the Australian public generally have a range of options regarding the services they use as healthcare consumers. For many health issues, an individual's first contact with the healthcare system is through their general practitioner (GP); however, depending on the particular health issue, the individual may also decide to visit their dentist, a pharmacist, an allied health service or a hospital emergency department for treatment.

Medicare

The Australian Government introduced Medicare in February 1984 as a universal healthcare system. Medicare's aim was to improve the access to healthcare of all Australians in need of treatment, regardless of age or income, at little or no cost.

The Medicare system has three main objectives:

- to make healthcare more affordable for all Australians
- to give all Australians access to healthcare services with priority according to clinical need
- to provide high-quality care.

Medicare is funded by the federal government partly through contributions made to the healthcare system through a 2 per cent Medicare levy paid by most taxpayers and based on taxable income.

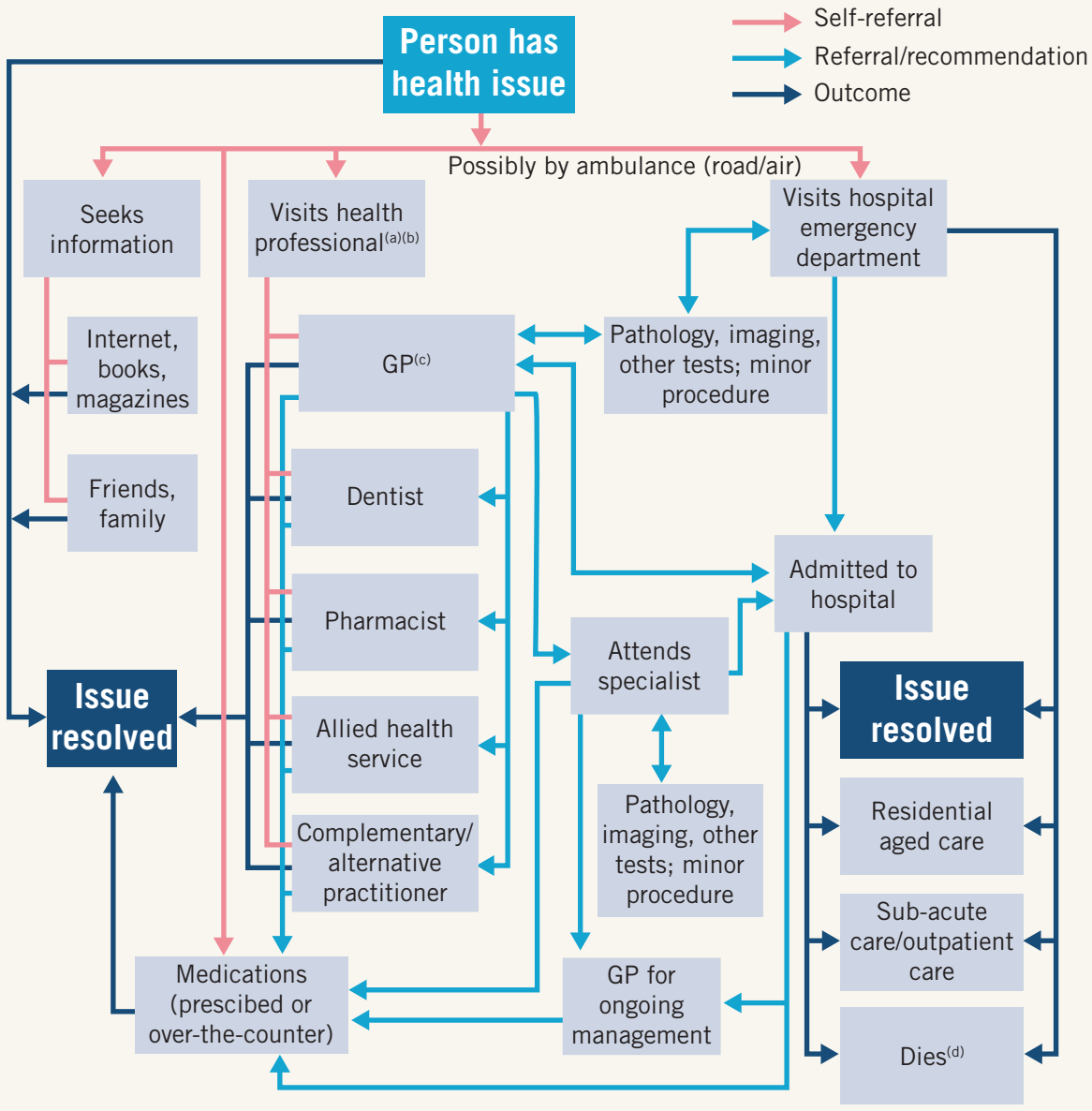
How Medicare works

Medicare covers both in-hospital and out-of-hospital services. It provides free or subsidised treatment by GPs and optometrists, as well as certain diagnostic tests. For out-of-hospital services, patients can choose to be treated by their own general practitioner and are reimbursed for all or part of the doctor's fee by Medicare, depending on the billing options chosen by the doctor.

The coverage of healthcare services by Medicare is based on the Medicare Benefits Schedule (MBS), which lists the fees set by the federal government for a range of services. Practitioners may elect to charge more than the **schedule fee**, which means that the patient has to pay the difference as an out-of-pocket amount. If the doctor bills Medicare directly, this is known as 'bulk billing' and means that the doctor accepts the Medicare payment as full payment for the service, so there is no cost to the patient.

schedule fee: A fee set for a service by the Australian Government.

Bulk-billing rates are seen as an indicator of the affordability of healthcare, because they remove cost as an obstacle to seeking care.



(a) This can include a telephone call to a health advice and referral service.
(b) The sub-categories shown here are not complete, and may include community health services and clinics, and other services for which a referral is not required.
(c) This includes GP-like clinics provided by hospitals and community health services.
(d) The majority of deaths in Australia occur in hospital, although death can be an outcome anywhere in the patient's path through the system, or before any contact with the health system (such as in a motor vehicle accident).

FIGURE 11.1 Australia's healthcare system

If the medical practitioner does not bulk bill, and charges a direct fee, a patient has two choices. They can pay the account in full, then claim the benefit from Medicare. The other option is to submit the unpaid account to Medicare and receive a cheque made out to the medical practitioner, which is then passed on to the doctor along with any balance still owing.

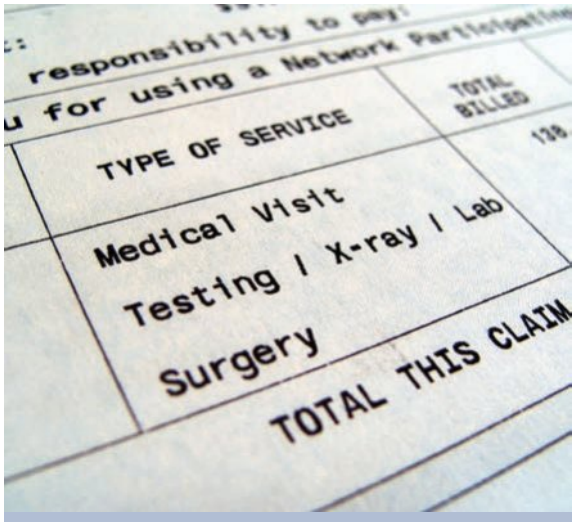


FIGURE 11.2 Financial difficulty can prevent some people from accessing healthcare.

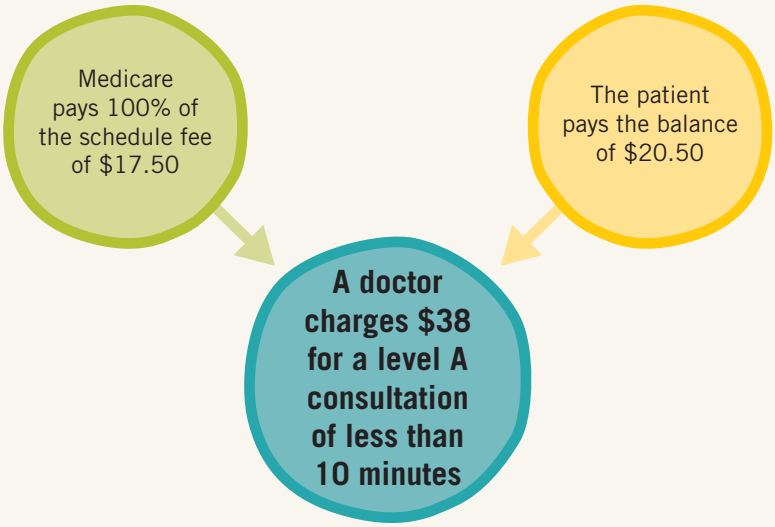


FIGURE 11.3 Scenario 1, option A. The fees used in this figure are correct as of May 2020.

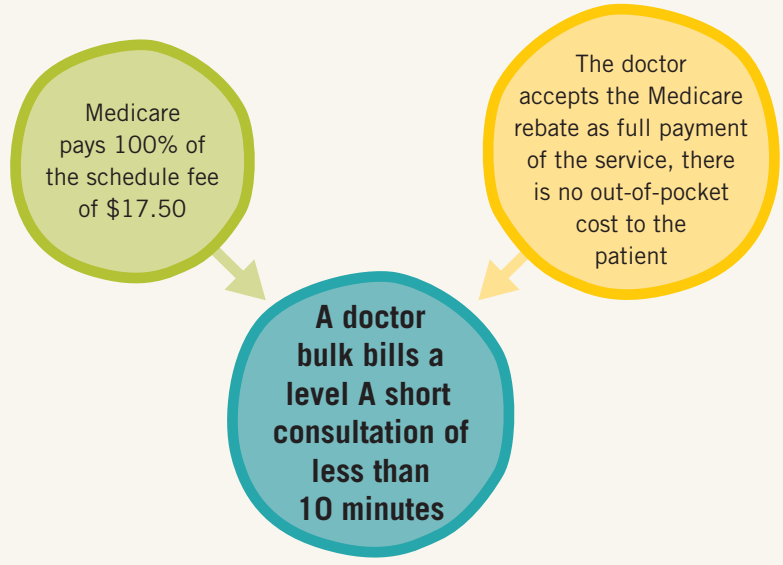


FIGURE 11.4 Scenario 1, option B. The fees used in this figure are correct as of May 2020.

Under Medicare, patients who are referred for treatment by a medical practitioner and are admitted to a public hospital as a public patient pay nothing for their treatment, food and accommodation while in hospital. Emergency and outpatient treatment is also free. A suitably qualified doctor is appointed by the hospital, but public patients do not have any choice about the doctor who treats them; they may also not have a choice about when they are admitted to hospital. Individuals can choose to be treated as a public patient, even if they are privately insured.

Those who choose to be treated in a private hospital or as a private patient in a public hospital can select the doctor or specialist of their choice. Medicare pays 75 per cent of the MBS or schedule fee for the services performed by the doctor, and some or all of the balance is covered by private health insurance. The patient may have to pay for any additional cost if the doctor charges more than the schedule fee. Charges that the hospital makes for accommodation, theatre fees, diagnostic tests, food and medication are usually not covered by Medicare and the individual is charged for any gap between what the hospital charges and what the private health insurance policy covers. Everyone who lives in Australia and is an Australian or New Zealand citizen, or who has a permanent visa, is entitled to use Medicare services. Anyone over the age of 15 years is eligible for their own Medicare card

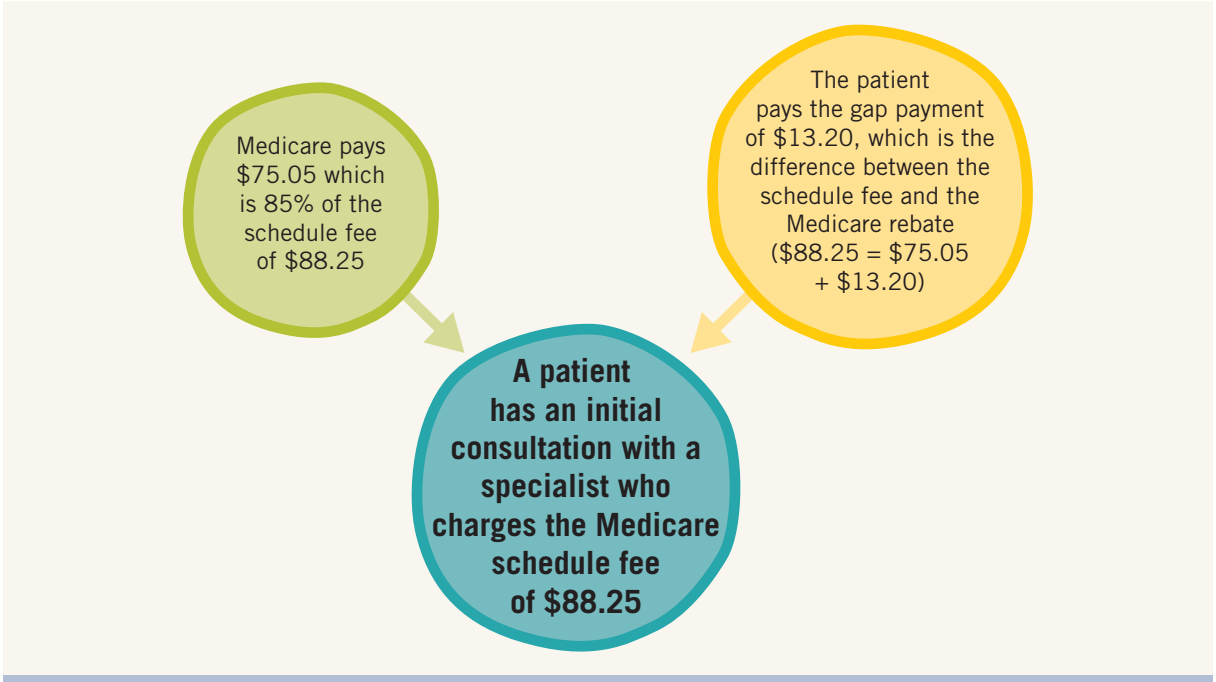


FIGURE 11.5 Scenario 2, option A. The fees used in this figure are correct as of May 2020.

