4 Variations in health status between population groups

Unit	**3**	**Australia's health in a globalised world**
Area of Study	**1**	**Understanding health and wellbeing**
Topic	**4**	**Variations in health status between population groups**
Subtopic	**4.2**	**Biological factors contributing to variations in health status**

Summary

Having high blood pressure is an example of a biological factor impacting on health status.

- **Biological factors** are factors that impact on the way the body functions, including:
  - body weight (mass)
  - blood pressure levels
  - blood cholesterol levels
  - glucose regulation
  - birth weight
  - genetics, including sex, hormones and (genetic) predisposition to disease.
- *Impact on health status:*
  High blood pressure is a risk factor for cardiovascular disease (CVD) and type 2 diabetes.

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Past VCAA exam questions

Source: *VCAA 2017, Health and Human Development Exam, Q5b*

Question 1

Oliver is a 51-year-old male. He smokes 10 cigarettes a day and has a minimal alcohol intake. Oliver's body weight is quite high and he has little time to exercise. Oliver has been diagnosed with high cholesterol and he suffers from hypertension, placing him at risk of cardiovascular disease.

Select one biological determinant evident in the information provided above. Explain how this biological determinant could increase the risk of cardiovascular disease. **3 marks**

Exam practice questions

Source: *Jacaranda (John Wiley & Sons Australia, Ltd), Practice VCE Question*

Question 2

List three examples of biological factors and describe how each may affect the health of an individual. **6 marks**

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Source: *Jacaranda (John Wiley & Sons Australia, Ltd), Practice VCE Question*

Question 3

Explain how one biological determinant can affect physical health and wellbeing. **2 marks**

Source: *Jacaranda (John Wiley & Sons Australia, Ltd), Practice VCE Question*

Question 4

Which of the following is not a biological factor that impacts on the health status of population groups? **1 mark**

A. blood pressure levels
B. body mass
C. blood glucose levels
D. food insecurity

Source: *Jacaranda (John Wiley & Sons Australia, Ltd), Practice VCE Question*

Question 5

Biological factors that impact on the health status of population groups include **1 mark**

A. culture.
B. a family history of breast cancer.
C. early life experiences.
D. All of the above

Source: *Jacaranda (John Wiley & Sons Australia, Ltd), Practice VCE Question*

Question 6

Identify two biological factors and describe how each impacts on health status. **4 marks**

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Unit	**3**	**Australia's health in a globalised world**
Area of Study	**1**	**Understanding health and wellbeing**
Topic	**4**	**Variations in health status between population groups**
Subtopic	**4.3**	**Sociocultural factors contributing to variations in health status**

Summary

- **Sociocultural factors**: the social and cultural conditions in which people are born, grow, live, work and age.
- Sociocultural factors include:
  - socioeconomic status (income, occupation and education levels)
  - unemployment
  - social exclusion and isolation
  - cultural influences, such as customs and traditions
  - food security
  - early life experiences
  - access to health care.
- *Impact on health status*:
  Being unemployed for a lengthy period of time may lead to feelings of failure and worthlessness, which could increase the risk of depression and self-harm.

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Exam practice questions

Source: *Jacaranda (John Wiley & Sons Australia, Ltd), Practice VCE Question*

Question 1

List four sociocultural factors that impact on the health status of population groups. **4 marks**

Source: *Jacaranda (John Wiley & Sons Australia, Ltd), Practice VCE Question*

Question 2

Which of the following is not an example of a sociocultural factor that impacts on the health status of population groups? **1 mark**

A. housing
B. early life experiences
C. food security
D. unemployment

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Source: *Jacaranda (John Wiley & Sons Australia, Ltd), Practice VCE Question*

Question 3

Sociocultural factors that impact on the health status of population groups include **1 mark**

A. being unemployed.
B. language barriers preventing access to health care.
C. levels of income and education.
D. All of the above

Source: *Jacaranda (John Wiley & Sons Australia, Ltd), Practice VCE Question*

Question 4

Explain how early life experiences may impact on health status. **2 marks**

Source: *Jacaranda (John Wiley & Sons Australia, Ltd), Practice VCE Question*

Question 5

Apart from early life experiences, identify a sociocultural factor and discuss how it impacts on health status. **2 marks**

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Unit	**3**	**Australia's health in a globalised world**
Area of Study	**1**	**Understanding health and wellbeing**
Topic	**4**	**Variations in health status between population groups**
Subtopic	**4.4**	**Environmental factors contributing to variations in health status**

Summary

The relationship between the physical environment and health is complex

- **Environmental factors** relate to the physical features that surround us, including:
  - housing
  - work environment
  - urban design and infrastructure
  - climate and climate change
  - geographic location.
- *Impact on health status:*
  A dangerous work environment, e.g. working in a factory, may increase risk of injury, either from using poorly maintained machinery or from using machinery incorrectly.

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Exam practice questions

Source: *Jacaranda (John Wiley & Sons Australia, Ltd), Practice VCE Question*

Question 1

Which of the following is not an example of an environmental factor that impacts on the health status of population groups? **1 mark**

A. housing
B. work environment
C. access to health care
D. climate change

Source: *Jacaranda (John Wiley & Sons Australia, Ltd), Practice VCE Question*

Question 2

Environmental factors that impact on the health status of population groups include **1 mark**

A. exposure to dangerous chemicals in the workplace.
B. absence of hand rails on stairs.
C. overcrowded housing.
D. All of the above

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Source: *Jacaranda (John Wiley & Sons Australia, Ltd), Practice VCE Question*

Question 3

Explain how housing may impact on two dimensions of health and wellbeing. **3 marks**

Source: *Jacaranda (John Wiley & Sons Australia, Ltd), Practice VCE Question*

Question 4

Identify an environmental factor and describe how it may impact on life expectancy. **2 marks**

Source: *Jacaranda (John Wiley & Sons Australia, Ltd), Practice VCE Question*

Question 5

According to the Australian Institute of Health and Welfare, 63 per cent of Australians are overweight or obese.

Explain how urban structure and design could decrease overweight and obesity rates in Australians.

2 marks

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Unit	**3**	**Australia's health in a globalised world**
Area of Study	**1**	**Understanding health and wellbeing**
Topic	**4**	**Variations in health status between population groups**
Subtopic	**4.5**	**Differences between Indigenous and non-Indigenous Australians population groups**

Summary

- Compared to **non-Indigenous Australians, Indigenous Australians** generally have poorer health status, including:
  - lower life expectancy
  - higher infant mortality rates and mortality from cardiovascular disease and cancer
  - higher rates of suicide, diabetes, kidney disease, asthma, mental health issues, sexually transmitted infections and dental decay.
- Indigenous Australians have:

Biological	Sociocultural	Environmental
Higher rates of impaired glucose regulation, increases the risk of type 2 diabetes.	Limited access to culturally appropriate health care — may mean putting off seeking medical help, increasing the risk of preventable deaths.	Inadequate water and sewerage systems in remote Indigenous communities may increase infection rates, contributing to higher infant mortality.

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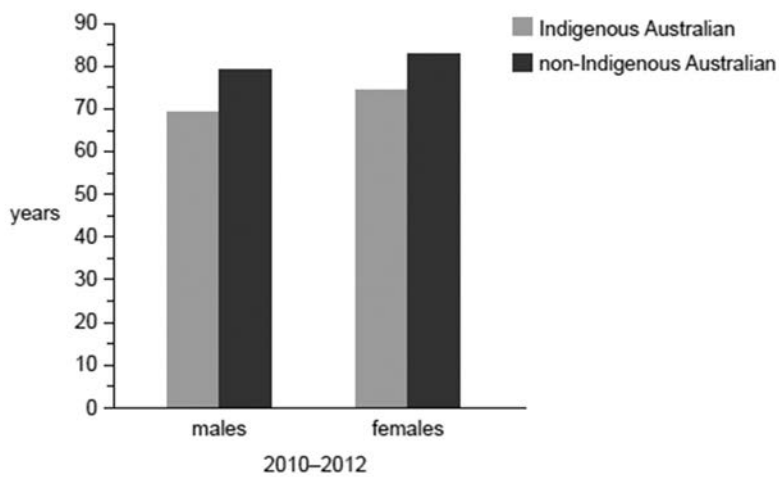
Past VCAA exam questions

Source: *VCAA 2015, Health and Human Development Exam, Q1b*

Question 1

Life expectancy at birth, by sex and Indigenous status, 2010–2012



Data: Australian Bureau of Statistics, *Fact sheet: Life expectancy estimates for Aboriginal and Torres Strait Islander Australians, 2010–2012*, cat. no. 3302.0.55.003

Use the data in the graph shown to compare the health status of non-Indigenous Australian males and females to Indigenous Australian males and females. **2 marks**

Source: *Adapted from VCAA 2015, Health and Human Development Exam, Q1c*

Question 2

Explain why mental health and wellbeing differs between non-Indigenous Australians and Indigenous Australians. **2 marks**

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Source: *Adapted from VCAA 2015, Health and Human Development Exam, Q1d*

Question 3

Select one sociocultural factor and explain how it might contribute to the differences in life expectancy at birth between non-Indigenous Australians and Indigenous Australians. **3 marks**

Source: *VCAA 2016, Health and Human Development Exam, Q2a*

Question 4

The following data relates to the health status of Indigenous and non-Indigenous Australians.

