TOPIC 2
What are the priority issues for improving Australia’s health?

OVERVIEW
2.1 Groups experiencing health inequities
2.2 High levels of preventable chronic disease, injury and mental health problems
2.3 A growing and ageing population
2.4 Topic review

OUTCOMES
In this topic students will:
• describe the nature and justify the choice of Australia’s health priorities (H1)
• analyse and explain the health status of Australians in terms of current trends and groups most at risk (H2)
• analyse the determinants of health and health inequities (H3)
• devise methods of gathering, interpreting and communicating information about health and physical activity concepts. (H16)
Health authorities and governments have given priority to certain health issues in our society that impact on the health status of Australians. Priority health issues include:

- particular groups experiencing health inequities
- the high levels of preventable chronic disease, injury and mental health problems
- our growing and ageing population.

2.1 Groups experiencing health inequities

The mortality statistics described in topic 1 appear to indicate a generally improved health status for Australians, but unfortunately this is not shared Australia-wide. There are some fundamental differences in the level of health of particular groups in our generally affluent society. These differences exist in terms of:

- the unequal distribution of some illnesses or conditions throughout the population (across different cultures, geographic locations, ages and genders)
- health inequities; that is, the unjust impact on the health status of some groups due to social, economic, environmental and cultural factors, such as income, education, availability of transport and access to health services.

Major indicators — such as the incidence and prevalence of disease and different rates of sickness, hospitalisation and death — point to areas in which inequities exist.

Health is, to a large extent, the result of people’s decisions about health behaviours (such as regular participation in physical activity) and their everyday experiences as they interact and respond to the social, physical and cultural environments in which they live. However, an individual’s level of health is determined by a broader range of factors and not just their health-related decisions. Sociocultural, socioeconomic and environmental factors play a significant role in the achievement of good health. Some factors have the potential for change, such as individuals choosing not to smoke, or governments making roads safer. Other factors, such as an individual’s genetic makeup, are generally not modifiable.

Health is therefore not only the responsibility of the individual. Governments and health authorities recognise that people cannot always choose a particular lifestyle. Health promotion and illness prevention campaigns attempt to address the determinants that have an impact on health or affect people’s ability to
make good decisions about their health. A determinant is a factor that can have an impact on a person’s or group’s health status, either positively (protective factors) or negatively (risk factors). These can be classified as:

- **sociocultural determinants** of health, including family, peers, media, religion and culture
- **socioeconomic determinants** of health, including employment, education and income
- **environmental determinants** of health, including geographical location, and access to health services and technology.

In the following sections we investigate the main groups that experience health inequities in Australia; that is:

- Aboriginal and Torres Strait Islander peoples
- socioeconomically disadvantaged people
- people in rural and remote areas
- overseas-born people
- the elderly
- people with disabilities.

We will analyse each group in terms of:

- the nature and extent of the health inequities
- the sociocultural, socioeconomic and environmental determinants
- the roles of individuals, communities and governments in addressing the health inequities.

### 2.1.1 Aboriginal and Torres Strait Islander peoples

Major inequalities exist in the health status of Aboriginal and Torres Strait Islander peoples. Indigenous people experience a much poorer level of health compared with that of non-Indigenous people, they die at a younger age and are more likely to have a reduced quality of life.

**Nature and extent of health inequities**

Aboriginal and Torres Strait Islander people have:

- lower life expectancy rates at birth for both males and females. Life expectancy for Indigenous people is almost 10 years lower than the life expectancy of non-Indigenous people.
- higher mortality rates at all ages compared with the rates for non-Indigenous people. In the five states/territories with the largest Indigenous populations, 62 per cent of Indigenous males and 54 per cent of Indigenous females who died were younger than 65 years (2016). This compares with the 21 per cent of non-Indigenous males and 13 per cent of non-Indigenous females who died younger than 65 years (2016).
- higher mortality rates from preventable causes compared with Australia as a whole. Death rates were almost three times as high for Indigenous males and females as for the non-Indigenous population.
- high death rates from cancer, diseases of the circulatory system (including heart disease and stroke), injuries (including motor vehicle crashes, homicide and suicide), respiratory diseases (including pneumonia), endocrine, metabolic and nutritional disorders (specifically diabetes), and digestive disorders.
- an infant mortality rate that is twice that for non-Indigenous people.