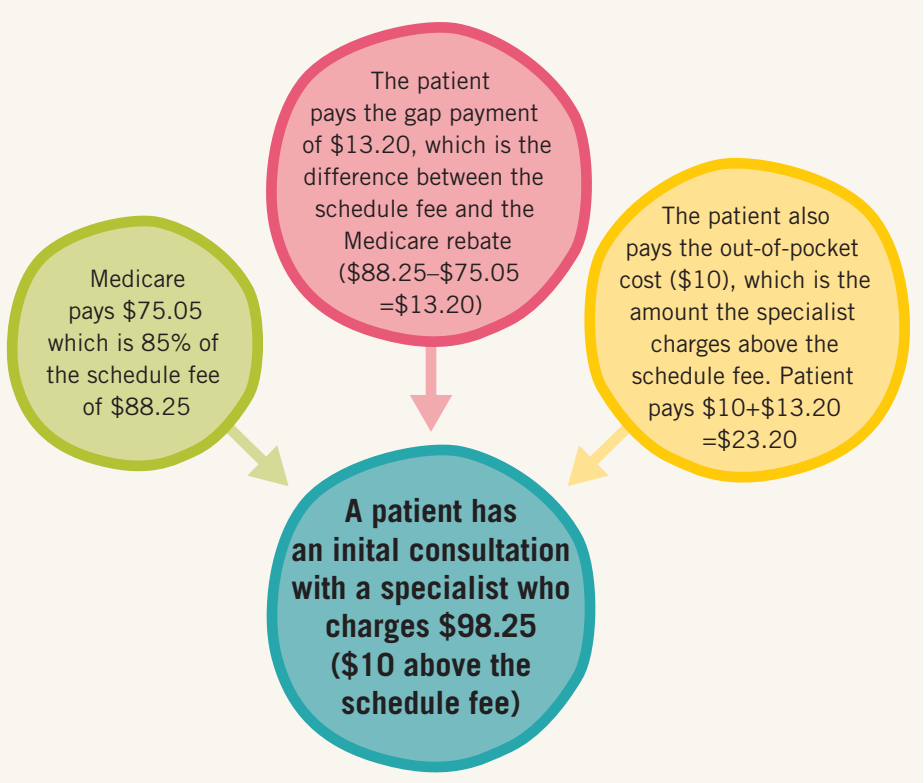


FIGURE 11.6 Scenario 2, option B. The fees used in the figure are correct as of May 2020.

DISCUSS

At what age can an individual get their own Medicare card? What advantages are there for young people in having their own card?

Medicare Safety Net

The **Medicare Safety Net** is a protective measure designed to avoid patients having to pay high medical costs. It covers a range of out-of-hospital costs, including doctor and specialists' consultations, ultrasounds, blood tests and x-rays.

When a patient's expenses reach $477.90 (as at May 2020) in a calendar year, they are eligible for the safety net. This means their Medicare benefit increases to 100 per cent coverage of the Medicare schedule fee for any further out-of-hospital services for that year.

If a doctor charges more than the schedule fee, the extra cost does not count towards the safety net, and once the patient has qualified for the safety net, only the **gap amount** is covered; any **out-of-pocket cost** is not covered by Medicare.

The Extended Safety Net was implemented for families and singles who incur out-of-pocket costs for eligible out-of-hospital Medicare services. Under the Extended Safety Net, Medicare pays 80 per cent of out-of-pocket costs once a threshold of $2169.20 is reached for families or individuals, or $692.20 for concession card holders or families who receive Family Tax Benefit Part A (as at May 2020). The threshold amounts are updated on 1 January each year.

Services covered by Medicare

Medicare covers a range of essential or necessary services provided by doctors and hospitals. The following out-of-hospital services are covered by Medicare:

- free or subsidised treatment by health professionals, such as doctors' consultation fees as often as needed (including some specialists)
- tests and examinations that are needed to treat illness, including x-rays and pathology tests
- optometrists' eye tests
- most procedures performed by GPs.

The following in-hospital services are also covered by Medicare:

- treatment and accommodation as a public patient is provided in a public hospital by a doctor appointed by the hospital as a result of an emergency or after referral from a doctor
- private patients in both private and public hospitals receive 75 per cent of the Medicare schedule fee for services and procedures, excluding accommodation in the hospital, theatre fees and medicines.

DISCUSS

Outline the services that Medicare covers and does not cover.

Services not covered by Medicare

While Medicare covers the fees for most services provided by doctors and hospitals that are viewed as necessary, other services that are not deemed necessary are often not covered.

The following are *not* covered by Medicare:

- general and most dental examinations and treatments (except under specific circumstances)
- ambulance services
- home nursing
- most allied health services, such as physiotherapy, speech pathology, occupational therapy, chiropractic services, podiatry or psychology services (except under specific circumstances)
- hearing aids, contact lenses and glasses

Medicare Safety Net: An additional rebate scheme introduced by the federal government for the benefit of patients, covering a range of doctors' visits and tests received out of hospital. It provides for reimbursement of 100 per cent of the Medicare Benefits Schedule (MBS) fee for out-of-hospital services once the relevant threshold has been reached.

gap amount: The difference between the Medicare benefit and the schedule fee.

out-of-pocket costs: The difference between the Medicare benefit and what a doctor charges.

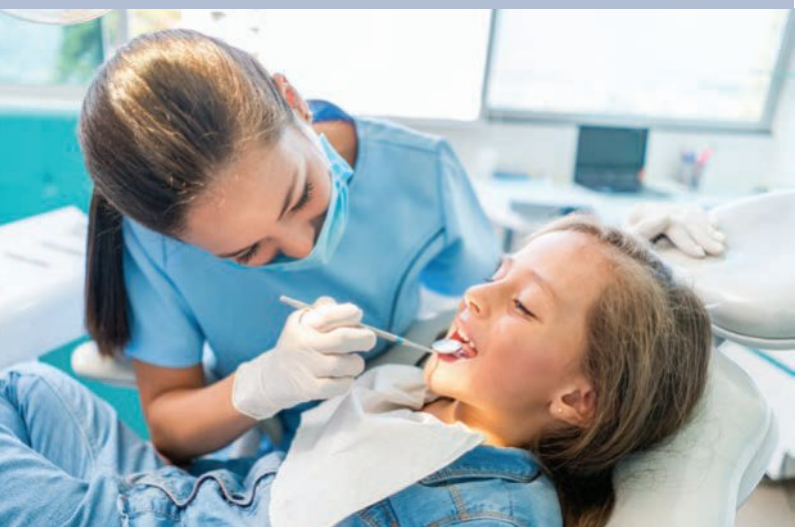
- medicines, except those covered by the Pharmaceutical Benefits Scheme
- medical costs incurred overseas
- medical examinations for employment purposes, life insurance or superannuation
- medical services not deemed clinically necessary
- private hospital costs other than treatment such as accommodation in hospital or items such as theatre fees and medicines
- acupuncture (unless part of a doctor's consultation).

It is not always clear whether a service is covered by Medicare. For example, dental costs are typically not covered by Medicare; however, in specific circumstances, such as for children aged 2–17 years who are covered by Medicare and receive certain government benefits such as Family Tax Benefit Part A for at least part of the calendar year, basic dental services are provided through the Child Dental Benefits Schedule.

Allied health services, such as treatment by a physiotherapist, speech pathologist, occupational therapist, chiropractor, podiatrist or psychologist, typically are not covered by Medicare; however, people with a **chronic medical condition** may be entitled to receive a Medicare benefit to help manage their condition under specific circumstances. For example, a doctor may suggest that an individual with a chronic disease be placed on a GP Management Plan, and if the individual requires treatment from at least two or more health professionals, the doctor may put in place a Team Care Arrangement Plan, which might enable the individual to access Medicare rebates for specific allied health services.

chronic medical condition: A condition that has been present for at least six months, is likely to be present for six months, or is terminal.

FIGURE 11.7 Dental care is not covered by Medicare, except in some cases for children between 12–17 years



Medicare does not cover the medical treatment an individual receives overseas; however, Australia has reciprocal healthcare agreements with a number of countries, including New Zealand, the United Kingdom, the Republic of Ireland, Sweden, the Netherlands, Finland, Italy, Belgium, Malta, Slovenia and Norway. This means that some of the cost of essential treatment may be covered for Australians visiting these countries. It also means that when residents of these countries visit Australia, some of the cost of essential medical treatment they receive here may be covered by Medicare.

Medicare has a range of advantages for patients, including being able to access essential healthcare as a public patient in a public hospital for little or no cost; being able to receive treatment by a GP of an individual's own choice for little or no cost; being able to receive a range of tests for a subsidised cost; being available to all Australian citizens, regardless of their age or income; and, due to the reciprocal arrangements, Australians potentially being able to access free or subsidised healthcare in a range of other countries.

ACTIVITY 11.1: FREE DENTAL COVER

Access the Child Dental Benefits Schedule page on the Australian Government's Services Australia website.

1 Who is eligble to receive free or partial dental cover?
2 What is covered by the schedule?
3 Investigate why oral healthcare is so important in childhood, and why Medicare may cover these services for some individuals.

Disadvantages of Medicare include the significant financial burden it places on the Australian Government; long waiting lists – especially for less essential treatments; its failure to cover the cost of allied health services; gap amounts or out-of-pocket costs to the individual; and a lack of choice of doctor for in-hospital treatment in a public hospital.

Funding of Medicare

Medicare is funded by the federal government, which raises revenue from taxpayers in various ways. Medicare is funded by:

- general income taxes that are paid to the government and may be used to pay for a range of government services, such as healthcare
- contributions made to the healthcare system through a 2 per cent Medicare levy paid by most taxpayers – this is based on taxable income and is paid in addition to general income tax
- the Medicare Levy Surcharge, which is an additional amount paid by individuals and families who do not have a certain level of private hospital cover. As of January 2020, the surcharge was set between 1 and 1.5 per cent of total income for a single taxpayer earning above $90 000 and for families earning over $180 000.

The Pharmaceutical Benefits Scheme

The Pharmaceutical Benefits Scheme (PBS) was introduced in 1948 (before Medicare was implemented) as a limited scheme that provided free medication for pensioners, as well as making 139 essential medicines free to other members of the community.

Today the PBS provides timely, reliable and affordable access to necessary medicines for Australians. The PBS is part of the Australian Government's broader National Medicines Policy and is an integral part of Australia's healthcare system that plays an important role in improving the wellbeing of all Australians. The aim of the PBS is to subsidise the cost of a wide range of prescription medications, providing Australians with vital medications at affordable prices to ensure that optimal health outcomes and economic objectives are achieved.

The effectiveness of a drug, together with its safety and cost-effectiveness compared with other treatments, is considered before it is included on the PBS. Listing every medicine on the PBS, such as expensive medications with only minimal benefits compared with other treatments, would not be cost-effective and would very quickly make this scheme economically unsustainable. Spending on the

DISCUSS

Discuss why the PBS might help to make some medications cheaper for individuals to purchase.

ACTIVITY 11.2: MEDICARE REVIEW

1 Explain what Medicare is.
2 Outline what is covered by Medicare.
3 Explain what is not covered by Medicare.
4 Outline the advantages and disadvantages of Medicare.
5 Explain how Medicare is funded.
6 Explain what a schedule fee is.
7 Explain what bulk billing is.
8 Explain what the Medicare Safety Net (including the Extended Safety Net) is.

PBS is intended to contribute to reducing the cost of the wider health system by preventing the development of serious conditions and therefore reducing the need for hospital stays or other demands on the healthcare system.

The price an individual pays for a medication covered by the PBS is called a co-payment, and it depends on their situation. As of 1 January 2020, general patients pay up to $41 for medication covered by the PBS and concession card holders pay $6.60, with the Australian Government paying the balance. This figure is updated on 1 January each year.

If a medication is not listed on the PBS, then an individual pays the full price of the medication. In some cases, the cost of medication not covered by the PBS may be reimbursed by an individual's private health insurer.

If an individual is provided with medication as a public patient in a public hospital, these are usually free as part of the patient's hospital treatment. Pharmacists may choose to discount the PBS co-payment by up to $1.00; this discount is totally at the discretion of the pharmacist.

Individuals and families are protected from large expenses for medications listed on the PBS through the PBS Safety Net. Once an individual or family has spent $1486.80 in any year on medications, they only need to pay the concession rate of $6.60 per prescription. For individuals and families who are concession card holders, once they spend over $316.80 on prescription medications covered by the PBS, they receive further medications covered by the PBS at no cost.

The Repatriation Pharmaceutical Benefits Scheme (RPBS) is also available to provide subsidised medication to war veterans and their dependants. It provides similar coverage to that provided by the PBS; however, it covers a wider range of pharmaceuticals.

The PBS has a range of advantages for patients, including providing access to essential medication at a subsidised rate or, in some cases, free. It also enables access to medications from local pharmacies; it does not require medications to be purchased from specialised services; it includes the PBS Safety Net and the RPBS to further protect people from the high cost of medication; it is available to all Australian citizens, regardless of their age or income; and it provides additional support to those with concession cards by having lower co-payments.

Disadvantages of the PBS include the significant financial burden it places on the Australian Government; its failure to cover all medications; and the co-payment of $41 that still needs to be paid by most Australians.

DISCUSS

Outline what the PBS Safety Net is and why it was introduced.

ACTIVITY 11.3: UNDERSTANDING THE PHARMACEUTICAL BENEFITS SCHEME

Visit the PBS Safety Net website, then complete the following table with the updated information for the current year.

	GENERAL PATIENTS	CONCESSION
Cost of medication on PBS		
PBS Safety Net threshold		
Cost of medication once threshold is met		

Funding of the Pharmaceutical Benefits Scheme

The PBS is funded by the Australian Government through taxes. When a doctor prescribes a PBS-approved medication, patients pay the subsidised amount and the government pays for the remaining cost of the drug.

Expenditure on the PBS and RPBS has increased over the past decade (except for a slight decline between 2011–12 and 2013–14, due to changes in the arrangements for generic medications) and is expected to continue to increase. There are a number of reasons for this, including an increase in the number of PBS-listed medications, an increase in the incidence of chronic conditions and Australia's ageing population.

In 2017–2018, government spending on medications on the PBS and RPBS totalled $11.6 billion for the 204 million subsidised medications dispensed.

Private health insurance

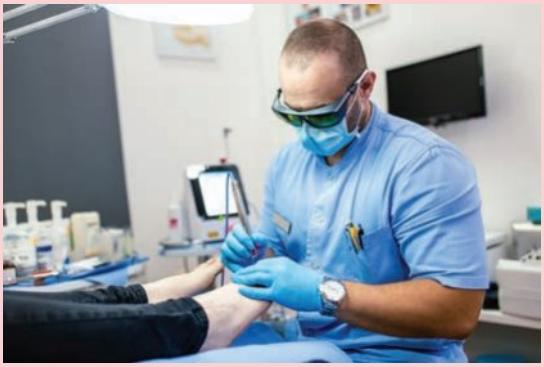
Private health insurance contributes significantly to the healthcare system by covering some of the costs associated with private hospital treatment and a range of extras, or ancillary health services, such as physiotherapy and dental care. Private health insurance is a subscription or policy for which a person pays to provide them with different levels of cover. Private health insurance can provide individuals with additional healthcare services to those provided by Medicare. At June 2019, 11.2 million Australians (44.2 per cent) had some form of private patient hospital cover and 13.6 million (53 per cent) had some form of general treatment cover through private health insurance. The reasons why some people may choose to pay for private health insurance include:

- to give them the choice of being treated in a private hospital
- to enable them to choose the hospital in which they are treated
- to enable them to choose the doctor who treats them in hospital
- to entitle them to their own room in hospital
- shorter waiting periods for some non-emergency procedures in private hospitals
- more choice about the timing of non-emergency procedures in hospital
- coverage of a wider range of services than Medicare
- the option of extras cover to encompass a broader range of out-of-hospital services.