	Prevalence of diabetes mellitus (age-standardised per cent)*	Incidence of type 1 diabetes (per 100 000)†	Mortality with diabetes as underlying cause (per 100 000)*
Indigenous	15	7	89.4
Non-Indigenous	4.7	10	15.6

Data: *Australian Institute of Health and Welfare, *The Health and Welfare of Australia's Aboriginal and Torres Strait Islander Peoples 2015*, cat. no. IHW 147, AIHW, Canberra, 2015;

†Australian Institute of Health and Welfare, *Incidence of Type 1 Diabetes in Australia 2000–2013*, 'Diabetes' series no. 23, cat. no. CVD 69, AIHW, Canberra, 2015

Use data from the table to compare the health status of Indigenous and non-Indigenous Australians.

2 marks

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Source: *VCAA 2006 Health and Human Development Exam, Q3aii*

Question 5

In 2001 the estimated Indigenous population in Victoria was 27 928. This is 0.6% of Victoria's overall population and 6.1% of Australia's Indigenous population. The estimated residential population of Indigenous Victorians is distributed evenly between metropolitan and country regions. The health status of Indigenous Victorians varies from non-Indigenous people in Victoria; for example:

- life expectancy for Indigenous people is 17 years shorter than for the non-Indigenous population
- Indigenous people in Victoria are hospitalised more frequently than non-Indigenous people
- alcohol and substance-use related disease is 2.0–7.7 times more frequent in the Indigenous population
- cardiovascular disease, including stroke and rheumatic disease, is 1.4–5.0 times more frequent in Indigenous people
- chronic lung disease, including emphysema, is 1.9–25.7 times more frequent in Indigenous people.

Source: adapted from Koori Health in Victoria, Koori Health www.health.vic.gov.au accessed February 2006

Explain how socioeconomic status may impact on the variations in health status between Indigenous and non-Indigenous Victorians as listed above. **2 marks**

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Source: *Adapted from VCAA 2011, Health and Human Development Exam, Section B, Q1*

Question 6

Indigenous males and females in Australia have significantly poorer health than their non-Indigenous counterparts. **6 marks**

For example:

- the estimated life expectancy for Indigenous males is approximately 12 years less than that of non-Indigenous males
- the estimated life expectancy for Indigenous females is approximately 10 years less than that of non-Indigenous females
- the Indigenous rates for diabetes mellitus are six times higher than non-Indigenous Australians
- the Indigenous rates of hospitalisations and mortality are around twice the rate of non-Indigenous Australians
- per person expenditure on health for Indigenous Australians was almost $6000 per person in 2006–2007, while for non-Indigenous Australians the spending was approximately $4500 per person

Source: Australia's health 2010

a. Explain how one sociocultural factor may impact on the variations in health status between Indigenous and non-Indigenous Australians. **2 marks**

b. Use two other examples of determinants of health to explain why Indigenous Australians have significantly poorer health status than non-Indigenous Australians. **4 marks**

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Exam practice questions

Source: *Jacaranda (John Wiley & Sons Australia, Ltd), Practice VCE Question*

Question 7

Prevalence of selected long-term health conditions by Indigenous status, 2004–05

Condition	Indigenous	Total Australians
Eye/sight problems	30	52
Musculoskeletal disease	22	31
Asthma	15	10
Diabetes	6	4
Total population	**474 300**	**19 681 500**

Describe the differences in prevalence of two of the selected conditions between Indigenous population and all Australian population. **2 marks**

Source: *Jacaranda (John Wiley & Sons Australia, Ltd), Practice VCE Question*

Question 8

List four differences in health status between Indigenous people and non-Indigenous people in Australia. **4 marks**

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Unit	**3**	**Australia's health in a globalised world**
Area of Study	**1**	**Understanding health and wellbeing**
Topic	**4**	**Variations in health status between population groups**
Subtopic	**4.6**	**Differences between males and females population groups**

Summary

- Compared to **females, the health status of males** has always been poorer, including:
  - lower life expectancy by about four years
  - higher rates of death from road trauma, suicide and injuries
  - higher rates of cardiovascular disease (CVD), diabetes, kidney disease and many cancers.
- However, men have lower rates of osteoporosis, arthritis and mental health issues.

Biological	Sociocultural	Environmental
Males are more likely to be overweight and have hypertension, which are leading risk factors for CVD.	Impacts of unemployment are greater in males, which could lead to depression and higher rates of suicide.	Males are more likely to work in dangerous environments, which may cause higher rates of injury.

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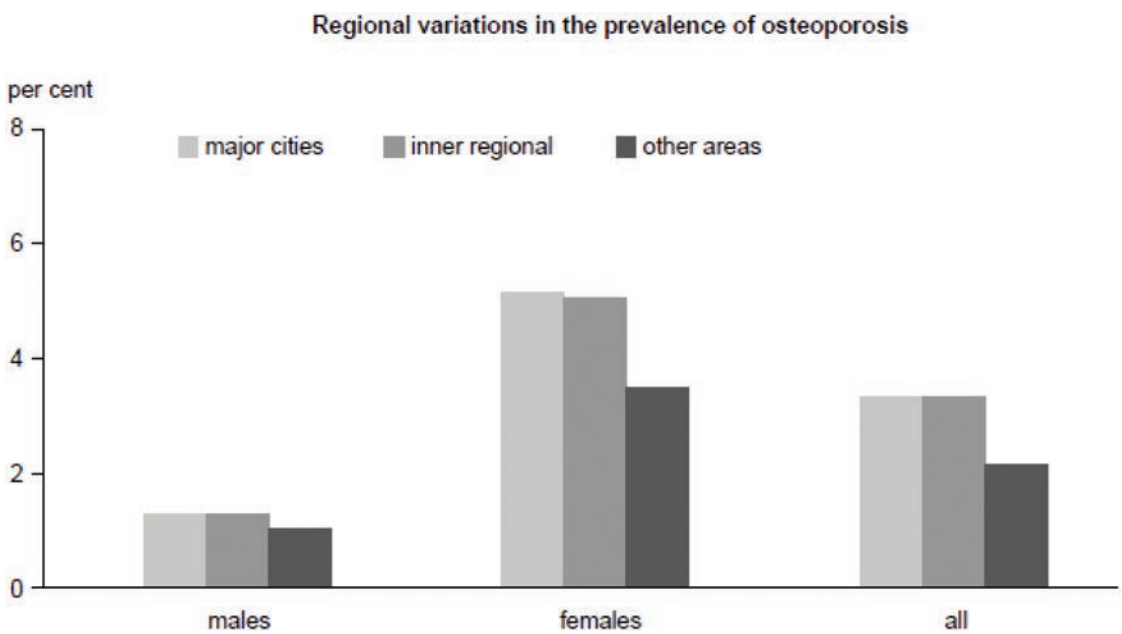
Past VCAA exam questions

Source: *VCAA 2015, Health and Human Development Exam, Q5b*

Question 1



Source: Australian Institute of Health and Welfare, *A snapshot of osteoporosis in Australia 2011*, Arthritis series no. 15, cat. no. PHE 137, Canberra, 2011, p.4

Identify two trends evident in the graph shown. **2 marks**

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Source: *VCAA 2007 Health and Human Development Exam, Q2bii*

Question 2

Table 2

	Males by age group years (years)					Females by age group (years)				
Broad Disease Group	**0–14**	**15–34**	**35–54**	**55–74**	**75+**	**0–14**	**15–34**	**35–54**	**55–74**	**75+**
Cancer	592	1581	11 849	38 954	18 165	373	2098	15 660	28 248	17 632
Diabetes	175	496	5450	7017	2177	169	381	4180	5818	3320
Mental disorders	4408	25 421	12 665	3429	467	2477	23 376	17 074	4570	530
Cardiovascular diseases	121	1488	9869	26 332	22 579	220	1188	4567	16 821	31 868
Musculoskeletal disease	63	592	2613	3648	1239	66	724	3555	5335	2814
Injuries	2138	14 479	8830	3209	1050	1207	4172	3340	1793	1690
Other	21 575	9056	16 641	33 024	27 017	16 869	13 450	15 115	25 638	38 393
Total	29 072	53 113	67 917	115 613	72 694	21 381	45 389	63 491	88 223	96 247

Source: Adapted from Public Health Group, Rural and Regional Health and Aged Care Services Division, 2005, Victorian Burden of Disease Study, Mortality and morbidity in 2001, Victorian Government Department of Human Services, Melbourne, p. 177

Using the data in Table 2, what conclusions can you make about the health status of Victorian males compared to Victorian females?
Use examples from Table 2 to support your conclusions. **3 marks**

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Source: *Adapted from VCAA 2007 Health and Human Development Exam, Q2biii*

Question 3

Table 2 below shows the Disability-Adjusted Life Years (DALYs) by age, sex and cause in Victoria 2001.