**Trends** in the health status of Aboriginal and Torres Strait Islander peoples include:

- a decline in death rates from all causes for Indigenous males (reflecting a similar reduction for all Australian males)
- a similar decline in death rates for Indigenous females.
FIGURE 2.2 Proportion of deaths by age group for Indigenous and non-Indigenous people, 2011–15

Source: Licensed from the Commonwealth of Australia under a Creative Commons Attribution 3.0 Australia Licence.
Inquiry

Analyse a graph

1. In figure 2.2, identify the age group that experiences the highest proportion of deaths among:
   (a) Indigenous people
   (b) non-Indigenous people.
2. Compare the proportions of deaths of Indigenous and non-Indigenous Australians in the 0–24 age groups. Suggest reasons for the differences.
3. Propose reasons for the higher proportion of deaths among Indigenous people in the 25–44 years age group compared with the same age group among non-Indigenous people.

Determinants of Indigenous health

Health reports confirm that Aboriginal and Torres Strait Islander people are disadvantaged, compared with other Australians, based on a number of socioeconomic indicators. These include lower levels of education, employment and income. These indicators are linked to higher health risk factors such as smoking, alcohol abuse, poor housing and exposure to violence.

Other socioeconomic and sociocultural determinants of health also play a part in the likelihood of higher health risk factors, such as the neighbourhood in which they live and the quality of social connections with family, friends and community. In some studies of Indigenous communities, people who felt a lack of control over aspects of their lives, or had experienced removal from their natural family, were likely to self-assess their health as ‘fair or poor’.

SNAPSHOT

Significantly higher disease burden for Indigenous Australians — but improvements made

While Indigenous Australians face a substantially higher disease burden than non-Indigenous Australians, improvements have been seen, with more possible, according to a new report released today by the Australian Institute of Health and Welfare (AIHW).

‘Indigenous Australians experienced a burden of disease that was more than twice that of non-Indigenous Australians,’ said AIHW spokesperson Dr Fadwa Al-Yaman.

Chronic diseases caused 64% of the overall burden among Indigenous Australians, with mental & substance use disorders accounting for the largest proportion of the burden (19%). This was followed by injuries including suicide (15%), cardiovascular diseases (12%), cancer (9%) and respiratory diseases (8%).

Just over half (53%) of the overall burden was fatal burden, and males accounted for a greater share of the total than females (54% compared with 46%).

While the gap in disease burden between Indigenous and non-Indigenous Australians remains significant, the report shows some improvements among the Indigenous population in recent years.

‘Between 2003 and 2011, total burden of disease in the Indigenous population fell by 5%, with an 11% reduction in the fatal burden,’ Dr Al-Yaman said.

‘However, over the same period, there was a 4% increase in non-fatal burden. This suggests a shift from dying prematurely to living longer with disease.’

The largest reduction in the Indigenous rate of total disease burden was for cardiovascular diseases. There were also falls in the burden caused by high blood pressure, physical inactivity and high cholesterol.

The Northern Territory and Western Australia had higher rates of Indigenous burden of disease than New South Wales and Queensland (the 4 jurisdictions for which estimates are reported). Large inequalities were also seen across remoteness areas, with Remote and Very remote areas having higher rates of disease burden than non-remote areas.

The report shows that a significant portion of the overall disease burden was preventable.

‘By reducing risk factors such as tobacco and alcohol use, high body mass, physical inactivity and poor diet, over one-third of the overall burden for Indigenous Australians could be avoided,’ Dr Al-Yaman said.
Inquiry
Health inequities for Aboriginal and Torres Strait Islander people
Read the snapshot ‘Significantly higher disease burden for Indigenous Australians — but improvements made’, then answer the following questions.
1. What does the 4 percent increase in non-fatal burden for Indigenous Australians indicate?
2. Identify the areas in the health and socioeconomic status of Indigenous Australians that are:
   (a) improving
   (b) remain significantly worse compared to the general population in Australia.
3. How does Dr Al-Yaman suggest the overall burden for Indigenous Australians could be avoided?