The types of additional services that are available depend greatly on the type of private health insurance and the level of cover. If a patient pays for private hospital insurance cover, this enables them to have access to public or private hospitals with the choice of their own doctor or specialist. They may also have more choice about the timing of the treatment and may experience shorter waiting times.

Any additional charges the hospital has for accommodation, theatre fees, diagnostic tests, food and medication are usually covered by private health insurance. However, the individual is charged for any gap between what the hospital charges and what the private health insurance policy covers. Medicare still contributes 75 per cent of the schedule fee for in-hospital services covered by the MBS; the remainder of the schedule fee (the gap amount) is paid by the private health insurance company.

DISCUSS



Private health insurance usually covers a lot of what Medicare doesn't cover; however, it can be costly. Discuss reasons why people may pay for private health insurance.

Many private hospitals charge more than the schedule fee, which means that the patient needs to pay the balance (the amount between the schedule fee and what the hospital charges) as an out-of-pocket cost. Many private health insurance companies are working with hospitals on arrangements to reduce the out-of-pocket costs for patients.

Depending on the level of cover, there may be some in-hospital services that are not covered, or not fully covered, by the private health insurance fund. These could include:

- specific services that are not covered at all (exclusions)
- services that are covered to a limited extent, meaning the individual has greater out-of-pocket expenses (restrictions)
- cosmetic or elective surgery for which Medicare does not pay a benefit.

As with home or car insurance, individuals can choose comprehensive cover, which has higher premiums, or pay lower premiums for reduced cover. Premiums can also be reduced by opting to pay some of the costs through an excess.

In addition, private insurance can be taken out to provide rebates on a wide range of out-of-hospital healthcare services that are not covered by Medicare. These services may include dentistry; podiatry; occupational, speech and eye therapy; and physiotherapy, as well as aids and appliances such as glasses and contact lenses. Individuals can purchase extras cover on its own or with hospital cover. Again, the amount and type of cover determines exactly what services are covered and the amount of money that is paid.

Nearly all services are covered only to a limited extent, and there are limits that may apply for each service or per year, while some services may not be covered at all.

Private health insurance now covers medical treatments that substitute for or prevent hospitalisation. Separate private health insurance may also be taken out to cover ambulance services in Victoria, where ambulance travel is not a free service and can be very expensive if the patient has to pay for it out of their own pocket.

The advantages of private health insurance to both individuals and the Australian healthcare system include:

- enabling Australians to access private hospital care
- helping the government to address increasing costs of Medicare
- enabling individuals to access a wider range of services than are covered by Medicare (if the individual has purchased an insurance policy with extras)
- providing shorter waiting times for some procedures
- giving patients a choice of doctor in a public or private hospital.

Some disadvantages of private health insurance include the high cost for individuals and families; out-of-pocket costs for some services in some policies; the qualifying or waiting period for some procedures; and the feeling that people are paying for services they don't use.

DISCUSS

Discuss why some people may benefit more than others from having private health insurance.

Hospital cover tiers

From 2019, a new system was introduced to make private health insurance policies easier for individuals to understand. Previously, insurers named their various policies themselves, and these names reflected the level of cover that was provided. Policies included such names as 'top', 'mid', 'essential' and 'basic' and each insurer

could include their own choice of services as part of each level of cover. For example, individuals may have moved from a policy with mid hospital cover at one insurance company, to a policy with mid hospital cover at a different insurance company, and found that they were not covered for the same treatment services. Now, all hospital insurance policies must be classified as either gold, silver, bronze or basic. The various tiers are based on the inclusion of standard categories – such as ear, nose and throat, or assisted reproductive services – that must include particular treatments. If a health cover tier includes a category of treatment, then all services that are included in that category must be covered, not just those determined by individual private health insurance companies.

Private health insurance incentive schemes

As a result of the declining number of people taking out or renewing private health insurance, and the extra pressure this places on the public health system, the federal government introduced and updated a number of incentive schemes through the *Fairer Private Health Insurance Incentives Act 2012* (Cth). The purpose of these schemes is to reduce the cost of private health insurance to make it more affordable and also to lighten the load on public hospitals.

Private health insurance rebate

In 1999, the Australian Government introduced the Private Health Insurance Rebate Scheme. Under this scheme, most Australians with private health insurance receive a rebate from the government to help cover the cost of their premiums. Australians who have private health insurance can opt to pay a reduced premium and the government pays the balance or they can pay the total and the claim the rebate via their tax return. This rebate is means tested, which means it is reduced or no rebate is paid if individuals earn more than a certain amount. Singles aged under 65 who earn $90 000 or less and families who earn $180 000 or less receive a 25.059 per cent rebate; however, those who earn more receive a smaller rebate. For example, singles aged under 65 who earn between $105 001 and $140 000 receive only an 8.352 per cent rebate and those earning over $140 001 do not receive any rebate. The amount of rebate may also vary depending on age.

Single parents and couples (including de facto couples) are subject to family tiers; for families with children, the thresholds are increased by $1500 for each child after the first. These thresholds change annually on 1 April.

Medicare levy surcharge

As discussed earlier in this chapter, from 1984 the government introduced a Medicare levy that is currently set at 2 per cent of taxable income to assist in covering the cost of Medicare services. Since 1997, an additional surcharge between 1 to 1.5 per cent has been charged for higher-income earners who do not have private hospital health insurance.

TABLE 11.1 Private health insurance rebates, 1 April 2019 to 31 March 2021

	BASE TIER	TIER 1	TIER 2	TIER 3
Single income	< $90 000	$90 001–105 000	$105 001–140 000	> $140 001
Family's income	<$180 000	$180 001–210 000	$210 001–$280 000	> $280 000
Rebates (%)				
Aged under 65	25.059	16.706	8.352	0
Aged 65–69	29.236	20.883	12.529	0
Aged 70 or over	33.413	25.059	16.706	0
Medicare Levy Surcharge (% of income)				
All ages	0.0	1.0	1.25	1.5

This surcharge is another measure designed to encourage people to retain or take up private health insurance and reduce the demand on the public Medicare system. The surcharge was amended in July 2012 and currently includes three tiers of surcharge. The surcharge is calculated at a rate of between 1 to 1.5 per cent of annual income, depending on annual earning and is in addition to the 2 per cent Medicare levy. This means that an individual who earns between $105 001 and $140 000 (or $210 001–$280 000 for families) is in tier 2, and has to pay a surcharge of 1.25 per cent of their income if they do not have suitable private hospital cover.

This is equal to an individual in tier 2 paying a surcharge of up to $2100, which may be more than the cost of private hospital insurance for a single person, especially after they deduct the rebate of 8.352 per cent offered under the private health insurance rebate scheme.

Lifetime health cover

The government also implemented the lifetime coverage scheme in July 2000 to encourage people with private health insurance to continue their cover throughout their lifetime. Under this scheme, anyone who does not have private hospital insurance with a registered health fund in Australia before 1 July following their thirty-first birthday – and then decides to take out cover later in life – will pay an additional 2 per cent loading on their premium for each year of age over 30 when they join, with a maximum loading of 70 per cent. This means that if you take out private hospital insurance at age 45, you will pay an additional 30 per cent more each year than someone who first took out hospital cover before they turned 30. Those people who already had private insurance by July 2000, regardless of the age they were when they joined, are exempt from the loading, as are those who were aged 65 years or more in July 1999. Changes to the lifetime health cover scheme in 2006 mean that anyone who has retained their private health insurance for 10 continuous years becomes exempt from the loading. Changes to this scheme, which were implemented in 2013, mean that for Australians who pay the Lifetime Health Cover loading, the Private Health Insurance Rebate does not apply to the loading component of their premium. They are still able to receive the rebate for the standard cost of their private hospital premium.

Age-based discount

Since 2019, insurers now have the option to offer young people who are aged between 18–29 years a discount of up to 10 per cent from their private health insurance hospital premiums. The same discount applies until they turn 41, when it reduces by 2 per cent per year until it reaches zero. The discount is 2 per cent for each year that a person is aged under 30, up to a maximum of 10 per cent. For example, a person taking private health insurance out for the first time at the age of 28 might be offered a 4 percent discount, while a person taking out a policy at the age of 21 would be offered a 10 per cent discount. This incentive aims to make private health insurance more attractive to young people who are less likely to use it and might otherwise not see the benefit.

Funding of private health insurance

Private health insurance generally is funded by members through the premiums they pay. The cost of private hospital treatment is covered by Medicare (which pays 75 per cent of the schedule fee), private health insurance companies (which pay the gap between what Medicare pays and the balance of the schedule fee) and individuals (who pay the difference between what the hospital charges and the schedule fee as an out-of-pocket expense).

Changes to the private health insurance rebate thresholds have reduced the funding from the Australian Government through the Private Health Insurance Rebate Scheme.

Private health insurance funds provided $15.9 billion of total health expenditure in 2016–17, most of which ($7.8 billion) was for private hospital services.

NATURAL THERAPIES

Since 1 April 2019, private health insurers have no longer been able to offer benefits for some natural therapies as part of a health insurance policy. The affected natural therapies are Alexander technique, aromatherapy, Bowen therapy, Buteyko, Feldenkrais, western herbalism, homeopathy, iridology, kinesiology, naturopathy, pilates, reflexology, Rolfing, shiatsu, tai chi and yoga. A review of natural therapies chaired by the former Commonwealth Chief Medical Officer found there is no clear, scientific evidence that these natural therapies are effective.

FIGURE 11.8 Natural therapies are no longer part of private health insurance benefits.

SOURCE: Australian Government Department of Health, 2019

ACTIVITY 11.4: EXPLORING PRIVATE HEALTH INSURANCE

Visit the federal government's Private Health website. Select 'health insurers', then select one of the private health insurers listed on this page. Locate answers to the following.

1 Hospital cover:

- **a** State the cost for gold singles hospital cover (adult).
- **b** State the cost for bronze singles hospital cover (adult).
- **c** Identify the similarities and differences in services that each of these policies cover.
- **d** Identify some of the waiting periods that may apply.
- **e** State whether an excess applies to the two policies.

2 Extras cover:

- **a** Outline the cost of extras cover (general treatment) for singles (adult).
- **b** Identify any waiting times that apply.
- **c** Identify the percentage of the cost of each service that is covered. Are there limits?

3 Now that you are aware of the services that are covered by Medicare and private health insurance, and those that are not, discuss whether you feel private health insurance is a worthwhile investment in your own health.

4 Discuss whether government incentives will influence your decision to take out or remain in a private health insurance fund in the future.

ACTIVITY 11.5: PRIVATE HEALTH INSURANCE REVIEW

1 Explain what private health insurance is.
2 Outline what can be covered by private health insurance that isn't covered by Medicare.
3 Outline the advantages and disadvantages of having private health insurance.
4 Explain how private health insurance is funded.
5 Describe the four private health insurance incentive schemes.
6 Explain why the federal government has implemented the private health insurance incentive schemes.

FIGURE 11.9 Medicare pays 75 per cent of the cost of a treatment in a private hospital; either the health insurance provider or the patient pays the remainder.

11.2 SERVICES AVAILABLE IN THE LOCAL COMMUNITY TO SUPPORT HEALTH AND WELLBEING

A wide range of health services are available in Victoria to meet the health needs of individuals. These include traditional medical or health services, community health centres, online services, telephone counselling services, mental health services, preventative health services and many other local programs.

Traditional medical or health services

Traditional medical and health services are services such as public hospitals, private hospitals, GPs, dental, obstetric, optometry, chiropractic, radiation, physiotherapy, podiatry, psychology and pharmacy services. These are often accessed directly by individuals, either with or without a referral from a general practitioner (depending on the service type).

These services support a range of dimensions of health and wellbeing, depending on the specific service. For example, dental services are able to promote physical health and wellbeing by ensuring that teeth remain healthy and free from cavities, and also educate individuals about how to care for their teeth to prevent further damage. Other services, such as psychology services, can promote mental, emotional and spiritual health and wellbeing, again depending on the needs of the individual and the type of service offered.

Community health centres

Community health centres are designed to meet the specific health needs of the local community. They generally offer a range of services and supports, and operate a range of programs. Community health centres are based in local municipalities or regions in both metropolitan and rural areas. They often provide links to other health services or programs such as My Aged Care or the National Disability Insurance Scheme (NDIS). Community health centres in Victoria include:

- Hesse Rural Health Service – Winchelsea
- Bellarine Community Health – Point Lonsdale
- Colac Area Health – Colac
- Grampians Community Health – Stawell
- Benalla Health – Benalla
- Albury Wodonga Health – Wodonga
- Northern District Community Health Service – Kerang
- Ballarat Health Service – Ballarat
- Sunbury Community Health Centre – Sunbury
- Nillumbik Health – Eltham
- Merri Community Health Services – Brunswick
- Monash Link Community Health Service Ltd Glen Waverley
- Knox Social and Community Health EACH – Ferntree Gully
- cohealth – Footscray.

DISCUSS

Discuss how community run programs – such as 'mums and bubs' fitness classes – can promote the health and wellbeing of individuals.

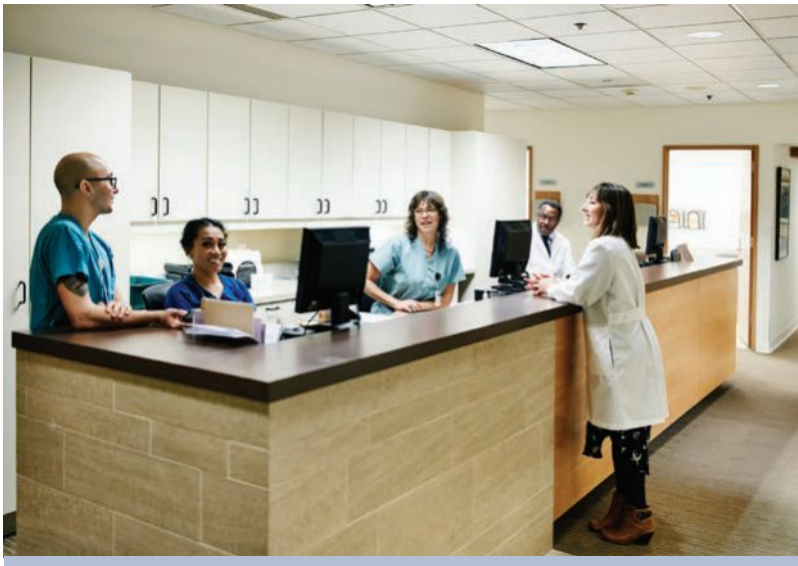


FIGURE 11.10 Community health centres provide a range of services and programs.