Table 2

	Males by age group years (years)					Females by age group (years)				
Broad Disease Group	**0–14**	**15–34**	**35–54**	**55–74**	**75+**	**0–14**	**15–34**	**35–54**	**55–74**	**75+**
Cancer	592	1581	11 849	38 954	18 165	373	2098	15 660	28 248	17 632
Diabetes	175	496	5450	7017	2177	169	381	4180	5818	3320
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Cardiovascular diseases	121	1488	9869	26 332	22 579	220	1188	4567	16 821	31 868
Musculoskeletal disease	63	592	2613	3648	1239	66	724	3555	5335	2814
Injuries	2138	14 479	8830	3209	1050	1207	4172	3340	1793	1690
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Total	29 072	53 113	67 917	115 613	72 694	21 381	45 389	63 491	88 223	96 247

Source: Adapted from Public Health Group, Rural and Regional Health and Aged Care Services Division, 2005, Victorian Burden of Disease Study, Mortality and morbidity in 2001, Victorian Government Department of Human Services, Melbourne, p. 177

Variations in health status result from biological, sociocultural and environmental factors.
Choose **two** of these factors and describe how they may cause variations in health status between males and females. **4 marks**

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Source: *VCAA 2009, Health and Human Development Exam, Q2*

Question 4

In June 2008, the federal government made a commitment to the development of a national men's health policy.

The policy will aim to address health issues that men face in relation to:

- accessing health services
- engaging men about their health
- raising awareness of the range of preventable health problems.

Use these issues to justify two reasons why the government should develop a national men's health policy. **4 marks**

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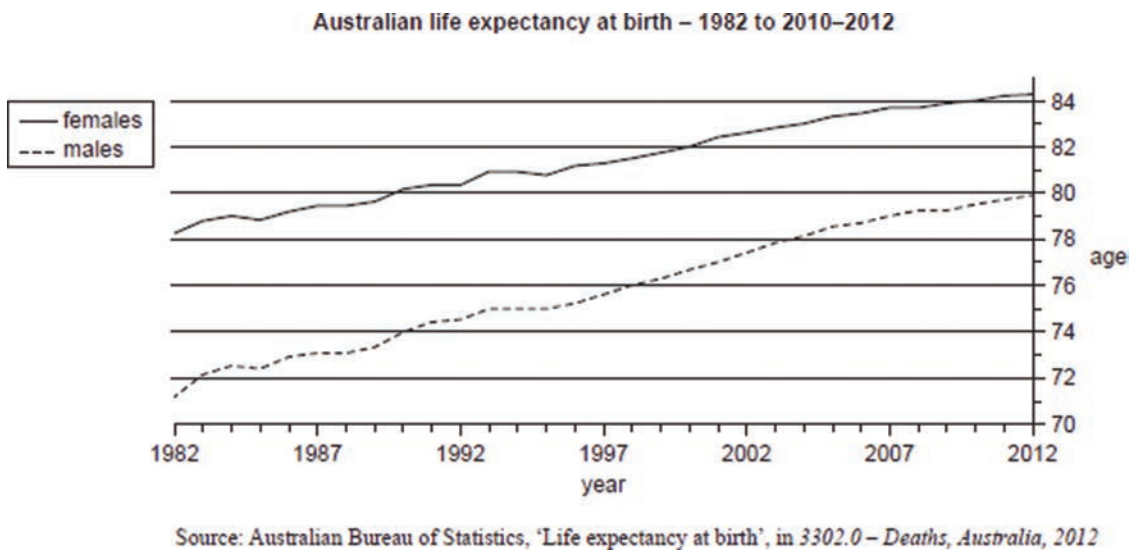
Source: *Adpated from VCAA 2014 Health & Human Development Exam, Q4*

Question 5

5 marks



Source: Australian Bureau of Statistics, 'Life expectancy at birth', in *3302.0 – Deaths, Australia, 2012*

a. Compare the life expectancy of males to females evident in the graph. **1 mark**

b. Explain how one biological factor and one sociocultural factor could contribute to the variations in life expectancy between males and females. **4 marks**

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Exam practice questions

Source: *Jacaranda (John Wiley & Sons Australia, Ltd), Practice VCE Question*

Question 6

Explain why life expectancy and health adjusted life expectancy are lower for men than for women in Australia. **2 marks**

Source: *Jacaranda (John Wiley & Sons Australia, Ltd), Practice VCE Question*

Question 7

When compared to females, males have poorer health status.

Which of the following is not an accurate statement about the health status of males? **1 mark**

A. Males are more likely to have higher rates of cardiovascular disease, osteoporosis and type 2 diabetes than females.

B. Males are more likely to die as a result of road trauma than females.

C. Males are more likely to have lower rates of mental health issues than females.

D. Males have a lower life expectancy than females.

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Unit	**3**	**Australia's health in a globalised world**
Area of Study	**1**	**Understanding health and wellbeing**
Topic	**4**	**Variations in health status between population groups**
Subtopic	**4.7**	**Differences between high and low socioeconomic status population groups**

Summary

- Compared to **high socioeconomic groups**, Australians from **low socioeconomic status (SES) groups** generally have poorer health status, including:
  - lower life expectancy
  - higher mortality rates from lung cancer, cardiovascular disease and injuries
  - higher infant mortality rates
  - higher rates of cardiovascular disease, diabetes, arthritis, mental health issues and asthma.
- People in low socioeconomic groups have:

Biological	Sociocultural	Environmental
Higher rates of low birth weight babies could contribute to higher infant mortality rates.	Higher rates of social exclusion could lead to depression and contribute to higher rates of mental health issues.	Poorer quality housing and greater exposure to environmental tobacco smoke could lead to higher asthma rates.

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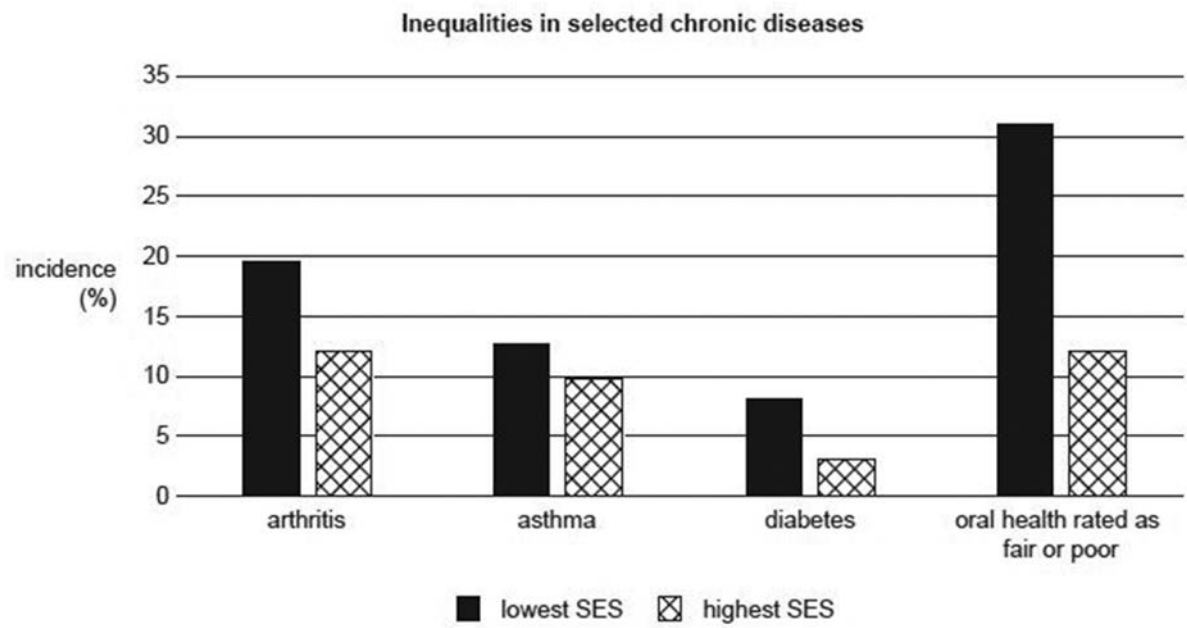
Past VCAA exam questions

Source: *VCAA 2017, Health and Human Development Exam, Q7a*

Question 1

The following graph shows the incidence of selected chronic diseases by socio-economic status (SES) in Australia in 2014–2015.