SNAPSHOT
Indigenous smoking deaths on the rise despite people butting out
Smoking-related deaths among Indigenous Australians are likely to continue to rise and peak over the next decade despite big reductions in smoking over the past 20 years, a new study led by ANU has found.
Lead researcher Dr Ray Lovett said the study found the lag between smoking and the onset of smoking-related diseases such as lung cancer means the number of smoking deaths was likely to keep climbing.
‘We have seen significant declines in smoking among Indigenous Australian adults over the past two decades that will bring major health benefits over time,’ said Dr Lovett from the ANU Research School of Population Health.
‘But we’re seeing tobacco’s lethal legacy from when smoking prevalence was at its peak.
‘On the positive side, we’ve seen a 43 per cent reduction in cardiovascular disease deaths, mainly from heart attacks, over the past 20 years among Indigenous people, in large part due to people quitting smoking.’
Smoking rates among Indigenous Australians have dropped from more than half the population in 1994 to two in five adults today. This is still two and a half times higher than the rest of the Australian population.
Dr Lovett said the substantial progress in reducing smoking rates, particularly in the past decade, was a clear sign that further reductions and improvements to Indigenous health could be achieved.
‘We need a continued comprehensive approach to tobacco control, and the incorporation of Indigenous leadership, long-term investment and the provision of culturally appropriate materials and activities is critical to further reducing smoking,’ he said.
Co-researcher Dr Katie Thurber said the team analysed the available national health and death data from the past 20 years to conduct the study.
‘The available data do not provide the full picture of smoking and its impacts for the Aboriginal and Torres Strait Islander population, so it’s important to understand these limitations and work towards improving data in the future,’ said Dr Thurber from the ANU Research School of Population Health.
‘Despite these challenges, we’ve managed to produce the first comprehensive assessment of the tobacco epidemic among Aboriginal and Torres Strait Islander Australians.’
The research paper is published in the Public Health Research & Practice journal.
This issue of the journal celebrates 50 years since the 1967 referendum, when Australians voted to amend the Constitution to allow the Commonwealth to create laws for Indigenous people and include them in the Census.
Source: ANU Research stories, ANU College of Health and Medicine

Inquiry
Smoking amongst Indigenous Australians
Read the snapshot ‘Indigenous smoking deaths on the rise despite people butting out’, then answer the following questions.
1. Outline the key trends revealed in the ANU report on smoking-related deaths among Indigenous Australians.
2. What predictions are made by lead researcher Dr Lovett about the number of smoking-related deaths in the future?
3. What strategies are suggested by Dr Lovett to address a need to reduce smoking rates further?
2.1.2 Socioeconomically disadvantaged people

**Socioeconomic status (SES)** can be broadly measured by income, housing, education level and employment, and how these influence where a person fits into a society over a period of time. People or groups who are characterised by poor levels of education, low income, poor housing and unskilled work or long periods of unemployment are said to be socioeconomically disadvantaged.

There is a consistent relationship between an individual’s socioeconomic status and their health. Socioeconomic disadvantage tends to be a risk factor for ill health. In all age groups, men and women from lower socioeconomic backgrounds have higher mortality and higher levels of illness than those of the more affluent groups in the population. People in the highest SES groups tend to have more choices and resources available to them and they enjoy better health outcomes.

Studies have revealed that, in Australia:

- higher socioeconomic groups have a lower infant mortality rate
- higher socioeconomic groups are better educated about their health — that is, lower education is associated with higher levels of blood pressure in both sexes, higher LDL (low-density lipoproteins) cholesterol levels in women and a higher body mass index in both sexes
- the decline in heart disease death rates is greater in higher socioeconomic groups
- smoking prevalence tends to fall as SES rises. In 2013, of those people 14 years or older, 20 per cent of people with the lowest SES smoked daily, compared with 6.7 per cent of people with the highest SES.
- people of low socioeconomic status appear to be less informed about health
- lower socioeconomic groups make less use of preventative health services such as immunisation, family planning, dental checkups and Pap smears
- people from low socioeconomic groups tend to be sick more often and die younger. People from lower socioeconomic areas have higher rates of mortality overall and for most causes of death. The 20 per cent of Australians living in the lowest socioeconomic areas in 2014–15 were 1.6 times as likely to have at least two chronic health conditions, such as heart disease and diabetes.

**FIGURE 2.3** Prevalence of risk factors and disease by socioeconomic status, 2013–2015 (per cent)

![Risk Factors and Disease by SES](image-url)

*Source:* Australia’s Health 2016-AIHW (Full document) page 184
**TABLE 2.1** Inequalities in certain chronic conditions