ACTIVITY 11.6: HEALTHABILITY – NILLUMBIK COMMUNITY HEALTH SERVICE

healthAbility is an operating division of Nillumbik Community Health Service and is an independent, community health organisation that has been providing support and care to people for over 40 years.

FIGURE 11.11 healthAbility is an independent community health organisation.

This includes supporting people with disability, older people in our community, people with complex and chronic conditions, families and youth. We exist to improve the health and wellbeing of people across all ages and abilities and to inspire people and communities to be healthier and more inclusive.

We are a not-for-profit organisation, which means surplus funds are reinvested back into healthAbility so we can continue to support the community and contribute positively to society.

Enjoying good health is not just about the absence of disease or being physically healthy. It is about the wellbeing of the whole person, within their family, work and social environments. healthAbility is in the unique position of offering a holistic and integrated care approach to our clients, including oral health services from Healthy Bite Dental.

As an NDIS service provider, My Aged Care provider and Community Health Organisation with the ability to process Medicare Benefits Schedule (MBS) and private health insurance claims, we make sure you get the best care and support you need to live well.

Services offered at healthAbility include:

- health and wellbeing services, such as occupational therapy, physiotherapy, speech therapy, podiatry, counselling, diabetes education, exercise physiology, neuropsychology, dietetics and community nursing
- in-home and community support, such as social support groups, social support for individuals, domestic assistance, respite, home maintenance, meal preparation, personal support and transport
- youth support
- family support
- carers' support
- dental services
- community programs such as legal advice, a needle exchange program and emergency financial relief.

Groups and programs offered by healthAbility include:

- education and support – Keeping Calm, Nillumbik Diabetes Support, Taking Care of Yourself after a Harmful Relationship, Learn to Relax, Healthy Eating and Lifestyle (HEAL), supermarket tours, and a Parkinson's support group
- exercise – Strong People Stay Young, Let's Get Started Walking, Cardiac and Pulmonary Support, tai chi, Healthy Eating and Lifestyle (HEAL) and Water Exercise for Health
- family and youth – Tuning into Kids™, developmental programs, from Harm to Calm, Tuning into Teens™, Bringing Up Great Kids, Parenting with Less Stress
- health promotion – Preventing Family Violence, Eat Well for Health, Nillumbik Healthy Schools.

SOURCE: healthAbility

FIGURE 11.12 How healthAbility promotes health and wellbeing

By visiting their website, investigate one of these community health centres:

- cohealth
- Merri Health
- Bellarine Community Health.

Investigate the services and programs the centre offers. Complete a mindmap like the one in Figure 11.12 to explain how this community health centre aims to promote health and wellbeing.

Online services

Thousands of online services are available that individuals can access to promote their health and wellbeing or that can put them in touch with other services to assist them. These services range from online support and symptom checkers to online training courses and information services.

A few of these online services based in Australia are:

- **My Health Record** – an Australian Government initiative providing an online summary of an individual's health information. This information can be updated and viewed by a range of healthcare providers to help with continuity of care and the provision of correct treatment. The benefits include that the health information can be accessed when the individual moves between doctors or even interstate, or in the event of an accident after which an individual is unable to communicate for themselves
- **GP2U** – offers online GP consultations that can provide specialist referrals, prescriptions and medical certificates
- **HealthDirect** – a government-supported website that contains information on a wide range of health topics. It also provides detailed information on medications and health services. A symptom checker allows users to identify the symptoms they are experiencing and provides a list of possible conditions. The program collects basic data such as age, gender and postcode before asking a series of detailed questions about symptoms, then provides a recommendation to see a general practitioner or go to a hospital.

THE BRAVE PROGRAM

The Brave Program is an online program for children and teenagers that has been running in Australia for over 13 years. Brave is an evidence-based cognitive behavioural therapy (CBT) program that provides teenagers and their parents with information and skills to help cope with worries and anxiety. The program was developed by researchers from the University of Queensland, Griffith University, and the University of Southern Queensland. It has been specifically designed to teach young people the skills they need to reduce anxiety and to cope with stressful situations.

FIGURE 11.13 The Brave Program helps teenagers and their parents.

The HealthDirect service finder also allows individuals to search for local GPs, hospitals, dentists and allied health practitioners. HealthDirect also has a 24-hour helpline phone service staffed by registered nurses, who can connect you to an after-hours general practitioner if needed

- **ReachOut** – an online initiative offering information, resources and support to help young people improve their understanding of mental health, build resilience, and increase coping skills and help-seeking behaviour
- **MoodGYM** – aims to help young people identify and overcome problem emotions and show them how to develop good coping skills to promote positive mental health. It is a fun and free interactive program that includes five modules.

FIGURE 11.14 Telephone counselling services increase a person's access to services that can help them during a difficult period.

DISCUSS

Discuss how online and telephone health services can improve access to healthcare for individuals.

Telephone counselling services

Telephone counselling services are another type of community health service that can help to promote health and wellbeing. These services often are available 24 hours a day, seven days a week. Telephone counselling services can offer advice, support and information to help people with a range of issues. They can also refer individuals to other more specialised services if necessary. Some services are specific to one issue, such as mental health, or to a specific population group, such as the Maternal and Child Health Line, while others offer a much more general service such as Nurse on Call. Advantages of telephone counselling are that it can often be anonymous, suitable qualified health professionals generally take the calls, it is usually free and people often feel more comfortable discussing personal issues without it being a face-to-face situation.

The following are some reputable telephone counselling services:

- **Nurse on Call** (1300 606 024) – this service is available 24 hours a day, seven days a week; it provides professional health advice from a registered nurse
- **Kids Help Line** (1800 551 800) – a free, private and confidential telephone and online counselling service specifically for children and young people aged between 5–25 years
- **Maternal and Child Health (MCH) Line** (13 22 29) – a 24 hours a day, seven days a week state-wide (Victorian) telephone service that provides support and advice from maternal and child health nurses on a range of issues such as child health, breastfeeding, nutrition and parenting for Victorian families with children from birth to school age

- **Lifeline** (13 11 14) – a national charity that provides 24-hour-a-day crisis support and suicide-prevention services for all Australians experiencing a personal crisis
- **QLife** (1800 184 527) – this service is available from 3 pm to midnight daily; it is Australia's first national counselling and referral service for Lesbian Gay Bi-sexual Transgender Intersex (LGBTI) people; QLife is a nationwide, early intervention, peer supported telephone service for people of all ages who are experiencing poor mental health, psychological distress, social isolation, discrimination, experiences of being misgendered, and/or other social determinants that impact on their health and wellbeing
- **SANE Australia** (1800 18 7263) – provides information about mental illness, treatments, where to go for support and help for carers
- **Medicines Line** (1300 633 424) – a telephone service providing consumers with information on prescription, over-the-counter and complementary (herbal, 'natural', vitamin and mineral) medicines
- **MensLine Australia** (1300 78 99 78) – a telephone and online support, information and referral service helping men to deal with relationship problems in a practical and effective way
- **Carers Australia** (1800 242 636) – a short-term counselling, and emotional and psychological support service for carers and their families in each state and territory
- **Headspace** (1800 650 890) – a free online and telephone service that supports young people aged between 12–25 and their families going through a tough time.

ACTIVITY 11.7: TELEPHONE COUNSELLING SERVICES

Select one of the telephone counselling services listed above.

1 Research this telephone counselling service and identify:
   - **a** examples of the type of service it offers
   - **b** details of who takes the calls
   - **c** its operating hours
   - **d** issues it has been established to address.
2 Explain how this service aims to promote health and wellbeing, making specific links to the dimensions of health.
3 Outline the strengths and weaknesses of using a telephone counselling service.

Mental health services

Mental health services have been designed specifically to deal with the complex and varied issues relating to mental health. Some of these services target a particular age or cultural group, while others aim to meet the needs of the broader population:

- **Black Dog Institute** – dedicated to understanding, preventing and treating mental illness through developing innovations in science, medicine, education and public policy. The Institute is focused on creating better health outcomes for people with mental illness through translating the knowledge gained from research
- **Headspace** – the National Youth Mental Health Foundation (NYMHF) provides early intervention mental health services and works to promote wellbeing in 12–25-year-olds. It provides information, services and access to health professional for young people, their families and friends, which can be accessed via the NYMHF website, Headspace centres or its online counselling service, eheadspace. The NYMHF's work focuses on four key areas: mental health; physical health; work and study support; and alcohol and other drug services
- **Yarn Safe** – a headspace initiative that provides mental health and wellbeing support to Aboriginal and Torres Strait Islander young people and promotes the importance of talking about mental health issues
- **Beyond Blue** – offers a wide range of services and resources, which aim to promote good mental health and wellbeing by creating

FIGURE 11.15 Mental health services provide support to all types of people. Anyone might need support at different times in their life.

change to protect everyone's mental health and wellbeing and improve the lives of individuals, families and communities affected by depression, anxiety and suicide

- **Mind Australia** – a community-managed specialist mental health service provider that supports people dealing with the day-to-day impacts of mental illness, as well as their families, friends and carers
- **Just Ask Us** – a program funded by the Australian Government's Department of Health and operated by the Turning Point Alcohol and Drug Centre in Victoria. It was developed to assist tertiary students to find information and seek help for a mental health or alcohol and other drug problem
- **Man Therapy** – a website that provides an online toolkit to enable men to learn more, providing them with strategies designed to protect wellbeing and to guide them to professional treatment if/when they require support
- **thedesk** – aims to support Australian tertiary students and promote mental and physical health and wellbeing. The desk provides resources online, which means that more people can get help to improve their wellbeing and be able to study more effectively. It offers free access to online modules, tools, quizzes and advice
- **Orygen Youth Health (OYH)** – A youth-specific mental health program based in Melbourne that has two main components: a specialised youth mental health clinical service, and an integrated training and communications program
- **SANE Australia** – a national organisation helping all Australians affected by mental illness to lead a better life through support, training and education
- **Mindhealthconnect** – an innovative website dedicated to providing access to trusted, relevant mental healthcare services, online programs and resources.

Preventative health services

A range of government and non-government organisations play a significant role in the Australian healthcare system through the development of a range of health-promotion initiatives. VicHealth is a health-promotion agency that plays a vital role in promoting good health and wellbeing in Victoria.

Other health organisations that have an important role in health promotion and preventative health services include:

- the Heart Foundation
- the Cancer Council
- Diabetes Australia
- Asthma Australia
- Kidsafe
- the Transport Accident Commission
- the National Aboriginal Community Controlled Health Organisation (NACCHO).

ACTIVITY 11.8: PROMOTING MENTAL HEALTH

Watch the video, 'About Beyond Blue' (available at https://cambridge.edu.au/redirect/8888). Visit the Beyond Blue website and the Youth Beyond Blue website.

1 Describe the wide range of services and programs offered by Beyond Blue.

2 Outline some of the strengths and weaknesses of Beyond Blue's initiatives.

3 Explain how Beyond Blue can promote the health and wellbeing of Australians.

ACTIVITY 11.9: LOCAL SERVICES PROMOTING HEALTH AND WELLBEING

Go to Google maps and type in your home or school address. Print the map.

1 On your map, identify all the community services available in your local area that support physical, social, emotional, mental and spiritual dimensions of health and wellbeing. These could include:
   - conventional medical services (hospitals, doctors, dentists)
   - maternal and child health centres
   - community health centres or hubs
   - aged-care facilities
   - sport and recreational facilities
   - places of worship
   - volunteer organisations.

   (Note that not all services appear on the map itself, so you might need to use a search engine to find where these facilities are located in your local area.)
2 Choose a range of facilities that you have identified on your map that promote each of the dimensions of health and wellbeing (five facilities in total). Create an information brochure for people in your local area that includes:
   - the name and address of the facility
   - a description of what services are offered at the facility and whether there are any costs involved
   - a discussion of how each facility impacts an individual's or the community's health and wellbeing.

11.3 OPPORTUNITIES AND CHALLENGES PRESENTED BY DIGITAL MEDIA

Digital media have brought many new opportunities for improving the access to and the effectiveness of healthcare in Australia. For example, health information can be accessed for free from websites; individuals can search for health information anonymously, and information is available all day, every day in a range of languages.

Unfortunately, digital media in healthcare also brings some challenges in relation to the effective use of websites, online practitioners and digital health apps that provide health and wellbeing information. Such challenges might include the risk of misinterpretation of information, difficulty in determining the reliability of information and issues with misdiagnosis.

DISCUSS

An increasing number of wellbeing apps are becoming available. Discuss how effective they are.

TABLE 11.2 Opportunities and challenges of promoting health and wellbeing in digital media

OPPORTUNITIES OF USING DIGITAL MEDIA IN THE PROMOTION OF HEALTH AND WELLBEING INFORMATION	CHALLENGES OF USING DIGITAL MEDIA IN THE PROMOTION OF HEALTH AND WELLBEING INFORMATION
• Often inexpensive • Allow for privacy or anonymity • Often available 24 hours a day, seven days a week • Available when you need the information, without having to wait for appointments • Often available in a range of languages	• Not having face-to-face contact can leave room for misinterpretation of information • Can promote self-diagnosis of patients, which can lead to unnecessary stress • Can be difficult to determine the reliability of information

11.4 FACTORS AFFECTING ACCESS TO HEALTH SERVICES AND INFORMATION

Accessible health services are those that are not only physically accessible, but also economically accessible, acceptable and appropriate. Even though people living in most metropolitan areas in Australia can physically access a wide range of healthcare services, these services are not always accessible in terms of affordability, appropriateness or acceptability.

Knowledge

Knowledge can impact positively on accessing health services and information, as knowing where and how to access services and information is an important first step in being able to access the care people need. Age, language barriers, socioeconomic status and educational levels are just some of the factors that can impact the knowledge an individual has in relation to health services. Knowledge about health services can be important for accessing the right information and care at the right time.

Geographic location

Location can act as a barrier to accessing health services. The location of the services – for example, many large and specialised public health services and hospitals are located in major cities – can be a barrier for people who live in the suburbs or in rural areas.

Where people live can also impact access to health services, because people who live in rural areas may have fewer services available. For example, there may not be the same range of services such as physiotherapy, acupuncture or mental health services in rural areas, or services may have shorter opening hours, making them harder to access. There is also less access to public transport, which may act as a barrier to people accessing the services that are available. Living in remote areas may also mean that people have to travel long distances to other towns or cities to access the particular healthcare service they need. This can lead to people delaying or avoiding accessing the services they need.

FIGURE 11.16 People in remote locations may have a harder time accessing health services than those in metropolitan areas or in larger regional towns.

In contrast, people who live in metropolitan areas generally have access to a wide range of services and medical practitioners who tend to have longer opening hours. This can empower people if they feel they have choice about their own healthcare, which can increase the likelihood of people getting the help they need and ultimately having better health outcomes.