Data: Australian Institute of Health and Welfare (AIHW), *Australia's Health 2016*, 'Australia's Health' series no. 15, cat. no. AUS 199, AIHW, Canberra, 2016, p. 184

Outline the relationship between SES and health status shown in the graph above. **1 mark**

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Source: *VCAA 2011, Health and Human Development Exam, Section A, Q4a*

Question 2

Health status varies within population groups in Australia. The graph below shows premature death rates for the 15–64 year age group according to socioeconomic status (SES).

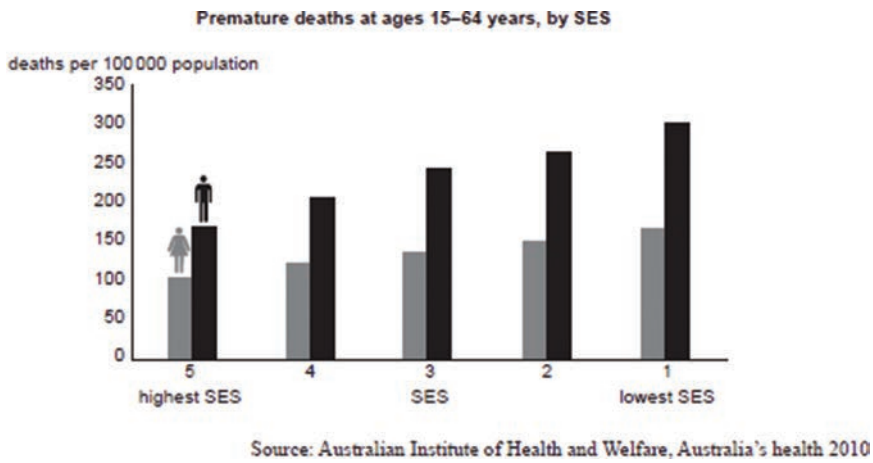
Source: Australian Institute of Health and Welfare, Australia's health 2010

Identify two factors that contribute to socioeconomic status. **2 marks**

Source: *VCAA 2011, Health and Human Development Exam, Section A, Q4b*

Question 3

Health status varies within population groups in Australia. The graph below shows premature death rates for the 15–64 year age group according to socioeconomic status (SES).



Source: Australian Institute of Health and Welfare, Australia's health 2010

From the data in the graph, describe a conclusion that can be drawn about the relationship between socio economic status and rates of premature death. **2 marks**

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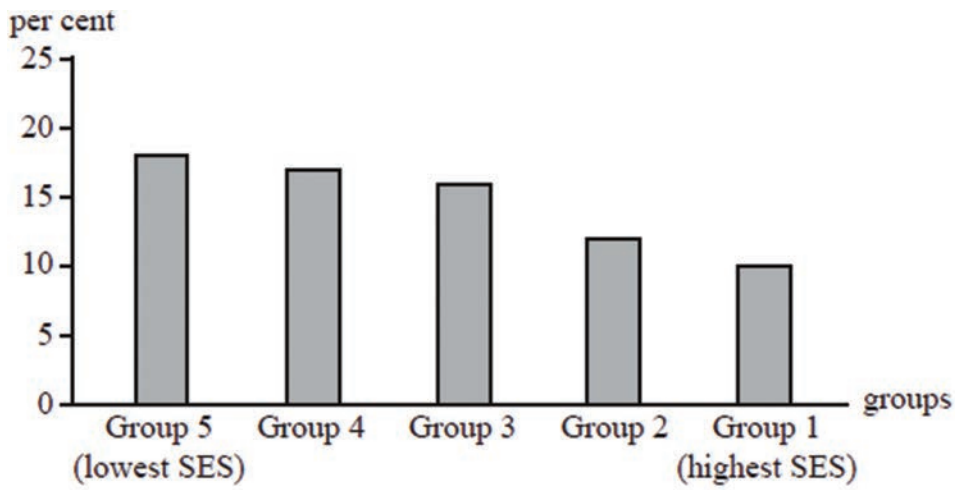
Source: *VCAA 2009, Health and Human Development Exam, Q5a*

Question 4

The graph below shows the prevalence of obesity in females according to socioeconomic status (SES).



Source: Adapted from Australian Institute of Health and Welfare, *Australia's Health* 2008

Describe the relationship between socioeconomic status and obesity in females shown in the graph. **1 mark**

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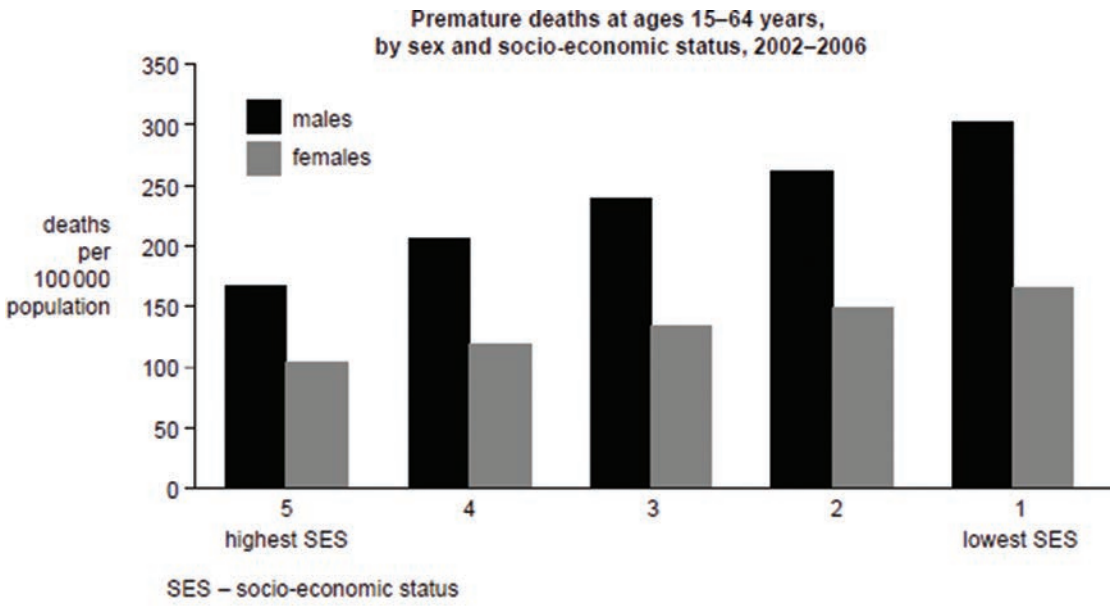
Source: *VCAA 2013, Health and Human Development, Section B, Q5a*

Question 5



Source: Australian Institute of Health and Welfare, *Australia's health 2010*, Australia's health series no. 12, cat. no. AUS 122, Canberra, 2010, p. 254

Using information from the graph, identify how socio-economic status is related to deaths per 100 000. **1 mark**

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Source: *Adapted from VCAA 2013, Health and Human Development, Section B, Q5b*

Question 6

Source: Australian Institute of Health and Welfare, *Australia's health 2010*, Australia's health series no. 12, cat. no. AUS 122, Canberra, 2010, p. 254

Identify **one** biological factor and explain how it might contribute to the differences in deaths per 100 000 between the population groups with the highest and lowest socio-economic status. **2 marks**

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Exam practice questions

Source: *Jacaranda (John Wiley & Sons Australia, Ltd), Practice VCE Question*

Question 7

List three biological risk factors that are higher for males than females that cause a difference in health status between the two groups. **1 mark**

Source: *Jacaranda (John Wiley & Sons Australia, Ltd), Practice VCE Question*

Question 8

Identify four differences in the health status of high and low socioeconomic groups. **4 marks**

Source: *Jacaranda (John Wiley & Sons Australia, Ltd), Practice VCE Question*

Question 9

List two sociocultural risk factors that cause differences in health status between low and high socioeconomic groups. **2 marks**

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Unit	**3**	**Australia's health in a globalised world**
Area of Study	**1**	**Understanding health and wellbeing**
Topic	**4**	**Variations in health status between population groups**
Subtopic	**4.8**	**Differences between those living within and outside of Australia's major cities**

Summary

- Compared to **people living in major cities, those living outside Australia's major cities** generally have poorer health status, including:
  - lower life expectancy
  - higher rates of preventable cancers (lung and skin)
  - higher mortality rates from cardiovascular disease and injury
  - higher rates of asthma, dental decay, diabetes, arthritis, mental health issues and suicide.
- People living outside major cities often have:

Biological	Sociocultural	Environmental
Higher blood cholesterol levels — a risk factor for CVD.	Lower income levels — less money to spend on dental care contributing to higher dental decay rates.	Poorer road quality in areas outside major cities may contribute to more car accidents, increasing injury rates.