<table>
<thead>
<tr>
<th>Condition</th>
<th>Year</th>
<th>Lowest socioeconomic group (%)</th>
<th>Highest socioeconomic group (%)</th>
<th>Rate ratio: lowest/highest socioeconomic group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arthritis</td>
<td>2014–15</td>
<td>19.7</td>
<td>12.1</td>
<td>1.6</td>
</tr>
<tr>
<td>Asthma</td>
<td>2014–15</td>
<td>12.8</td>
<td>9.8</td>
<td>1.3</td>
</tr>
<tr>
<td>Back problems</td>
<td>2014–15</td>
<td>18.9</td>
<td>15.9</td>
<td>1.2</td>
</tr>
<tr>
<td>Chronic kidney disease</td>
<td>2011–12</td>
<td>13.5</td>
<td>8.3</td>
<td>1.6</td>
</tr>
<tr>
<td>Coronary heart disease</td>
<td>2011–12</td>
<td>5.0</td>
<td>2.3</td>
<td>2.2</td>
</tr>
<tr>
<td>Diabetes</td>
<td>2014–15</td>
<td>8.2</td>
<td>3.1</td>
<td>2.6</td>
</tr>
<tr>
<td>Lung cancer incidence</td>
<td>2006–09</td>
<td>52 per 100 00</td>
<td>33 per 100 00</td>
<td>1.6</td>
</tr>
<tr>
<td>Mental and behavioural problems</td>
<td>2014–15</td>
<td>21.5</td>
<td>15.0</td>
<td>1.4</td>
</tr>
<tr>
<td>Oral health rated as fair or poor</td>
<td>2010</td>
<td>31.2</td>
<td>12.2</td>
<td>2.6</td>
</tr>
<tr>
<td>Stroke</td>
<td>2014–15</td>
<td>1.1</td>
<td>0.5</td>
<td>2.2</td>
</tr>
</tbody>
</table>

**Source:** AIHW, *Australia's health 2016*, page 184.

**Inquiry**

**Socioeconomically disadvantaged groups**

1. From Table 2.1, which condition shows the biggest difference between high and low socioeconomic status?
2. What are the reasons behind the health traits of population subgroups that have low socioeconomic status?

In small groups, discuss a health issue that affects socioeconomically disadvantaged groups and list some ways to address the problem. Present your group’s ideas in a short PowerPoint presentation.

**2.1.3 People in rural and remote areas**

About 30 per cent of the Australian population lives in rural or remote areas. The health of people living in rural and isolated areas is poorer than that of people living in city areas. Statistics reveal higher mortality and illness rates for this group. For example, although mortality rates across all regions have fallen in the past ten years, the mortality rate for other regions has remained 10 per cent higher than the mortality rate in major cities. This does not necessarily mean that remoteness equates to poor health. There are individuals and groups within rural and remote communities who are of good health. The poorer health status of Indigenous Australians is to some extent responsible for the higher rates.

People living in rural and remote areas are more likely to:
- be smokers
- drink alcohol in hazardous quantities
- be overweight or obese
- be physically inactive.
Determinants of health in rural and remote areas

Health reports on rural and remote area health have identified socioeconomic and environmental determinants related to higher health risk factors. These include lower levels of education and income compared to metropolitan areas, greater exposure to injury in occupations such as farming and mining, higher risk on the road due to longer travelling distances and lower road quality, and a considerably lower percentage of water supplies that are adequately fluoridated.

People living in rural and remote areas have higher costs of living, in terms of food and fuel prices, although housing costs are lower. This means that the diet of residents in rural and remote areas may be affected because of insufficient access to reasonably priced fruit and vegetables. They also have poorer access to health care compared to people living in metropolitan zones due to distance, cost of fuel, and availability of transport. This lack of access is increased by a shortage and uneven distribution of medical services in rural and remote areas, compared to metropolitan areas.

The health of males living in rural and remote areas is comparatively worse than males living in metropolitan areas in Australia. Studies indicate that one factor is an attitude among men in rural and remote areas that injury and illness is part of normal life, and they are less likely to seek help for chronic conditions. According to surveys, they pay less attention to health-related behaviours than men in metropolitan areas.

Inquiry

Health inequities in rural and remote populations

Read the snapshot ‘Men in regional and rural areas at greater health risk’, then answer the following questions.
1. What is the ‘double disadvantage’ of men living in rural regions, according to the AIHW spokesperson?
2. Identify the health risk factors that are more common among men living outside major cities.
3. Propose why the rates of injury and poisoning are so much higher for men living in remote areas.

Read the snapshot ‘Facts about the inequity of cancer in rural and regional areas’, then answer the following questions.
4. Why is distance a factor in mortality risk from cancer?
5. How is the NSW state government attempting to alleviate this difficulty?

SNAPSHOT

Men in regional and rural areas at greater health risk

Men living in rural Australia are more likely to experience chronic health conditions than their urban counterparts, according to a report by the Australian Institute of Health and Welfare (AIHW). The report, A snapshot of men’s health in regional and remote Australia, shows that male death rates increased with remoteness.