EXTENSION QUESTION 11.1

Use examples from the information below to evaluate the role of the Purple Truck in promoting the health and wellbeing and the health status of Aboriginal and Torres Strait Islander peoples.

FIGURE 11.17 The Purple Truck takes people with dialysis to visit their homes in remote communities.

Cost

While Medicare provides healthcare at little or no cost to all Australians, sometimes health services have out-of-pocket or gap costs (such as some specialist services), while others are not covered at all.

This can act as a barrier to healthcare for many Australians. The additional costs associated with healthcare – such as medication, time off work for healthcare appointments or transport – can add to the financial burden.

The healthcare system in Australia is widely supported by a range of non-profit organisations that work towards preventing illness through undertaking research or providing a range of programs, information or initiatives to promote health and wellbeing.

Also, when healthcare services are free – or if the individual has the financial resources to afford a range of high-quality healthcare and the associated costs of transport and medication – it can mean that individuals are more likely to access healthcare as soon as they have a health concern, which can lead to earlier diagnosis and improved health outcomes.

THE PURPLE TRUCK

For remote communities, there's nothing quite like the sight of the Purple Truck arriving. It means some of their nearest and dearest are coming home. The Purple Truck is a self-contained dialysis unit on wheels. Established in 2012 with the help of Medicines Australia, Papunya Tula Artists and Fresenius, it gives patients with end-stage renal failure the chance to return home for family, cultural or sorry business. With two dialysis chairs, the Purple Truck travels to remote communities, letting patients visit home, confident they'll survive the trip. Featuring the artwork of Papunya Tula artists and dialysis patients, the late Patrick Tjungurrayi and Ningura Napurrula, it's a beautiful thing.

SOURCE: Purple House

Language barriers

Language can act as a barrier to people accessing health services, particularly if English is their second language or they have low literacy skills. Often the process for accessing health services can appear complex, and this can be especially overwhelming for people who have difficulty reading or interpreting written information. People often look up to or respect healthcare professionals and this can make people feel particularly intimidated or embarrassed if they have poor literacy skills or language barriers. This can lead to poor communication from the individual about their symptoms or a lack of understanding.

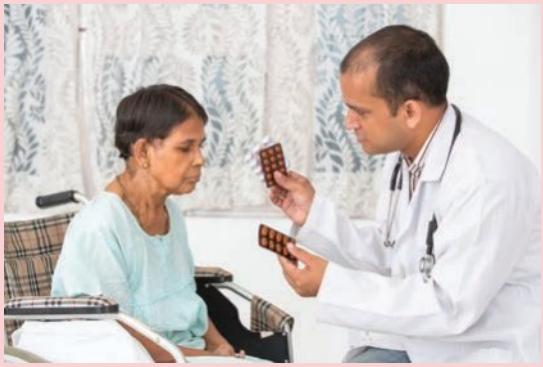
On the other hand, for English-speaking people who have well developed literacy skills, this can be a significant advantage when trying to understand complex health information or systems, as they are more likely to have the confidence and skills to be able to ask questions if needed. They might also be more able to accurately describe symptoms, which can result in improved healthcare and therefore better health outcomes.

Many people from migrant and refugee backgrounds experience barriers to accessing healthcare services, and the health system in general, due to cultural and language barriers. For example, according to Breastscreen Victoria, women who speak a language other than English at home are less likely than English-speaking females to participate in breast screening programs.

Culture

Health service providers need to be culturally sensitive in their assessment, diagnosis and management of illness. Culture can act as a barrier for some people in accessing healthcare, as health services can be inaccessible if providers do not acknowledge and respect cultural factors. For example, some cultures attach different meanings to parts of the body or to some types of illness. This can result in some individuals being less likely to accept some forms of treatment.

DISCUSS



Discuss the potential impact of cultural, religious and language barriers on an individual's health and wellbeing.

Aboriginal and Torres Strait Islander cultures can differ from mainstream Australian culture in relation to views, opinions and beliefs about, and communication practices around, treating illness. There can be a perception that healthcare practitioners have poor attitudes towards or difficulty understanding Aboriginal and Torres Strait Islander cultures, such as the importance of kin and kinship systems and their role in caring for Aboriginal and Torres Strait Islander patients.

Failing to understand and respect these cultural traditions can lead to a lack of respect for, and caution in dealing with, health professionals. For example, the stigma of mental illness is stronger in some cultures and privacy about mental illness is stronger and more important in some cultural groups than others, which can act as a barrier to early and effective access to services.

Religion

Religion can impact how a patient needs to be treated and can also impact the accessibility of some service for some patients. Religion can influence an individual's world view, and can influence their lifestyle and understanding of illness. This can therefore impact issues such as diet and use of medications.

CASE STUDY: CULTURAL FACTORS AFFECTING ACCESS TO HEALTH SERVICES

Allowing a carer of the same gender to be present as much as possible can provide a more positive experience for Aboriginal and Torres Strait Islander clients, and help non-Indigenous health professionals to navigate unfamiliar gender-avoidance behaviours. In one case, an elderly Aboriginal woman from a rural community was flown to Adelaide for eye surgery. Just before the procedure, she was asked to remove her clothes (including underwear) and put on a surgical gown. She could not understand why she would need to remove underwear for eye surgery and became upset. When four male orderlies and nurses then proceeded to try to help her onto a trolley, she became very agitated 'and began to yell at them, to keep them away'. The hospital staff concluded she was 'uncooperative and violent, and they advised that they would cancel the surgery'. At this point, her female Aboriginal carer stepped in and suggested that she take the older lady into a cubicle to change her clothing and then helped her onto the trolley. The older lady consented without further fuss and the eye surgery proceeded normally.

SOURCE: Ware, 2013

1 Using examples from this case study, discuss the impact this type of situation might have on the health and wellbeing of individuals.

2 Identify and explain ways in which the issues identified in the case study could be overcome.

ACTIVITY 11.10: FACTORS AFFECTING ACCESS TO HEALTH SERVICES

Watch the 'Angel Flight signs' commercial (available at https://cambridge.edu.au/redirect/8889).

1 Discuss how geographical location as a factor affecting access to health services can impact an individual's health and wellbeing.

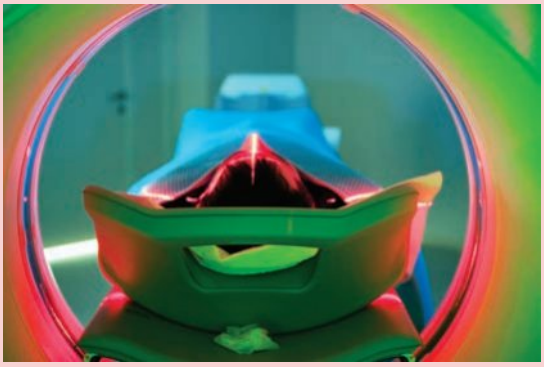
2 Explain how religious and language barriers affecting access to health services and health information can impact an individual's health and wellbeing. Discuss ways these barriers could be overcome.

3 Identify and explain the ways in which the Australian health system works to improve access to healthcare for people from lower socioeconomic backgrounds.

11.5 ISSUES RELATING TO THE USE OF NEW HEALTH PROCEDURES AND TECHNOLOGIES

Advances in health technology can be preventative, promotive, curative and rehabilitative. Medical technology includes a broad range of diagnostic tools and equipment, pharmaceuticals, medical devices and equipment, new medical procedures, and improved knowledge and administrative support systems. Advances and improvements in medical technology cost the Australian Government a significant amount of money and, along with the ageing population, are one of the main reasons for increasing healthcare costs. The fact that advances in medical technology are commonly associated with improved health treatment, and often increase the number of people being treated, make this high cost seem worthwhile.

DISCUSS



Discuss ways in which medical technology can bring about better health outcomes for patients.

There is no doubt that medical technology can improve health and increase life expectancy; however, whether it saves money in the long term is unclear. For example, new drugs to treat cholesterol have fewer side-effects and appear to be more effective. As a result, these drugs are very popular and one of the most common (and expensive) prescription items on the PBS. As so many people are now taking these drugs, it is likely that they have reduced heart disease and strokes; however, whether or not this cost offsets the high costs of developing the new drugs remains unclear.

Examples of medical technology

Medical technology can include a wide range of services, such as diagnostic tools and equipment, pharmaceuticals and medical procedures.

Diagnostic tools and equipment

Diagnostic imaging is the use of x-ray, ultrasound, radioactive isotopes, or magnetic resonance to produce a visual display or representation of structural and/or functional information of the 'inside' of the human body. As with other aspects of medical care, it is not only the technology that is important; having trained medical staff is also vitally important for success. This ensures the production of high quality radiological service with consequent improvement of healthcare service delivery. Diagnostics is crucial in every medical setting and at all levels of heath care. In public health and preventive medicine as well as in curative medicine, effective decisions depend on correct diagnosis.

Examples of technology include:

- **MRI scanning:**

  Magnetic Resonance Imaging (MRI) is a scan used for a medical imaging procedure. It uses a magnetic field and radio waves to take pictures inside the body. It is especially helpful to collect pictures of soft tissue such as organs and muscles that don't show up on x-ray examinations.

- **CT scanning:**

  Computed Tomography (CT) scan makes use of computer-generated combinations of many x-ray images taken from different angles to produce cross-sectional images of areas of a scanned part of the body, allowing the user to see inside without cutting.

- genetic screening for disease.

Pharmaceuticals

New pharmaceuticals and vaccines are developed every year in Australia and globally. Some are brand-new medications and vaccines to treat or prevent conditions when previously there may have been no options, while others are new or improved drugs that are more effective or have fewer side-effects. Some recent developments include:

- ACE inhibitors – an angiotensin-converting-enzyme inhibitor (ACE inhibitor) is a pharmaceutical drug used for the treatment of hypertension
- Tamoxifen – a medication that is used to prevent and treat breast cancer
- statins to reduce cholesterol
- SSRI anti-depressants – selective serotonin reuptake inhibitors, which are antidepressants used to treat depression; serotonin is one of the brain chemicals or neurotransmitters that relay signals between the cells in your brain.

SSRIs prevent serotonin from going back into the brain cells (that is, the SSRIs inhibit the reuptake of serotonin); this results in a higher level of serotonin being available for transmitting signals, and it is this increase in serotonin that is thought to improve the symptoms of depression

- advances in vaccines, such as the cervical cancer vaccine.

Medical procedures

Medical procedures are a rapidly developing area with the help of technology. Some of the developments in recent times sound like they are from a sci-fi movie, and it is hard to believe that technology has come so far. Some examples include:

- organ transplants – the transfer of human cells, tissues or organs from a donor to a recipient with the aim of restoring function(s) in the body
- hip and knee replacements
- laparoscopic surgery – also known as keyhole surgery, a surgical technique by which operations are performed through small incisions (usually less than 1.5 centimetres), often at a different site than the area being operated on

FIGURE 11.18 In some cases, technology has reduced patients' recovery times.

- phaco cataract removal – phacoemulsification is a modern cataract surgery
- robotic surgery
- development of artificial organs
- gene therapy – using or changing genes in order to stop or prevent a disease
- tissue engineering such as spray-on skin
- reproductive technology such as IVF.

Future advances in knowledge and understanding in areas of the human genome, xenotransplantation, nanomedicine and stem cells are set to lead to more technological advances in the future. Xenotransplantation is the transfer of cells, tissues or organs from a donor of a different species to a recipient with the aim of restoring function(s) in the body.

Other than improvements in health and life expectancy, other advantages of medical technology may include improved availability of treatments, a wider range of alternative treatment options, earlier diagnosis of disease, more common and more accurate diagnosis and therefore earlier and more specific treatment. New technology may lead to increased survival rates from diseases such as cancer, a reduction in comorbidity when diseases like diabetes are controlled and reduced reliance on pharmaceuticals. It may also reduce treatment costs when illness is detected early and provide additional employment opportunities.

Some of the obvious limitations include cost, equity regarding availability, the fact that the advances are often driven by the pharmaceutical industry and technology companies rather than the healthcare industry, and ethical considerations.

Issues with medical technology

When it comes to using new health procedures or medical technologies, a number of issues require consideration including ethics, equity of access, privacy, invasiveness and freedom of choice relating to the use of the new health procedures and technology.

DISCUSS

Discuss how morals and ethics impact medical treatments. What about culture and religion?

Ethics

When deciding on the ethics of a particular medical technology, individuals need to draw on their morals (their beliefs about what is right and wrong) and consider who will be affected by the technology as well as how they themselves will be affected (risks versus advantages). In Australian society, people from various backgrounds have different views on complex issues surrounding the use of medical technologies. These values might be influenced by an individual's morality and values, their culture, religion, personal views and family experiences. They can also be influenced by how much knowledge they have on the issue and their understanding of it.

When new technologies are developed, there is always the opportunity for them to be misused. Just because we have the technology to achieve new things, it is not always necessarily ethical to use it. For example, in the case of 3D printing of body parts, would it be acceptable to print newer and stronger bones for athletes? Or should this technology only be used to treat illness?

In the case of genetic testing, there are some very complex ethical dilemmas, such as who should have access to the technology and the results. Currently, these results are confidential; however, family members, employers and insurance companies may want access to them. This raises an ethical dilemma about whether a person who has been tested is obligated to inform others. In relation to pre-implantation genetic diagnosis, the issue is raised of whether individuals should be able to select embryos that are not carrying the disease being tested for, but also those that carry traits such as being a particular sex or having a certain eye colour.

ACTIVITY 11.11: GENETICS AND ETHICS

Genetics and ethics

Four basic principles that are commonly applied by the medical profession in ethical dilemmas can also provide a useful framework for students to analyse issues:

- **beneficence** – a duty to do more good than harm; benefits can be physical, psychological, economic or social; ask yourself: who will benefit from this technology and in what way?
- **non-maleficence** – the duty not to cause harm; harm can be physical, psychological, economic or social; ask yourself: who might be harmed by this technology and how can this be minimised?
- **individual rights** – respect for individuals' autonomy; this refers to their right to be their own person and choose their own source of action; this involves privacy, informed consent and confidentiality (genetic information is sensitive and access should be limited to those authorised to receive it); ask yourself: are the individual rights of all individuals considered and respected?

- **justice and equity** – fair, equitable and appropriate treatment for all, especially those who are most vulnerable; ask yourself: are the interests of all in the community considered and potential discrimination prevented?

These principles do not provide hard and fast rules by which to operate.

1 When determining the ethics of medical procedures, it may help to keep these four principles in mind. To do this, ask yourself:
   - **a** Who is affected (individuals, family or the wider community)?
   - **b** How are they affected?

ACTIVITY 11.12: ETHICAL QUESTIONS

Watch Adam Wishart's documentary, '23 week babies: The price of life' (available at https://cambridge.edu.au/redirect/8890).