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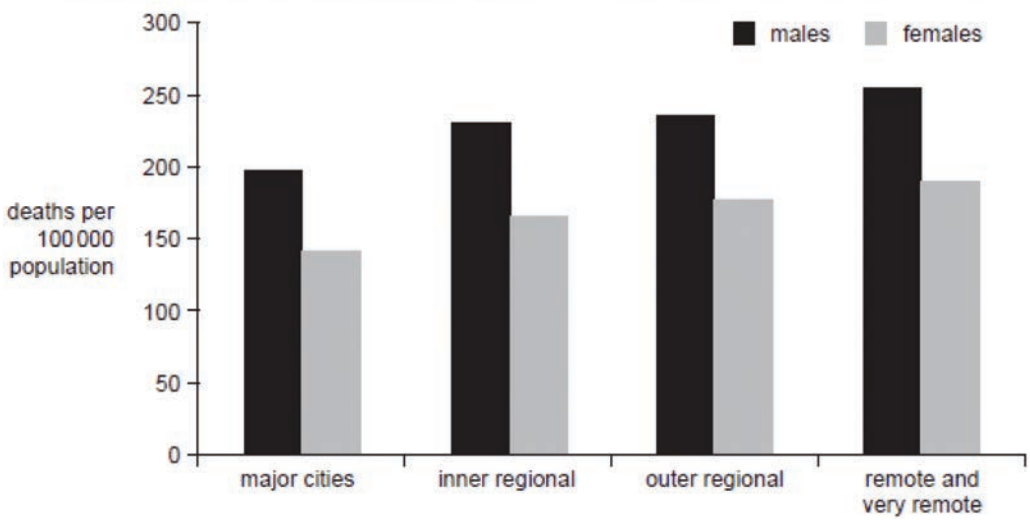
Past VCAA exam questions

Source: *VCAA 2016, Health and Human Development Exam, Q8*

Question 1 **5 marks**

Cardiovascular disease death rates, by remoteness and sex, 2009–2011



Source: Australian Institute of Health and Welfare, *Cardiovascular Disease, Diabetes and Chronic Kidney Disease – Australian Facts: Mortality*, 'Cardiovascular, Diabetes and Chronic Kidney Disease' series no. 1, cat. no. CDK 1, AIHW, Canberra, 2014

a. Identify **one** trend in the graph above. **1 mark**

b. Identify one biological and one social determinant of health and explain how each could contribute to the trend identified in **part a**. **4 marks**

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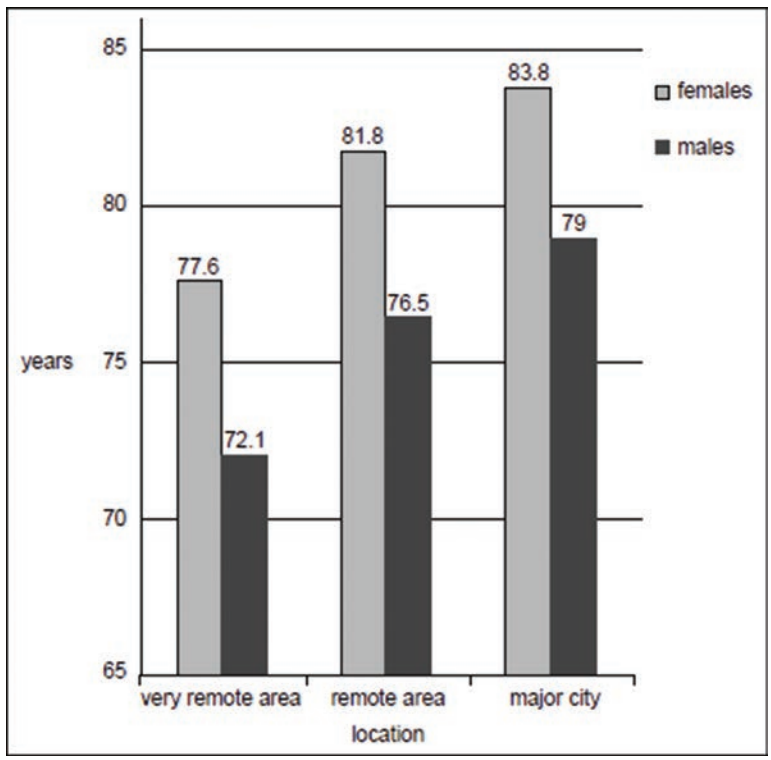
Source: *VCAA 2008 Health and Human Development Exam, Q5b*

Question 2

The following graph compares the life expectancy of males and females according to the remoteness of where they live.

Life expectancy by location of where they live 2002–2004



Source: Adapted from the Australian Institute of Health and Welfare, Rural, regional and remote health 2008, p. 52

Use the information in the graph above to compare the life expectancy of males and females according to where they live. **2 marks**

Source: *VCAA 2008 Health and Human Development Exam, Q5ci*

Question 3

Table 2 shows the difference in the prevalence of self-reported conditions in **metropolitan** areas compared to **inner regional** and **outer regional** and remote areas.

Table 2. The prevalence of self-reported conditions 2004-2005 for inner regional and outer regional and remote compared with metropolitan areas

	Inner regional Increase in % compared with the metropolitan area	Outer regional and remote Increase in % compared with the metropolitan area
Diabetes	3%	4%
Asthma	22%	8%
Arthritis	24%	23%
Injuries	20%	21%
Depression	15%	4%
Overweight/obesity	5%	12%

Source: Adapted from Australian Institute of Health and Welfare, Rural, regional and remote health 2008

Compare the self-reported health status of those living in metropolitan areas with those living in inner regional and outer regional and remote areas for asthma, injuries and overweight/obesity. **3 marks**

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Source: *Adapted from VCAA 2013, Health and Human Development, Section A, Q2b*

Question 4

Select **one** example of a sociocultural factor and explain how it might contribute to variations in health status between those living in rural and remote areas and those living in major cities. **2 marks**

Source: *Adapted from VCAA 2013, Health and Human Development, Section A, Q2a*

Question 5

Give **one** example of a sociocultural factor that could contribute to poorer health status for those living in rural and remote areas. **1 mark**

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Exam practice questions

Source: *Jacaranda (John Wiley & Sons Australia, Ltd), Practice VCE Question*

Question 6

Describe the health status of people living in rural and remote parts of Australia. **3 marks**

Source: *Jacaranda (John Wiley & Sons Australia, Ltd), Practice VCE Question*

Question 7

Explain how access to health services may affect the health status of rural Australians. **2 marks**

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Answers and marking guide

4.2 Biological factors contributing to variations in health status

Question 1

Body weight — Oliver's body weight is quite high. High body weight can put the heart under stress, as the heart has to work harder to pump blood to additional body tissue caused by weight gain. Over time this can lead to cardiovascular disease.

Award 1 mark for identifying a biological determinant evident in the stimulus material provided.

Award 1 mark for explaining role of chosen biological determinant example.

Award 1 mark for linking chosen example to cardiovascular disease.

VCAA Examination Report note:

Most students identified a relevant biological determinant evident in the information, although many were unable to provide the necessary detail to explain how the selected determinant increases the risk of cardiovascular disease. Students are reminded that body weight is a biological determinant and obesity is a condition. Similarly, blood pressure is a determinant and hypertension is a condition.

Suggested VCAA response:

Biological determinant: high blood cholesterol

Explanation: Oliver was diagnosed with high cholesterol, which contributes to atherosclerosis. Cholesterol can build up on blood vessel walls and increase the risk of other fatty deposits and calcium deposits developing on blood vessel walls, which leads to narrowing of the blood vessels, restricting blood flow and an increasing risk of clots, stroke and cardiovascular disease.

Other examples of biological determinants included:

- body weight
- sex/genetics
- blood pressure
- age

Question 2

Examples and descriptions may include:

Blood pressure - having high blood pressure impacts on health status as it increases the risk of cardiovascular disease.

Blood cholesterol levels - having high blood cholesterol levels impacts on health status as it increases the risk of cardiovascular disease.

Body mass - having a high body mass impacts on health status as it increases the risk of cardiovascular disease and type 2 diabetes.

Genetics - determine whether an individual will develop male or female sexual characteristics. This will impact on health status as having male sexual characteristics increases the risk of prostate cancer.

Award 1 mark for each of three valid biological factors and 1 mark for an accurate description of how each may affect health status.

Question 3

Examples of biological determinants include:

- body mass
- cholesterol levels
- blood pressure levels
- glucose regulation
- birth weight
- genetics — including both sex and genetic predisposition to disease.

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Sample answer
Body mass - people who are overweight or obese have an increased risk of cardiovascular disease and type 2 diabetes, which impacts on their physical health and wellbeing as they are not free from illness and disease.
Award 1 mark for identification of a valid biological determinant.
Award 1 mark for an accurate explanation.

Question 4
Correct Answer is D
Food insecurity is a sociocultural factor that impacts on the health status of population groups. Blood pressure levels, body mass and blood glucose levels are all biological factors.