1 In small groups, discuss the ethics surrounding the main issues raised in the documentary.
2 In your small groups, consider and debate the following ethical statements regarding the use of medical technologies:
   - **a** People who are not registered as organ donors should not be able to receive an organ donation if needed.
   - **b** All Australians should be registered as organ donors unless they remove their name from the register.
   - **c** Sperm donations used for IVF should be identified with the donor's name. The individuals created using donor sperm through IVF should have the right to find out the name of their biological father.
   - **d** Even though there is a shortage of registered organ donors in Australia, we should not consider using organs, cells and tissues from animals.
   - **e** Technology that has been shown to delay ageing in mice should not be tested on animals due to the impact it would have on over-population and the pressure it could place on environmental and economic resources.

CASE STUDY: A HYPOTHETICAL SCENARIO

Bill is a healthy 35-year-old man. His wife, Molly, is 37. After a number of fertility treatments did not assist them in conceiving, they have been told that their only option to have children is through an IVF program. Because Molly is over 35, they have also chosen to have their embryo tested for genetic diseases before implantation. The embryo is found to be free from genetic defects, but this testing reveals that the child is a boy who will be only 160 cm tall.

Bill has heard of a new gene therapy that has been developed to increase height as a treatment for dwarfism. The treatment involves inserting the 'H' gene into the fertilised egg (germline gene therapy). There is a very small chance (one in a million) of creating a break in the DNA (mutation) and that the child will develop cancer. Bill and Molly ask their doctor

to insert the 'H' gene into the fertilised egg. They are both of the opinion that taller people have more options open to them and have a general advantage in life, especially in sports like football and basketball. Bill himself was a keen basketball player, but always felt that he could have excelled in the sport if he had been taller. The height of the child is expected to increase by 20–30 cm if the gene is inserted.

1 Referring to the information in this case study as a starting point, debate the following topic: 'Gene therapy should be allowed to be used to enhance an individual's physical characteristics.'

TABLE 11.3 Arguments for and against cloning

ARGUMENTS FOR CLONING	ARGUMENTS AGAINST CLONING
The technology is there, and therefore we should make use of it.	It is not known whether the technology is safe.
It would enable single people, infertile couples and same-sex couples to have a genetically related child.	Human life should not be experimented with.
Clones are natural in the case of twins.	It is expensive and money could be better spent on healthcare.
It can enable grieving parents to replace a child who has died.	It is not natural.

Equity of access to medical technologies

Equity of access to medical technologies is more than about ensuring that all people have access to the services they need; it is about ensuring that those who are most in need get extra help to reduce the inequity they face. For example, in the case of the PBS, all people with illness who are eligible for Medicare can access some prescription medications at a subsidised cost, which is an example of equality. The PBS takes this one step further to promote equity by implementing the PBS Safety Net to protect those who require more medications from the higher cost of medication. When looking again at the issue of 3D printing of bones, there are some questions that need to be asked to evaluate the equity of this technology, such as whether this medical technology will be available to everyone, especially those who are most in need, or whether it will only be available to those who can afford it.

DISCUSS

Discuss the various reasons why some people have better access to health services than others.

Privacy

Having one's privacy respected is an important issue relating to healthcare, and is a fundamental human right recognised in the United Nations Declaration of Human Rights. Privacy underpins human dignity, and there are four main facets of privacy:

- **information privacy** – this is about developing rules that protect the collection and handling of personal data, such as medical records

- **bodily privacy** – this is about protecting people against invasive or inappropriate procedures
- **privacy of communications** – this is about protecting the privacy of mail, telephones, email and other forms of communication
- **territorial privacy** – this is about protecting people in their environment, such as preventing intrusion into the home or other environments such as the workplace.

It is essential when new medical technologies are introduced that the privacy of patients is respected.

Invasiveness

When referring to medical technology or procedures, 'invasiveness' refers to invading the body, such as operating on a body or examining inside of the body. People have the right to have their privacy and dignity respected. New technologies should provide consideration regarding how invasive the procedure is going to be and weigh this up against the potential benefits.

Freedom of choice

One of the rights identified in the Australian Charter of Healthcare Rights in Victoria is participation. This is a right to be included in decisions and to make choices about your healthcare. It is important that, with any new technology, people have all the relevant information about the risks and benefits of the procedure to enable them to make informed choices about their own healthcare. Having a choice about your healthcare is a significant determinant in people having a positive perception of their own health.

ACTIVITY 11.13: ISSUES RELATING TO THE USE OF NEW TECHNOLOGY AND HEALTH SERVICES

Choose one of the following health procedures or technology:

- MRI scanning
- IVF
- robotic surgery
- spray-on skin
- laparoscopic surgery
- organ transplants.

1 Investigate your chosen procedure or technology and produce a written report including the following points:

a Briefly describe your chosen health procedure or technology including its purpose and the process involved.

b Explore the ethical concerns potentially raised by your chosen health procedure or technology.

c Discuss any privacy concerns surrounding your chosen health procedure or technology.

d Is this health procedure or technology invasive? Is it more or less invasive than traditional procedures? Discuss.

Two of the rights in the Australian Charter of Healthcare Rights in Victoria are:

- the right to be included in decisions and to make choices about your healthcare
- access to health care.

e Discuss the patient's freedom of choice associated with the use of your chosen health procedure or technology.

f Does everybody have equal access to your chosen health procedure or technology? Discuss.

11.6 RIGHTS AND RESPONSIBILITIES OF ACCESS TO HEALTH SERVICES

According to the *Health Complaints Act 2016* (Vic), every Victorian has the right to feel safe when they access health care. They have the right to health services that:

- are accessible
- are safe and high quality
- provide their services with appropriate care and attention
- provide adequate and clear information about treatments, costs and other options
- apply an inclusive approach with consumers when making decisions about health care
- respect the privacy and confidentiality of personal information
- ensure comments or complaints about the service can be made easily and that any comments or complaints are addressed.

TABLE 11.4 Patient rights in the Victorian healthcare system according to the Australian Charter of Healthcare Rights

PRINCIPLE	PATIENTS' RIGHTS	WHAT THIS MEANS
Access	All patients have a right to health care.	Patients can access services to address their healthcare needs.
Safety	All patients have a right to receive safe and high-quality health care.	Patients receive safe and high-quality health services, provided with professional care, skill and competence.
Respect	All patients have a right to be shown respect, dignity and consideration.	The care provided shows respect to patients and their culture, beliefs, values and personal characteristics.
Communication	All patients have a right to be informed about services, treatment, options and costs clearly and openly.	Patients receive open, timely and appropriate communication about their health care in a way they can understand.
Participation	All patients have a right to be included in decisions and choices about their care.	Patients may join in decisions and choices about their care and about health service planning.
Privacy	All patients have a right to privacy and confidentiality of their personal information.	Each patient's personal privacy is maintained and proper handling of their personal health and other information is assured.

ACTIVITY 11.14: HEALTHCARE RIGHTS

Download the Australian Charter of Healthcare Rights in Victoria and complete the following tasks.

1 Describe each of the rights identified in the Charter.

2 Explain why each of these rights is important.

CODE OF CONDUCT FOR GENERAL HEALTH SERVICES

You should expect safe and ethical healthcare from every health service you use. That's why there is a Code of Conduct for the many health services not regulated by the Australian Health Practitioner Regulation Agency. This code sets the minimum legal standards that all general health service providers in Victoria must comply with. Under this code, the health service provider:

MUST

- ✓ **Provide safe and ethical healthcare**
- ✓ **Obtain consent for treatment**
- ✓ **Take care to protect you from infection**
- ✓ **Minimise harm and act appropriately if something goes wrong**
- ✓ **Report concerns about other practitioners**
- ✓ **Keep appropriate records and comply with privacy laws**
- ✓ **Be covered by insurance**
- ✓ **Display information about the Code of Conduct and making a complaint.**

MUST NOT

- ✗ **Mislead you about their products, services or qualifications**
- ✗ **Put you at risk due to their own physical or mental health problems**
- ✗ **Practice under the influence of drugs or alcohol**
- ✗ **Make false claims about curing serious illnesses such as cancer**
- ✗ **Exploit you financially**
- ✗ **Have an inappropriate relationship with you**
- ✗ **Discourage you from seeking other health care or refuse to cooperate with other practitioners if you do.**

WHAT IF THE CODE IS BREACHED?

If you think your health service provider has breached these standards in any way please contact them if it is reasonable and appropriate to do so, so they can try to resolve the issue. If it is not reasonable or appropriate, or if you are not satisfied with their response, contact the Health Complaints Commissioner (HCC) on 1300 582 113, or via the online complaint form at hcc.vic.gov.au.

WHAT CAN THE HEALTH COMPLAINTS COMMISSIONER DO?

The HCC is an independent and impartial agency that resolves complaints about health services and the handling of health information in Victoria. It can also investigate and warn the public about dangerous health service providers.

WHERE CAN I FIND MORE INFORMATION?

For the full Code of Conduct or more information on making a complaint, visit **hcc.vic.gov.au** or call **1300 582 113** between 9am and 5pm, Monday to Friday.

HEALTH COMPLAINTS COMMISSIONER

FIGURE 11.19 The Code of Conduct for General Health Services

Consumers also have responsibilities when accessing health services, including:

- attending any scheduled appointments or cancelling/rescheduling providers when they can't attend
- providing honest and accurate information about their health
- sharing any change of circumstance with their service provider in order to reduce any risk to their health
- informing health professionals if they decide at any time to change or stop treatment
- being respectful of healthcare staff and other people using services
- taking an active part in their healthcare decisions
- asking questions if they are unsure about anything
- speaking up if and when they are unhappy about the care they are receiving.

There is also a Code of Conduct for General Health Services, which applies to health professionals such as counsellors, massage therapists or dietitians who are not regulated by the Australian Health Practitioner Regulation Agency.

The privacy and confidentiality of personal health information

Confidentiality means keeping information safe and private. Generally, health professionals are required by law to keep patient details confidential. This can be particularly important when dealing with personal health-related information. Health information can include things that are discussed with health professionals, information that health professionals include in files (digital or hard copy), and treatment details.

Exceptions to confidentiality exist to protect patients in the case of a minor who may be at-risk of ending their own life, at-risk of being harmed or is being harmed, or who is at-risk of or is harming someone else. Confidentiality might also be broken for very serious cases, such as legal reasons like a court hearing or other statutory requirements including child protection.

DISCUSS

In most cases, a person's health information is kept confidential. Discuss circumstances where the privacy of information may not be able to be maintained.

11.7 OPTIONS FOR CONSUMER COMPLAINT AND REDRESS

Just as the health system in Australia is complex and involves many service providers, the complaints process can also appear complex. In some cases, this process depends on the type of complaint and who the complaint is being made against.

Health Complaints Commissioner, Victoria

In Victoria, if an individual has a complaint about the health-related treatment they have received, the handling of health-related information or the service provided, they have the right to make a complaint to the office of the Health Complaints Commissioner (HCC). This is an independent and impartial organisation responsible for resolving complaints about health under the *Health Complaints Act 2016* (Vic) and the *Health Records Act 2001* (Vic).

DISCUSS

Discuss the reasons why someone might wish to complain about their health care.

HEALTH RECORDS ACT 2001 (VIC)

The *Health Records Act 2001* (Vic) created a framework to protect the privacy of the health information of individuals. It includes regulations about the collection, storage and handling of health information.

The Act gives individuals a legal right to access their own health information that is contained in records held in Victoria by the private sector and establishes Health Privacy Principles (HPPs) that applies to all health, disability and aged-care related information that is collected and handled in Victoria by the public and private sector. The HPPs relate to all personal information that is collected in the provision of health, mental health, disability, aged care or palliative health care service and to all health related information that is held by other organisations. The aim of the *Health Records Act 2001* (Vic) is to protect patient privacy and promote autonomy, and at the same time ensure the safe, efficient and effective delivery of health service.

SOURCE: Victorian Government, 2001

If Victorians are dissatisfied with their health service provider, they have the right to raise concerns with the provider directly (and the HCC asks that consumers do this before lodging a complaint with them), as speaking directly with the health service provider is often the quickest and easiest way to resolve complaints. If individuals are unable to make the complaint to the health service provider directly, then they can ask HCC for help.

Who can make a complaint?

Anyone can lodge a complaint with the HCC, including health service consumers themselves, a friend or family member of the consumer, a carer, health service staff or volunteers, a concerned community member or a professional organisation. If a complaint is being made on behalf of another person, then permission should be gained from that person prior to lodging the complaint.

While any complaint can be made anonymously, this does limit the ability of the HCC to fully investigate the issue, and means that they are unable to provide updates to the individual about their complaint.

An individual cannot be disadvantaged, disciplined, discriminated against or fired if they make a complaint.

What can complaints be made about?

Complaints can be made against any health service provider in Victoria, and about anyone (including schools, gyms and other non-health service providers) who handles health-related information. Complaints can be made about health service organisations (e.g. public or private hospitals, GP clinics and community health services) or about an individual health practitioner.

The HCC manages complaints related to:

- access to services
- quality and safety
- care and attention
- respect, dignity and consideration
- communication about treatment, options and costs
- the level of involvement in healthcare decisions
- access, privacy and confidentiality of personal health information
- complaint handling by the health service provider.

Complaints can be made about both registered and non-registered practitioners:

- **registered health practitioners:** doctors, dentists, nurses, surgeons, midwives, physiotherapists, chiropractors, psychologists, pharmacists, Chinese herbalists, occupational therapists, optometrists, osteopaths, podiatrists, radiographers, and Aboriginal health practitioners
- **non-registered health practitioners:** audiologists, naturopaths, dietitians, speech pathologists, homeopaths, counsellors, masseurs, alternative therapists, and other providers of general health services.

SOURCE: Health Complaints Commissioner

Possible outcomes of a complaint

The HCC is independent and does not take sides, and it works with the provider and the person lodging the complaint in order to resolve complaints in a fast, fair and effective manner. Some of the possible responses to a complaint (depending on the nature of the complaint) may include:

- an explanation about what happened, and why it happened
- an apology
- access to treatment
- access or amendment to health records
- a refund or compensation
- a change in policy or practice to prevent future problems
- a formal investigation of the health service or provider.

Tips for making a complaint

Making a complaint can seem like an overwhelming, difficult and confusing process, especially as emotions are often involved.

The important thing to remember is that it is usually best to take the complaint to the service provider directly, and it is important that the appropriate process occurs in a respectful manner.

The following is some useful advice to follow in order to ensure that the complaint is addressed fairly:

- If the issue is easy to explain, or caused only a minor inconvenience, try talking directly with the provider.
- If the issue is complex or serious, you should make your complaint in writing.
- Be clear about what went wrong, who was involved and when it happened.
- Be clear about what solution would satisfy you.
- Ask for a response to be supplied in writing.
- The provider should quickly acknowledge that they have received your complaint.
- Once your complaint has been acknowledged, allow the health provider time to address your complaint. The health provider may take up to three months to respond.

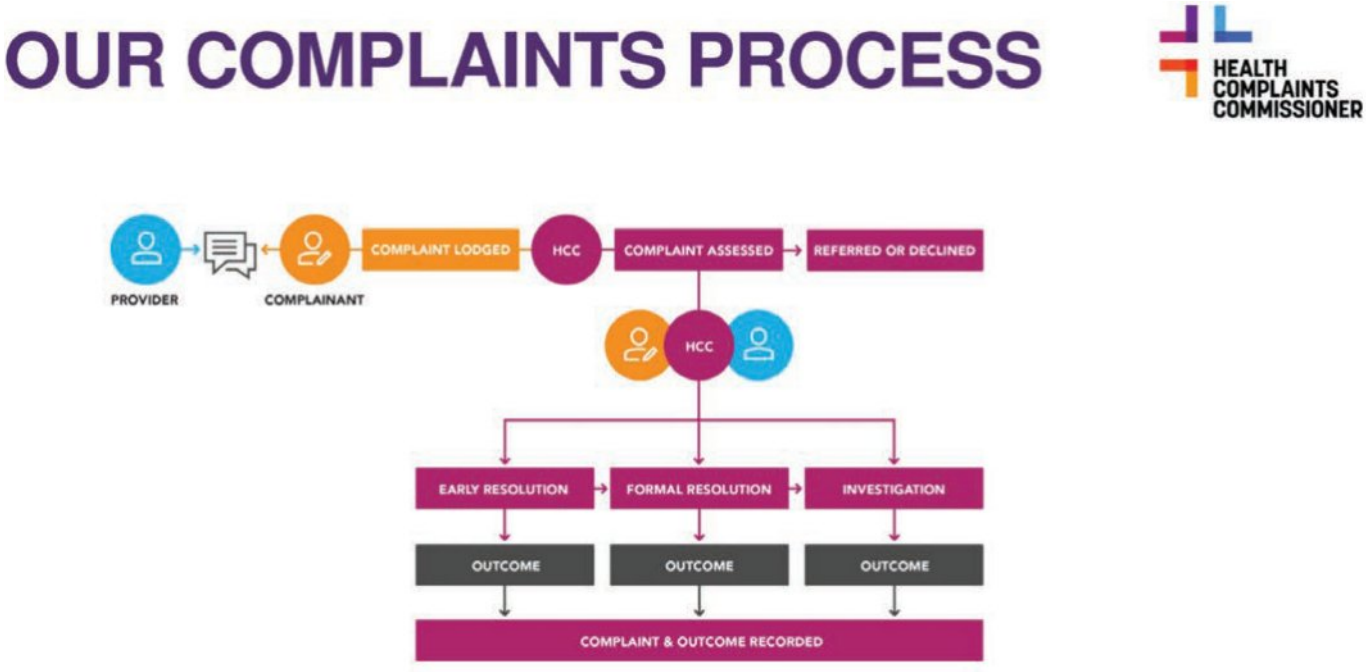


FIGURE 11.20 The Health Complaints Commissioner's complaints process

ACTIVITY 11.15: MAKING A COMPLAINT

Watch the video, 'About complaints' on the website of the Health Complaints Commissioner (HCC). Use the information provided in the video – as well as information from this chapter – to answer the following questions.

1 What is the HCC? How can individuals contact the HCC?

2 Which health services can you lodge a complaint about?

3 Under what circumstances might an individual lodge a complaint?

4 What sort of corrective actions can be sought from the HCC?

5 Outline three advantages of the complaints process provided by the HCC.

Other complaint-resolution bodies

The Victorian Ombudsman

The Ombudsman is an independent impartial officer of the Victorian Parliament, responsible for investigating complaints about administrative actions of Victorian Government agencies, such as the Department of Health and Human Services.

The mission of the Ombudsman is to promote fairness, integrity, respect for human rights and administrative excellence in the Victorian public sector. Any individual can lodge a complaint with the Ombudsman about a matter that affects them, even if they are not a resident of Victoria, providing the agency has been given the opportunity to respond to the complaint.

The Ombudsman has jurisdiction over more than 1000 Victorian public bodies, including government departments, statutory authorities, professional boards, councils, universities and government schools, prisons (including private prisons) and authorised officers on public transport. In addition, the Ombudsman can investigate private organisations contracted to perform functions for government agencies.

The Ombudsman aims to achieve this mission by:

- independently investigating, reviewing and resolving complaints concerning administrative actions of state government departments, local councils and statutory authorities
- reporting the results to complainants and the agencies involved
- reporting to parliament
- improving accountability
- promoting fair and reasonable public administration.

SOURCE: Victorian Ombudsman

Other complaint-resolution bodies

Other complaint-resolution bodies include:

- **Australian Health Practitioner Regulation Agency (AHPRA)** – a national authority established to provide guidance to the medical profession and to protect the community. The board registers and investigates complaints about doctors
- **Disability Services Commissioner** – works to resolve complaints made by or on behalf of people who receive disability services
- **Mental Health Complaints Commissioner** – responds to complaints about Victorian public mental health services.

There are also 14 national regulatory bodies, and many of these national boards also have state boards with which consumers can make contact.

The 14 national boards are:

- Aboriginal and Torres Strait Islander Health Practice Board of Australia
- Chinese Medicine Board of Australia
- Chiropractic Board of Australia
- Dental Board of Australia
- Medical Board of Australia
- Medical Radiation Practice Board of Australia
- Nursing and Midwifery Board of Australia
- Occupational Therapy Board of Australia
- Optometry Board of Australia
- Osteopathy Board of Australia
- Pharmacy Board of Australia
- Physiotherapy Board of Australia
- Podiatry Board of Australia
- Psychology Board of Australia.

ACTIVITY 11.16: MENTAL HEALTH

Watch the Mental Health Complaints Commissioner's video, 'Our role and approach to complaints' on the commissioner's website.

1 Outline what the Mental Health Complaints Commissioner of Victoria does to assist individuals to make complaints.

CHAPTER SUMMARY

- The key aspects of Australia's health system are:
  - **Medicare** – the Australian Government's universal healthcare system
  - the **Pharmaceutical Benefits Scheme (PBS)** – an Australian Government scheme to subsidise the cost of a wide range of prescription medications
  - **private health insurance** – private health insurance is a subscription or policy that provides individuals with different levels of cover for a fee. Private health insurance can provide individuals with access to healthcare services that are not provided by Medicare.
- Various services are available in your local community to support the dimensions of health and wellbeing, these include:
  - traditional medical and health services (e.g. GPs, dentists and hospitals)
  - community health centres
  - online services
  - telephone counselling services (e.g. Lifeline Australia and Kids Helpline)
  - mental health services (e.g. Headspace Australia)
  - preventative health services (e.g. the Cancer Council Victoria and the Heart Foundation).
- The reasons why people have difficulty accessing health services and health information include knowledge, geographic location/distance, cost, language barriers, culture and religion.
- Various opportunities and challenges arise when health services are provided through digital media sources such as websites and apps:
  - **opportunities** – digital media is usually inexpensive, allows for privacy and anonymity, is accessible 24 hours a day, seven days a week, is available when you need the information (without having to wait for appointments), and is often provided in a range of languages
  - **challenges** – not having face-to-face contact with a health professional can leave room for the misinterpretation of information, and can make it difficult to determine the reliability of information. The accessibility of the information can encourage patients to self-diagnose (which can lead to unnecessary stress).
- There are rights and responsibilities that come with accessing and providing health services, including:
  - patients have the right to privacy, confidentiality, respect and safety
  - patients have the right to access health services that are accessible, safe and high quality
  - healthcare providers must supply their services with appropriate care and attention; they must provide adequate and clear information about treatments, costs and other options; providers must apply an inclusive approach with patients when making decisions about health care; providers must respect the privacy and confidentiality of patients' personal information and ensure comments or complaints about the healthcare service can be made easily and that any comments or complaints are addressed
  - patients have the responsibility to attend all scheduled appointments or to cancel/reschedule appointments when they can't attend; patients must provide honest and accurate information about their health, and share any change of circumstance with their service provider to reduce any risk to their health; patients should inform health professionals if they decide to change or stop treatment; patients should be respectful of healthcare staff and other patients; patients should take an active part in their healthcare

decisions and ask questions if they are unsure about anything and speak up if and when they are unhappy about the care they are receiving.

- New health procedures and technologies include a broad range of diagnostic tools and equipment, pharmaceuticals, medical devices and equipment, medical procedures, and improved knowledge and administrative support systems. The issues about the use of these new health procedures and technologies relate to ethics, privacy, invasiveness, freedom of choice, and equity of access.
- Consumers (patients) of health services can complain about, and receive compensation for, unsatisfactory health services. Complaints can be made to the Office of the Health Complaints Commissioner (HCC), which is an independent and impartial body that is responsible for resolving complaints about the provision of health care. The HCC has the power to do so under the *Health Complaints Act 2016* (Vic) and the *Health Records Act 2001* (Vic).

KEY QUESTIONS

SUMMARY QUESTIONS

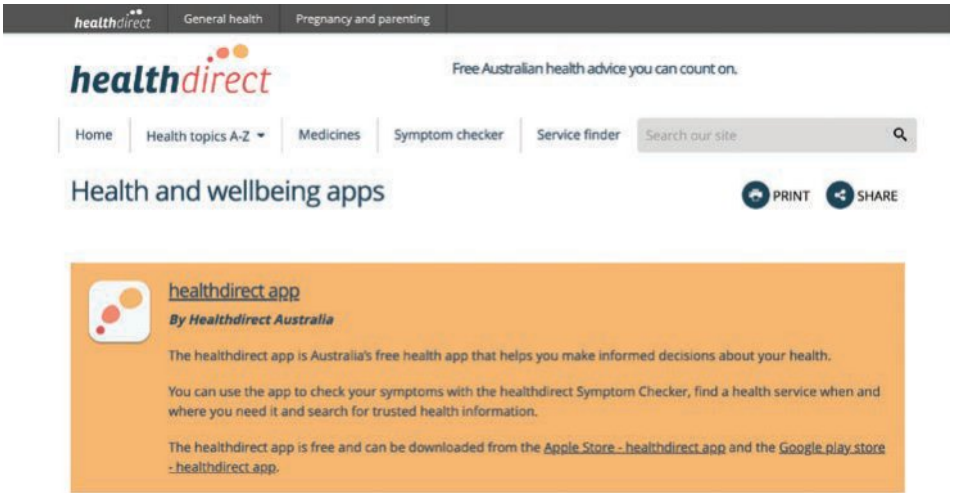
1. Explain what Medicare is.
2. Identify three services that are covered by Medicare and three services that are not.
3. Explain what the Pharmaceutical Benefits Scheme is.
4. Explain what private health insurance is.
5. Outline three reasons why some people decide to take out private health insurance.
6. Explain how Australia's health system can promote the health and wellbeing of individuals.
7. Summarise three factors that can affect a person's access to health services and health information.
8. Identify three rights and three responsibilities of individuals in relation to accessing health care.
9. Explain why each of the rights and responsibilities in Question 8 is important.
10. Outline the advantages and disadvantages of digital or online health services.
11. Summarise three options for consumers to make complaints about healthcare services in Australia.

EXTENDED-RESPONSE QUESTION

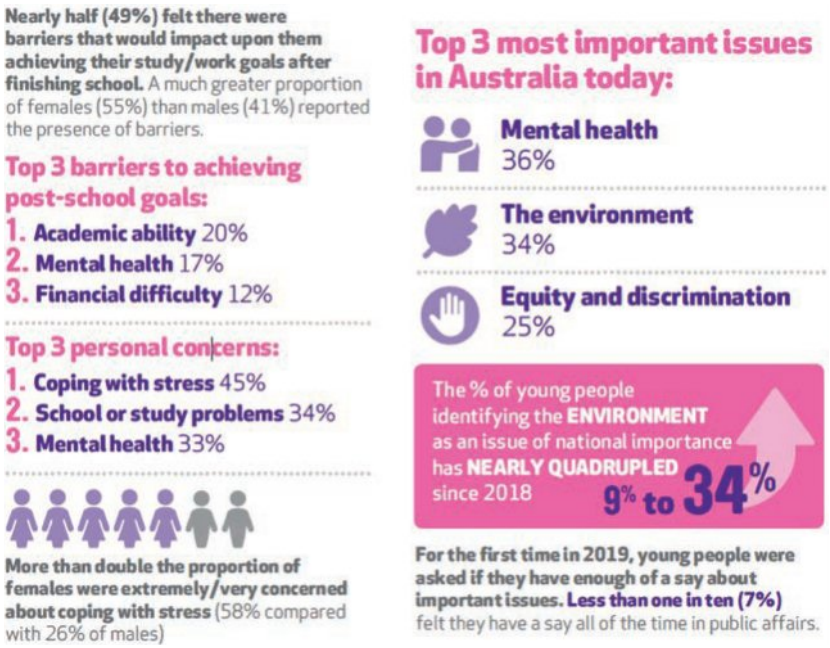
Consider the following information.

SOURCE 1 Celeste is in Year 10. She lives at home with her parents and two older brothers on a farm in northern Victoria. The nearest large hospital is nearly 100 km away. However, for more serious treatment and specialist appointments, Celeste and her family need to travel to Melbourne.

SOURCE 2 Health direct is one of many Australian websites and apps.



SOURCE 3 Extract from Mission Australia's *Youth Survey Report 2018*



QUESTION

Using information from the three sources provided, and your understanding of factors affecting access to health care, discuss the opportunities and challenges faced by youth in accessing health information in the twenty-first century in Australia. (6 marks)

EXAMINATION PREPARATION QUESTIONS

Edward is 32 years old and has a strong family history of cardiovascular disease. He has suffered from high blood pressure for the past few years and needs to visit a specialist on a yearly basis to help him manage his condition. Last time he was at the specialist, Edward mentioned that on occasions, he smokes cigarettes and drinks too much alcohol. He knows both of these behaviours are unhealthy, and risky for the health of his heart. Edward was disappointed by his doctor's reaction to his admission, as he felt his doctor judged him and treated him poorly after discussing these behaviours. In the future, Edward will access a range of health services to assist in the management of his heart health.

A Identify two services that are covered by Medicare that Edward might access to manage the health of his heart. (2 marks)

B In relation to Edward managing the health of his heart, outline one advantage and one disadvantage of Edward having private health insurance. (2 marks)

C Identify two rights and two responsibilities Edward has in accessing healthcare treatment for his high blood pressure. (4 marks)

D Outline the process that Edward should follow if he wishes to make a complaint about the unfair treatment he feels he has received by his doctor. (2 marks)

Scientists have tested a new process for testing for heart conditions. The new test involves injecting special dye into the heart's arteries to reveal possible blockages. Doctors can wear Google Glass (a headset that can take pictures and record videos) during the procedure so that they don't have to handle cameras and contaminate sterile surgical equipment. This new technology could be used to help doctors test Edward for possible heart conditions.