Question 5
Correct Answer is B
A family history of breast cancer is an example of the biological factor 'genetic predisposition'. Culture and early life experiences are examples of sociocultural factors.

Question 6
Suggested answers include:
- Blood pressure — having high blood pressure is a risk factor for cardiovascular disease which, if left untreated, could increase mortality and lower life expectancy.
- Glucose regulation — being glucose intolerant increases morbidity from type 2 diabetes.
- Body mass — being overweight or obese increases risk of morbidity from cardiovascular disease and some forms of cancer.
- Sex — being female increases risk of morbidity from osteoporosis and breast cancer.

For each of two biological factors chosen:
- award 1 mark for an accurate biological factor.
- award 1 mark for describing how the chosen example impacts on health status.

Maximum of 4 marks.

4.3 Sociocultural factors contributing to variations in health status

Question 1
Valid sociocultural factors include:
- socioeconomic status (income, occupation and education levels)
- food security
- unemployment
- social exclusion and isolation
- cultural influences, such as customs and traditions
- early life experiences
- access to healthcare.

Award 1 mark for each of four valid sociocultural factors.

Question 2
Correct Answer is A
Housing is an example of an environmental factor that influences the health status of population groups. Early life experiences, food security and unemployment are all sociocultural factors that impact on the health status of population groups.

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Question 3
Correct Answer is D
Being unemployed, language barriers preventing access to health care and levels of income and education are all sociocultural factors that impact on the health status of population groups.

Question 4
Being exposed to maternal smoking during pregnancy increases the risk of low birth weight babies.
Babies who are born with a low birth weight are more susceptible to infections and death during infancy.
Award 1 mark for an example of an early life experience.
Award 1 mark for explaining how this example impacts on health status.

Question 5
Suggested answers may include:
- Socioeconomic status — having sufficient income to buy nutritious foods such as fresh fruits and vegetables may improve health status, as fruits and vegetables contain fibre, which is a protective factor for health conditions such as obesity, cardiovascular disease and type 2 diabetes.
- Unemployment — being unemployed for a lengthy period of time may lead to feelings of failure and worthlessness, which could increase morbidity from depression and self harm.
- Social isolation — people who are isolated from others and have no one to turn to in times of difficulty may have higher rates of morbidity from depression.

Other sociocultural factors include:
- food security
- social exclusion
- cultural influences such as customs and traditions
- access to health care.

Award 1 mark for a sociocultural factor.
Award 1 mark for explaining how the chosen sociocultural factor impacts on health status.

4.4 Environmental factors contributing to variations in health status

Question 1
Correct Answer is C
Access to health care is a sociocultural factor that impacts on the health status of population groups.

Question 2
Correct Answer is D
Exposure to dangerous chemicals in the workplace, the absence of hand rails on stairs and overcrowded housing are all examples of environmental factors that impact on health status.

Question 3
Overcrowded housing:
- Overcrowded living conditions may mean that multiple people have to share the one sleeping space. This may impact on physical health and wellbeing as sleep may be disrupted due to snoring and restlessness of others who share the same sleeping space, causing tiredness and a lack of energy to perform daily tasks.
- Overcrowding may mean that a person may never get any privacy as it would be difficult to find space to relax or unwind. This could negatively impact on mental health and wellbeing as it could increase stress and anxiety levels.

Award 1 mark for an example of housing.
Award 1 mark for how example impacts on one dimension of health and wellbeing.
Award 1 mark for how example impacts on another dimension of health and wellbeing.

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Question 4

- Work environment — a dangerous work environment, such as working on a building site, may increase the risk of injury from falls. These injuries could cause premature death, leading to lower life expectancy.
- Geographic location — living in a remote location where road quality is poor could increase the risk of injury and death from a car accident, which would lead to lower life expectancy.

Examples of other environmental factors include housing, urban design and infrastructure, and climate and climate change.
Award 1 mark for an accurate example of an environmental factor.
Award 1 mark for how the chosen example impacts on life expectancy.

Question 5

Urban structure and design could include the development of parks and gardens, adequate and safe cycling paths and well lit streets and walking paths. If Australians have access to recreational spaces that are safe and well maintained, they are more likely to use them and increase their physical activity. Being active burns kilojoules and helps maintain a healthy body weight which over time will decrease overweight and obesity levels.
Award 1 mark for an example of urban structure and design.
Award 1 mark for how this example could decrease overweight and obesity levels in Australia.

4.5 Differences between Indigenous and non-Indigenous Australians population groups

Question 1

Indigenous Australian males' life expectancy at approximately 70 years is lower than non-Indigenous males by approximately 10 years.
Award 1 mark for a comparison in relation to health status between Indigenous and non-Indigenous Australians.
Award 1 mark for accurate use of data.
***VCAA Assessment Report* note:**
This question was generally well answered, although some students failed to use data as required in the question.

Question 2

Indigenous Australians are more likely to be discriminated against than non-Indigenous Australians. Discrimination often leads to feelings of worthlessness and despair, which may lead to feelings of anxiety and depression. This could explain why Indigenous Australians have poorer mental health than non-Indigenous Australians.
Award 1 mark for a relevant determinant example.
Award 1 mark for how it causes a difference in mental health and wellbeing between Indigenous and non-Indigenous Australians.
***VCAA Assessment Report* note:**
Overall, this question was not answered well by students. Students needed to explain why mental health differs between Indigenous Australians and non-Indigenous Australians. Many students simply stated that there was a difference, without explaining the reasons for the difference.
VCAA Assessment Report high-scoring response:
Indigenous Australians are less likely to engage in physical activity than non-Indigenous Australians. Physical activity enhances mental health, due to the release of endorphins. Thus, a lack of physical activity may increase feelings of anxiety/depression among Indigenous Australians, thus accounting for differences in mental health.

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Question 3

Social – unemployment

Indigenous Australians are more likely to be unemployed than non-Indigenous Australians. Unemployment often leads to feelings of worthlessness and despair as you cannot provide for yourself or your family. This could lead to depression and possibly suicide and may explain why Indigenous Australians have lower life expectancy than non-Indigenous Australians.

Award 1 mark for an appropriate sociocultural factor.

Award 1 mark for an explanation of its role.

Award 1 mark for a link to the difference in life expectancy.

VCAA Assessment Report high-scoring response:

Lack of access to culturally-appropriate healthcare

- Access to healthcare
- Indigenous Australians may find it difficult to find culturally-sensitive healthcare, which could lead to avoiding doctors and nurses so diseases or ill health could go untreated for a period of time, leading to a lower life expectancy for Indigenous than non-Indigenous people (who are more likely to access doctors and healthcare professionals).

Question 4

Indigenous Australians have poorer health status than Non Indigenous Australians, as they have higher prevalence of diabetes mellitus at 15% (age standardised) compared to Non Indigenous Australians at 4.7% (age standardised).

Award 1 mark for a health status difference between Indigenous and non-Indigenous Australians.

Award 1 mark for accurate data from the table.

***VCAA Assessment Report* note:**

Most students were able to interpret and use the data in the table to compare the health status of Indigenous and non-Indigenous Australians. Students needed to cite accurate data in their answer.

The following is an example of a high-scoring response.

Non-Indigenous Australians have a higher health status than Indigenous Australians. The prevalence of diabetes mellitus (age standardised) is lower for non indigenous with 4.7% compared to Indigenous with 15%. Non indigenous have a lower mortality with diabetes as an underlying cause with 15.6 deaths per 1 00 000 compared to 89.4 deaths per 1 00 000 for Indigenous Australians.

Question 5

Award 1 mark for using data in the stimulus material to help explain variations.

Award 1 mark for explaining how socioeconomic status causes variations in health status between the two groups.

Adapted from *VCAA Assessment Report* note:

The material given at the beginning of the question provided some material for students to draw from for their answer to this question. Following is an example of a high-scoring response:

Often Indigenous Victorians have a lower level of socioeconomic status than non-Indigenous Victorians. Socioeconomic status has a large influence on health status. Low health status is often related to low socioeconomic status, for example levels of education are lower hence the Indigenous may not be aware of risk factors for disease, e.g. smoking and the relationship with lung cancer/chronic lung disease as demonstrated above. Socioeconomic status is the prestige associated with education, occupation and income. Indigenous Australians have lower socioeconomic status as a result of a range of cultural, social and environmental factors. They may be unable to access health care as often as non-Indigenous for checkups of primary prevention such as blood pressure checks so they experience a higher degree of circulatory system diseases, e.g. cardiovascular disease. This is also connected with low income, which

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means that they may not purchase nutritious foods rather choose foods high in saturated fats and salt also contributing to circulatory diseases and their shortened life expectancy.