E Explain two issues that should be considered before introducing new health procedures and technologies such as this one. (4 marks)

GLOSSARY

adulthood In Australia, the lifespan stage from 18 years onwards and a time of continuing physical, social, emotional and intellectual change.

advocacy The act of speaking on behalf or in support of another person, place or thing.

affection The feeling and showing of emotions of love, support and care towards a person.

anaemia A reduced level of haemoglobin, the protein that carries oxygen in the red blood cells; it can cause paleness, tiredness and even breathlessness.

barrier An obstacle that may prevent or make it more difficult for people to achieve something for themselves; for example, a lack of money, poor skills, or a lack of knowledge.

belonging The sense of feeling a part of something; a feeling of connectedness to other people or being involved in a community.

blastocyst The name given to the group of human cells following differentiation, approximately six days after conception.

burden of disease A measure of the impact of diseases and injuries. Specifically, it measures the gap between the current health status and an ideal situation where everyone lives to an old age free of disease and disability. Burden of disease is measured in a unit called the DALY.

cardiovascular disease (CVD) Includes all diseases and conditions of the heart and blood vessels (including heart, stroke and vascular diseases) caused mainly by a restriction of the blood supply to the heart, brain and legs.

cephalocaudal law of development The direction of development that occurs from the top (head) down to the bottom (toes) of the body.

chronic condition An ongoing physical or mental condition that causes impairment or functional limitations.

chronic medical condition A condition that has been present for at least six months, is likely to be present for six months, or is terminal.

complex carbohydrates (Also called 'polysaccharides'.) Found in carbohydrates that are digested more slowly than simple carbohydrates, including breads, pastas and cereals; the slower digestion allows for a more stable release of energy.

congenital disorder An inherited or medical condition that occurs at or before birth.

core activity limitation Refers to needing assistance with self-care, mobility and/or communication.

corpus luteum The follicle area of the ovary from which an ovum has been released.

culture The shared attitudes, beliefs, values and practices that characterise a group or organisation.

deoxyribonucleic acid (DNA) A complex acid that contains all of the genetic instructions for the development of an individual organised into the chromosomes within cells.

development The gradual changes in an individual's physical, social, emotional and intellectual states and abilities.

developmental milestone A task, undertaking or event that is expected to be achieved in order to successfully progress to a further level of development.

differentiation During the germinal stage, the process by which cells take on individual functions.

direct costs Can be quantified accurately in terms of monetary costs and are a direct result of the prevention, treatment or diagnosis of disease or illness.

disability An impairment of a body structure or function that results in a limitation in activities or a restriction in participation.

disability adjusted life year (DALY) A measure of the burden of disease. One DALY equals one year of healthy life lost due to premature death and time lived with illness, disease or injury.

dynamic Constantly changing.

embryonic stage The second stage of prenatal development, measured from implantation (about two weeks post-conception) until the end of the eighth week after conception.

emotional development Refers to feelings and moods, and the ways in which people learn to express, understand and exercise control over them.

emotional health and wellbeing Relates to the ability to express feelings in a positive way. It is about the positive management and expression of emotional actions and reactions as well as the ability to display resilience. Emotional health and wellbeing is the degree to which you feel emotionally secure and relaxed in everyday life.

enabler A factor that can support or assist people in doing something for themselves; for example, having knowledge, skills, access to information, family, time and money.

endocrine system A body system made up of glands that release hormones to control body functions.

endometrium The lining of the uterus.

equity Equity in relation to health and wellbeing refers to addressing the causes of inequality and providing strategies to ensure fairness. Equity is not about treating everyone equally but rather providing what individuals or groups require for health and wellbeing (VCAA FAQ, © VCAA).

family Two or more persons, one of whom is aged 15 years or over, who are related by blood, marriage (registered or de facto), adoption, step or fostering, and who usually reside in the same household (ABS).

fertilisation The point at which the sperm penetrates the ovum to form new life.

fibre A type of carbohydrate – specifically, the indigestible part of plant foods such as vegetables, fruits, grains, beans and legumes – that the body does not digest.

fine motor skills The ability to control the movement of smaller muscle groups within the body.

foetal stage The third stage of prenatal development, measured from the end of week eight until birth.

fontanelles The areas between the bones in the skull of an infant.

food miles The distance that food is transported during the journey from producer to consumer.

gap amount The difference between the Medicare benefit and the schedule fee.

gender The socially constructed characteristic of women and men – such as norms, roles and responsibilities of and between groups of women and men.

gender roles A set of social, cultural and often political expectations that prescribe how females and males behave.

germinal stage The first stage of prenatal development, measured from the moment of conception until implantation (about two weeks post-conception).

gland An organ in the body that produces and releases hormones.

gonad A gland in the body that produces the sex cells (called gametes); in humans, the gonads are the testes in males and the ovaries in females.

gross motor skills The ability to control the movement of larger muscle groups within the body.

growth The measurable changes in the body that are mainly due to an increase in the number and size of the body's cells.

growth spurt A period involving a rapid increase in height and body mass, which occurs as a consequence of the onset of puberty.

health A state of complete physical, social and mental wellbeing, and not merely the absence of disease or infirmity (WHO, 1946).

health action The focus on and action of changing behaviours to become health-promoting behaviours.

health behaviours A person's actions, attitudes or beliefs about their health and wellbeing.

health inequalities The differences in health status or the differences in the distribution of health determinants (factors) between different population groups (WHO).

health status An individual's or a population's overall health, taking into account various aspects such as life expectancy, amount of disability, and levels of disease risk factors (AIHW, 2008).

health system Activities whose primary purpose is to promote, restore and/or maintain health.

hormone A chemical substance produced by the body that regulates and controls a wide range of body processes, including physical growth and development.

hypertension (Also called 'high blood pressure'.) Persistently elevated blood pressure.

incidence The number or rate of new cases of a particular condition during a specific time.

indirect costs The secondary costs to individuals, communities or families as a result of suffering from a disease or illness (these costs do not relate directly to the illness or disease and are often difficult to quantify in terms of money).

infertility The inability to conceive a pregnancy after 12 months or more of regular unprotected sexual intercourse.

insulin resistance A condition in which the hormone insulin becomes less effective at managing sugar levels in the blood.

intangible costs The human (social and emotional) costs of loss of quality of life.

intellectual development (Also called 'cognitive development'.) The ways in which people are able to think and reason.

life expectancy An indication of how long a person can expect to live; it is the number of years of life remaining to a person at a particular age if death rates do not change (AIHW, 2008).

maturation The process whereby a person gradually realises their genetic potential.

Medicare Safety Net An additional rebate scheme introduced by the federal government for the benefit of patients, covering a range of doctors' visits and tests received out of hospital. It provides for reimbursement of 100 per cent of the Medicare Benefits Schedule (MBS) fee for out-of-hospital services once the relevant threshold has been reached.

menarche A female's first menstruation or period.

menopause The cessation of menstruation.

mental health and wellbeing Is the current state of wellbeing relating to the mind or brain and it relates to the ability to think and process information. A mentally healthy brain enables an individual to positively form opinions, make decisions and use logic. Mental health and wellbeing is about the wellness of the mind rather than illness. Mental health and wellbeing is associated with low levels of stress and anxiety, positive self-esteem, as well as a sense of confidence and optimism.

monounsaturated fats Types of lipids that do not have a hydrogen atom attached to every chemical bond, and therefore have a double bond in their chemical composition; monounsaturated fats have one double bond; unsaturated fats tend to be liquid at room temperature (e.g. oils).

moral development A person's development of their understanding of the rules and conventions about what people should do in their interactions with other people.

morbidity Refers to ill-health in an individual and the levels of ill-health in a population or group (AIHW, 2008).

mortality The number of deaths caused by a particular disease, illness or other environmental factor.

mortality rate The mortality rate is equivalent to the number of deaths in the population during a specified time period, divided by the total number of persons in the population during the specified time period.

morula The name given to the group of 16–20 cells about four days after conception.

motor development A form of physical development that relates to the way an individual develops muscle function.

motor skills The ability to move, through gaining and exercising control over the large and small muscles of the body.

norm A standard, model or pattern generally regarded as typical.

nutrients Substances found in food that are required by the body for growth and for the maintenance of body systems.

obese When a person's weight is above 'normal' weight, or they have a body mass index of 30 or more.

oestrogen The female sex hormone responsible for sexual development.

optimal health and wellbeing The best possible state of an individual's health and wellbeing for their age.

osteoporosis A musculoskeletal disorder where the bone density thins and weakens, resulting in an increased risk of fractures.

out-of-pocket costs The difference between the Medicare benefit and what a doctor charges.

overweight A condition in which a person's weight is above 'normal' weight, or they have a body mass index of 25 or less than 30.

ovulation The release of the ovum on approximately day 14 of the menstrual cycle.

ovum (Also called an 'egg'.) Contains the DNA from the female parent and is released by the ovaries.

peer group A group of individuals who are similar ages and who share similar interests.

perception The way in which something is regarded, understood or interpreted.

perspective An individual's outlook.

physical development The changes that relate to people's size and shape, and therefore body structure.

physical health and wellbeing Relates to the functioning of the body and its systems. It includes the physical capacity to perform daily activities or tasks. Physical health and wellbeing is supported by factors such as regular physical activity, consuming a balanced diet, having appropriate rest and sleep, maintaining an ideal body weight, and the absence of illness, disease or injury.

placenta A vital organ that supplies oxygen and nutrients to the developing embryo and removes waste products; it is formed from a layer of the developing embryo and links it to the circulatory system of the mother until birth.

polyunsaturated fats Types of lipids that do not have a hydrogen atom attached to every chemical bond, and therefore have a double bond in their chemical composition; polyunsaturated fats have more than one double bond; unsaturated fats tend to be liquid at room temperature (e.g. oils).

prevalence The number or proportion of cases of a particular disease or condition present in a population at a given time (AIHW, 2008).

primary sexual characteristics Characteristics that develop during puberty that are related to the development of the sex organs and reproductive system of males and females, enabling them to reproduce.

priority How important something is considered to be.

progesterone The female sex hormone involved in the female menstrual cycle.

protective factors Positive factors in a person's life that decrease the chance of the person developing a problem or, if a problem exists, make it better; protective factors promote health and wellbeing and reduce the risk of harm, injury or death.

proximodistal law of development The pattern of development that occurs from the centre (or inside) of the body and extends to the body's extremities.

psychological distress Refers to an individual's overall level of psychological strain or pain, and the unpleasant feelings and emotions an individual experiences, that interferes with their ability to perform daily activities.

puberty The time signifying the end of childhood; a time during which significant changes to the way an individual's body structure and functions occur in terms of skeletal and sexual maturation.

qualitative To make subjective judgements or assumptions about development; describes changes that cannot be measured easily.

quantitative To measure, count or gain an idea of how much change is occurring by looking at quantities or amounts.

rates of hospitalisation The number of patients who experience an episode of admitted patient care.

reflex An involuntary action.

relationship A connection between two or more people and their involvement with, and behaviour towards, one another.

reproductive health and wellbeing The state of complete physical, mental and social wellbeing, and not merely the absence of disease or infirmity, in all matters related to the reproductive system and to its functions and processes.

resilience The capacity to thrive, learn, care and contribute in the face of adversity, change or challenge.

respect The concern or consideration for the feelings, wishes, opinions, rights and needs of others.

responsibility A duty or task you are required or expected to do.

risk factors Factors that increase the chance of developing a problem or, if a problem exists, make it worse, affecting health and wellbeing and causing harm, injury or death.

saturated fats Types of lipids that have a hydrogen atom attached to every chemical bond, and therefore do not have a double bond in their chemical composition; saturated fats tend to be solid at room temperature; a major source of saturated fats are animal products.

schedule fee A fee set for a service by the Australian Government.

secondary sexual characteristics Characteristics that develop during puberty that indicate sexual maturity but are not related to a person's ability to reproduce.

self-assessed health status An overall measure of a population's health based on a person's own perceptions of their health.

self-concept The idea individuals have of themselves: who they are, who they want to be, what they value, and what they believe others think of them.

self-esteem How a person feels about their own abilities and self-worth.

sex One of two main categories dividing humans as either male or female based on their genetic information or reproductive organs.

sexual health and wellbeing Is a state of physical, mental and social well-being in relation to sexuality.

simple carbohydrates Simple sugars that are made up of monosaccharides or disaccharides; they include glucose and fructose, and are broken down quickly by the body.

social development The increasing complexity of behaviour patterns used in relationships with other people.

social health and wellbeing Relates to the ability to form meaningful and satisfying relationships with others and to manage or adapt appropriately to different social situations. It also includes the level of support provided by family and within a community to ensure that every person has equal opportunity to function as a contributing member of society. Social health and wellbeing is supported by strong communication skills, empathy for others and a sense of personal responsibility.

socialisation The process of acquiring values, attitudes and behaviours through interacting with others.

sociocultural factors Aspects of society and the social environment that impact on health and wellbeing (e.g. income, education, employment, family, housing, access to health information, social networks, and support) and overall levels of health status.

socioeconomic status (Also referred to as social class.) The key elements of income, education level, employment status, and occupational type determine a person's socioeconomic status.

spiritual health and wellbeing Not material in nature but relates to ideas, beliefs, values and ethics that arise in the minds and conscience of human beings. It includes the concepts of hope, peace, a guiding sense of meaning or value, and reflection on your place in the world. Spiritual health and wellbeing can be highly individualised; for example, in some spiritual traditions, it may relate to organised religion, a higher power and prayer, while in other practices, it can relate to morals, values, a sense or purpose in life, connection or belonging.

subjective Influenced by or based on a person's feelings, opinions and experiences.

Sudden Infant Death Syndrome (SIDS) The sudden unexplained death of a baby.

supportive environments Positive environments (physical, social, economic and political) that help to promote the health and wellbeing of youth by assisting and encouraging young people as they make the transition to adulthood.

testosterone The principal male sex hormone.

trans fats A type of fat formed mainly from the hydrogenation of oils.

trauma A person's response to a major catastrophic event that is so overwhelming it leaves that person unable to come to terms with it (source: Australians Together).

type 2 diabetes mellitus A disorder in which a person's body produces insulin in order to metabolise blood sugar, but either does not produce enough insulin or does not use it effectively.

validity An indication of how sound the research conducted is.

wellbeing A complex combination of all dimensions of health, characterised by an equilibrium in which the individual feels happy, healthy, capable and engaged.

years lost due to disability (YLD) The non-fatal component of the disease burden; a measurement of the healthy years lost due to diseases or injuries.

years of life lost (YLL) The fatal burden of disease of a population, defined as the years of life lost due to death.

zygote The name given to the new cell following fertilisation.

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ACKNOWLEDGEMENTS

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