Question 6

a. Food security. Many Indigenous Australians live on government pensions in isolated remote communities compared to non-Indigenous Australians. Lack of money and geographic isolation can create food insecurity due to cost and availability of foods.
Limited food options may mean that the diet is high in processed carbohydrates, which is a risk factor for obesity. This impacts on health status as obesity is a major risk factor for many diseases that lead to premature death, such as CVD, which will cause a decrease in life expectancy.
Award 1 mark for an example of a sociocultural factor.
Award 1 mark for how this example impacts on health status.
***VCAA Assessment Report* note:**
It was important for students to explain the variations between Indigenous and non-Indigenous Australians, not simply describe the impact on Indigenous Australians. Many students did not use the information given in the stimulus material; for example, life expectancy differences, rates for diabetes mellitus, rates of hospitalisations and mortality rates.

b. Biological — body weight. Indigenous Australians are more likely to be obese than non-Indigenous Australians. This contributes to poorer health status, as obesity is a risk factor for diabetes mellitus, which may explain why diabetes mellitus rates are higher for Indigenous than non-Indigenous Australians.
Environmental — Indigenous Australians have poorer access to safe water and sanitation than non-Indigenous Australians. Inadequate water and sewerage systems in remote Indigenous communities may increase infection rates, contributing to higher infant mortality rates than for non-Indigenous Australians.
Award 1 mark for each of two appropriate factor examples.
Award 1 mark for explaining how each example contributes to poorer health status of Indigenous Australians.
Maximum of 4 marks.
***VCAA Assessment Report* note:**
Genetic predisposition/family history was often used to explain diabetes or obesity; however, this was incorrect.
Examples of social determinants could also be used as long as students used a different example from that in Question 1a.

Question 7

Differences may include:

- The prevalence in eye/sight problems was lower in Indigenous than in the total Australian population.
- Musculoskeletal diseases were more prevalent in the total Australian population than in the Indigenous population.
- Asthma and diabetes were more prevalent in the Indigenous population than in the total Australian population.
- The prevalence of eye/sight problems and musculoskeletal diseases were higher in the total Australian population than the Indigenous.

Award 1 mark for each of two accurate differences.

Question 8

Examples may include:

– Indigenous Australians have lower life expectancy than non-Indigenous Australians
– Indigenous Australians have higher infant mortality rates than non-Indigenous Australians

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– Indigenous Australians have higher mortality from cardiovascular disease and cancer than non-Indigenous Australians
– Indigenous Australians have higher rates of suicide than non-Indigenous Australians
– Indigenous Australians have higher rates of diabetes and kidney disease than non-Indigenous Australians
– Indigenous Australians have higher rates of asthma than non-Indigenous Australians
– Indigenous Australians have higher rates of mental health issues, sexually transmitted infections and dental decay than non-Indigenous Australians.

Award 1 mark for each of four valid examples.

4.6 Differences between males and females population groups

Question 1

- Osteoporosis rates were consistently higher in females than males regardless of where they live.
- Osteoporosis rates for both males and females were consistently higher in major cities than in other areas.

Award 1 mark for each trend identified in the graph.

***VCAA Assessment Report* note:**

This question was generally well answered by students who were able to identify trends that were evident in the graph provided. However, some students re-stated the facts that were shown in the graph rather than focusing on the trends that were evident (for example, 1 per cent of males in both major cities and inner regional areas had osteoporosis).

Question 2

Conclusions may include:

- Older males aged 55+ have higher rates of cancer than do females in the same age grouping.
- The rate of diabetes among males aged 55-74 is higher than for females in the same age category.
- Mental disorders are more common in males between 15 and 34 than for females in the same age grouping.

Award 1 mark for each of three valid conclusions.

***VCAA Assessment Report* note:**

Specific statistics from the table did not have to be cited, but students should have used them to guide their answer.

Question 3

Note: In the new study design, factors are rephrased to biological, behavioural and social determinants of health.

Sample answer could include:

Biological:

- Men are more likely to have higher blood pressure and higher blood cholesterol levels than females.
- High blood cholesterol and high blood pressure are risk factors for cardiovascular disease, which may contribute to higher DALYs for cardiovascular disease in males aged 55-74 than females.

Environmental:

- Males are more likely to work in dangerous environments (such as building sites) than females.
- Dangerous work environments increase the risk of injury and may explain why Injury DALYs are higher in men than women aged 35-54 years.

Award 1 mark for a description linked to either biological, sociocultural or environmental factors.

Award 1 mark for linking the description to the broad disease groupings that were set out in Table 2.

Descriptions must link to differences between males and females.

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Question 4

Possible examples include:

- Men experience higher rates of mortality and morbidity than women because they often do not access healthcare services as they have a 'macho' attitude and feel they can tough it out. Therefore, if a national policy was put into place to encourage men to access GPs more regularly, life-threatening diseases such as prostate cancer may be detected early and life expectancy for men may increase.
- Men have higher rates of cardiovascular disease than women so it is important to raise men's awareness of the risk factors associated with cardiovascular disease. A national policy to raise awareness through an advertising campaign on weight control and increasing the consumption of fruits and vegetables may better engage men about their health and reduce deaths from cardiovascular disease.

Award 1 mark for each of two reasons recognising a valid issue associated with men's health that could be linked to:

- accessing health services
- engaging men about their health
- raising awareness of the range of preventable health problems.

Award 1 mark for providing a reason why governments should address this issue in relation to the development of a national men's health policy.

***VCAA Assessment report* note**

The following is an example of a good response.

Men often have a poorer level of health than women as they avoid seeing the doctor or addressing early symptoms as they feel it's unnecessary, not 'masculine'. As a result health problems increase in severity. **[1 mark]** By engaging men about their health they can learn to acknowledge the importance of seeing medical practitioners regularly. **[1 mark]**

Key issues for men regard preventable lifestyle diseases such as cardiovascular diseases, obesity, injury and some cancers. **[1 mark]** By raising awareness of the range of preventable measures that can be applied to reduce health problems, the health status of men can be improved. Men can avoid such illnesses if they are aware of their causes in the first place. **[1 mark]**

Question 5

a. Females have a higher life expectancy at birth than males over time. For example, in 1982 life expectancy at birth for females was approximately seven years higher, and in 2012 life expectancy for females was approximately four years higher than males.

Award 1 mark for an accurate comparison between male and female life expectancy. Data needs to be used to achieve full marks.

***VCAA Assessment Report* note:**

Most students were able to use the information in the graph to identify that females had a consistently higher life expectancy at birth than males between 1982 and 2010–2012.

b. Biological — bodyweight: males are more likely to be overweight/obese than females. Being overweight or obese is a risk factor for many diseases, including cardiovascular disease, that can lead to premature death. This may explain why males have lower life expectancy lower than females.

Biological — blood pressure: males are more likely to have higher blood pressure (hypertension) than females. Hypertension is a risk factor for cardiovascular disease, which is a major cause of premature death in Australia. This may explain why males have a lower life expectancy than females.

Sociocultural — unemployment: males are more likely to experience negative impacts of being unemployed than females. Often males are seen as the provider for their families and may feel their self-worth is based on what employment they have. Being unemployed may make them feel worthless and depressed. Depression is a risk factor for suicide, which is a cause of premature death in Australia and may explain why males have a lower life expectancy than females.

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Sociocultural — peer pressure: males are more likely to be negatively influenced by peer pressure than females. This may increase the risk of death related to injuries, as they are more likely to participate in risky behaviour, such as speeding, if dared to by their mates. This could lead to higher rates of premature death and explain why males have a lower life expectancy than females.
For each factor:
Award 1 mark for an appropriate example of a biological/sociocultural determinant.
Award 1 mark for explaining how this example contributes to variations in life expectancy between males and females.
***VCAA Assessment Report* note:**
Students who were able to identify and explain relevant biological and social determinants were able to answer this question well; however, many students did not select examples that accounted for the differences in life expectancy between males and females.

Question 6
Life expectancy and health adjusted life expectancy are lower for men because they are more likely than women to:
- have high cholesterol levels, which increases risk of premature death from cardiovascular disease
- have high blood pressure, which increases risk of premature death from cardiovascular disease
- be overweight, which increases risk of premature death from cardiovascular disease
- work in dangerous employment, which increases risk of premature death from injuries
- suffer negative impacts of unemployment, which increases risk of premature death from depression and suicide.

Award 1 mark for naming at least one valid reason.
These behaviours may increase the likelihood that men will suffer more lifestyle diseases, such as lung cancer or obesity, than women. Therefore, their healthy life expectancy will be lower, as will their life expectancy **[1 mark]**.

Question 7
Correct Answer is A
The inaccurate statement is that 'males are more likely to have higher rates of cardiovascular disease, osteoporosis and type 2 diabetes than females'. Although males do have higher rates of cardiovascular disease and type 2 diabetes, they have lower rates of osteoporosis than females.

4.7 Differences between high and low socioeconomic status population groups

Question 1
Award 1 mark for any one of the following:
- The lower the socioeconomic status, the higher the incidence rate of selected chronic conditions
- The higher the socioeconomic status, the lower the incidence rate of selected chronic conditions
- The lower the socio-economic status, the higher the incidence rate of diabetes
- The lower the socio-economic status, the higher the incidence rate of asthma
- The lower the socio-economic status, the higher the incidence rate of arthritis
- The lower the socio-economic status, the higher the incidence of oral health rated fair or poor.

Question 2
Education, occupation and income are the most commonly used measures of socioeconomic status.
Award 1 mark for each of two indicators of socioeconomic status.

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Question 3
Premature deaths are higher in males from the lowest socioeconomic status group than those from the highest socioeconomic group by approximately 150 deaths per 100 000 population.
Award 1 mark for the conclusion.
Award 1 mark for supportive data from the graph.

Question 4
Explanation may include:
- Women in the lowest socioeconomic group have a higher prevalence of obesity than women in the highest socioeconomic group
- As socioeconomic status increases, the prevalence of obesity decreases.

Award 1 mark for one valid relationship.

Question 5
The higher the socio-economic status the lower the premature death rate for males aged 15–64 by approx. 150 deaths per 100,000.
Award 1 mark for showing the relationship between socio-economic status and death rate.

Question 6
Answers may include:
- Body weight - people with low socio-economic status (SES) have higher rates of overweight and obesity than people with high SES. Being obese is a risk factor for cardiovascular disease, which if left untreated can lead to premature death. This could explain why those with lower SES have higher rates of premature death than people with high SES.
- Blood pressure - those from a lower SES are more likely to experience higher rates of hypertension than those in higher SES. Hypertension contributes to higher rates of cardiovascular disease. Cardiovascular disease is the leading cause of premature death in Australia. **[1 mark]**
- Glucose regulation - those from a lower SES are more likely to experience high glucose intolerance levels that are a precursor to type 2 diabetes, therefore increasing the burden of disease associated with this. Type 2 diabetes also increases the risk of cardiovascular disease in this population group.
- Birth weight - women from low SES are more likely to give birth to children with a low birth weight. This increases the risk of diseases such as cardiovascular disease and type 2 diabetes later in life and contributes to higher infant mortality rates.

Award 1 mark for identifying a valid biological factor example.
Award 1 mark for explaining how the example contributes to differences in death rates between low and high socioeconomic groups.
***VCAA Assessment Report* note:**
Students who were able to identify a relevant biological determinant were able to answer this question well; however, many students did not provide a biological determinant.

Question 7
Biological risk factors may include:
- males are more likely to be overweight than females
- males have higher blood cholesterol levels than females
- males have higher blood pressure than females.

Award 1 mark for each of three valid biological risk factors.

Question 8
Differences may include:
- low socioeconomic groups have lower life expectancy than high socioeconomic groups
- low socioeconomic groups have higher mortality rates from lung cancer, cardiovascular disease and injuries than high socioeconomic groups

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- low socioeconomic groups have higher infant mortality rates than high socioeconomic groups
- low socioeconomic groups have higher morbidity rates for cardiovascular disease, diabetes, arthritis, mental health issues and asthma than high socioeconomic groups.

Award 1 mark for each of four valid differences in health status.

Question 9

Sociocultural risk factors may include:

- health literacy levels
- unemployment levels
- social exclusion
- access to healthcare
- food insecurity.

Award 1 mark for each of two valid sociocultural factors.

4.8 Differences between those living within and outside of Australia's major cities

Question 1

a. ***VCAA Assessment Report*** **note:**

When interpreting trends, students should not simply state a fact related to one aspect of the data rather than a pattern or trend.

The following are examples of possible responses.

- Cardiovascular disease death rates are consistently higher for men than women regardless of location.
- Males always have a higher death rate from cardiovascular disease than females
- As remoteness increases, the death rate from cardiovascular disease increases
- Males living in major cities have higher cardiovascular disease death rates than females living in major cities.

Award 1 mark for an accurate trend identified.

b. Biological – Blood cholesterol levels

Males generally have higher blood cholesterol levels than females, high blood cholesterol levels are a risk factor for cardiovascular disease and premature death and may explain why males had consistently higher cardiovascular disease death rates than women regardless of location.

Sociocultural – Social norms

Males generally access health care less often than women due to social norms associated with masculinity and toughening out illness and disease. Due to less access to health care high blood pressure and high blood cholesterol levels may go undiagnosed increasing risk of cardiovascular disease and premature death and may explain why males had consistently higher cardiovascular disease death rates than women regardless of location.

Award 1 mark for a relevant example for each of a biological and social determinant of health.

Award 1 mark for explaining how each example contributes to the trend identified in 8a.

VCAA Assessment Report **note:**

While many students were able to correctly identify an example of one social and one biological determinant of health, their choices often made it difficult to apply the example to the trend. Students are advised to read the question and make careful selections to enable them to answer what is being asked. Students should note that access to health care as a social determinant is about the social and cultural reasons why people do not access health care as opposed to the behavioural reasons.

The following is an example of a high-scoring response.

Body weight – men are more likely to be overweight than females. As being overweight is a risk factor for cardiovascular disease, this may help to explain why in all regions, men have higher deaths from cardiovascular disease than women.

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Access to healthcare – men are less likely to access health care due to a 'macho' attitude and social stigma than females. Accessing healthcare may help with early diagnosis of conditions such as cardiovascular disease, which may prevent premature death. This may help to explain why females have lower deaths per 1 00 000 population for cardiovascular disease.

Question 2

Comparisons may include:

- The life expectancy for males decreases according to the remoteness of where they live. Males living in major cities have a life expectancy of 79, compared with 76.5 in remote areas and 72.1 in very remote areas
- The life expectancy for females also decreases according to the remoteness of where they live. Females living in major cities have a life expectancy of 83.8 compared with 81.8 in remote areas and 77.6 in very remote areas.

Award 1 mark for each of two valid comparisons between males and females and where they live.

***VCAA Assessment Report* note:**

Students needed to compare males and females according to remoteness, not simply compare males and females as this was not answering the question. Students needed to use the data in the graph in their answer as the question asked them to use the graph to compare life expectancy for one mark each. If students did not include the data, they did not receive any marks. Students did not have to provide reasons to explain the difference. Students who did provide reasons were not answering the question so may not have achieved any marks.

Question 3

Comparisons may include:

- Asthma: The rates of self-reported asthma are 22% higher in inner regional areas and 8% higher in outer regional and remote areas than in metropolitan areas.
- Injuries: Injury rates are 20% higher in inner regional areas and 21% higher in outer regional and remote areas than in metropolitan areas.
- Overweight/obesity: Overweight/obesity rates are 5% higher in inner regional areas and 12% higher in outer regional and remote areas than they are in metropolitan areas.

Award 1 mark for each of three valid comparisons.

***VCAA Assessment Report* note:**

This question required students to analyse data to draw informed conclusions about the health status of Australians. Students needed to interpret the graph and the data associated with the levels of asthma, injuries and overweight/obesity, and use the data to draw comparisons between metropolitan and inner regional, and metropolitan and outer regional and remote areas. Students were not awarded marks if they simply compared inner regional to outer regional and remote areas as this did not answer the question.

Question 4

Social — food security:

- People in rural and remote areas have poorer food security than people in metropolitan areas.
- Often, fresh food is expensive or has a short shelf life. Therefore, processed foods with longer storage are consumed. These foods can be higher in kilojoules, which if overeaten can lead to overweight and obesity. Obesity is a risk factor for diabetes and may explain why diabetes rates are higher in rural and remote populations.

Award 1 mark for a valid description of how the chosen sociocultural factor varies between those living in rural and remote areas and those living in major cities.

Award 1 mark for a link to health status.

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Question 5

Examples of sociocultural factors may include:

- social isolation
- food security
- unemployment
- socio-economic status.

Award 1 mark for a valid example of a sociocultural factor.

Question 6

Description may include:

- Life expectancy decreases with increasing remoteness.
- Preventable cancers, such as melanoma and lung cancer, are significantly more prevalent in rural and remote areas.
- Men aged 45-64 years living in rural and remote areas are 1.4 times more likely to report depression than those in major cities.
- Comparative health risk factors for people living in rural and remote areas include higher incidence of smoking, higher risk of harmful drug and alcohol use, more unlikely to eat recommended five serves of vegetables a day, slightly more likely to be overweight or obese and more likely to report sedentary behaviour.

Award 1 mark for each of three valid points relating to health status.

Question 7

People living in in rural areas may live long distances from health services such as doctors.
This may impact on health status as, due to distance, rural Australians may not have regular checkups and issues such as high blood pressure may go unchecked, leading to higher cases of cardiovascular disease in rural populations.
Award 1 mark for an example of access to health care.
Award 1 mark for explaining how the example affects health status of rural Australians.

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