Cardiovascular diseases were responsible for nearly a third of the elevated male death rates outside major cities. Compared with major cities, death rates from diabetes were 1.3 as high for men in inner regional areas and 3.7 as high in very remote areas.

‘There is a strong relationship between poor health and social and economic disadvantage’, said Sally Bullock, from the AIHW’s Population Health Unit.
Compared with urban areas, rural regions of Australia contain a larger proportion of people from lower socioeconomic groups. This fact, combined with the generally poorer health status of men compared with women, highlights a potential double disadvantage for men living in rural areas.

The report also shows that men living outside major cities were more likely to have health risk factors such as daily smoking and risky or high risk alcohol use, than their counterparts in major cities. They were also more likely to have experienced a substance use–related mental disorder throughout their lifetime. Male death rates due to injury and poisoning also increased with remoteness.

The rates of injury and poisoning for men living in very remote areas were over three times as high as for men living in major cities’, Ms Bullock said.

Source: AIHW media release, 14 April 2010.

SNAPSHOT

Facts about the inequity of cancer in rural and regional areas

- Cancer survivors living in rural areas have greater anxiety and distress levels and more emotional wellbeing concerns than cancer survivors living in larger cities.
- For some cancers, remote patients were up to three times more likely to die within five years of diagnosis.
- Radiotherapy often requires daily outpatient treatment for over six weeks. Rural patients need to travel and live away from home for this treatment. In some cases, people choose the type of treatment they have based not on what is needed but on the proximity to home, or worse, they refuse treatment altogether.
- Rural cancer patients are 35 per cent more likely to die within five years of diagnosis than patients in cities.
- There is a 6 per cent increase in mortality risk for each 100 km increment in distance from the nearest radiotherapy facility.
- To help bridge the gap in health outcomes between rural and urban patients in NSW, the State Government has increased allowances for travel and accommodation, to provide accommodation subsidies of $43 for single and $65 per double per night and reimbursement for car travel to 22c per kilometre (IPTAAS).


2.1.4 Overseas-born people

The 2016 Census showed that two thirds (67 per cent) of the Australian population were born overseas. Of the 6.1 million people born overseas, nearly one in five (18 per cent) had arrived since the start of 2012.

The highest proportion of overseas-born people were born in the United Kingdom or New Zealand, followed by China, India and the Philippines.

The health status of migrants varies, depending on their age, socioeconomic status, fluency in the English language and their satisfaction with their life in Australia. It can be affected by sociocultural determinants such as language barriers, stress of relocation, or lack of contact with people from.
their original culture. Generally, though, migrants enjoy a higher level of health than that of the Australian-born population. Statistics reveal lower death rates, lower hospitalisation rates and a reduced incidence of lifestyle-related risk factors; for example, the mortality rate for skin cancer is very low among overseas-born Australians. Known as the ‘healthy migrant effect’, the main reasons appear to be that:

- people who migrate to Australia are generally willing and financially secure; sick or disabled people are less likely to apply
- the government selects migrants based on their health as well as education, language and job skills.

Studies reveal new migrants mostly maintain their traditional diet and eat as a family. As the time of residence in Australia lengthens, the more likely overseas-born Australians are to adopt the Australian lifestyle.

Given the general good health of overseas-born Australians, there are some significant inequities in health between our overseas-born population and Australian-born population, including:

- high rates of mortality from lung cancer for people from the United Kingdom and Ireland
- higher rates of diabetes and cervical cancer in the population groups of Asian origin
- markedly lower death rates for people born in China and Vietnam
- a much lower incidence of skin cancer in overseas-born Australians.

### Inquiry

**Health inequities for Australians born overseas**

1. Why do many new migrants tend to have good levels of health? Discuss these reasons.
2. Why would overseas-born people have lower rates of skin cancer?
3. Why would Asian migrants have higher rates of diabetes and cervical cancer?
4. Draw a web or bubble map to summarise the ways in which the Australian culture might have a negative impact on the health of some migrant groups over time.

#### 2.1.5 The elderly

Older Australians (65 years or older) make up a growing proportion of the Australian population. Australia has an ageing population. The population in Australia aged 65 or over increased from 1.1 million in 1971 (8 per cent of the population) to more than 3.7 million in 2016 (15.7 per cent).

Socioeconomic indicators such as higher education and income levels, and supportive social environments all contribute to a higher likelihood of elderly people maintaining good health.

Coronary heart disease is the leading cause of death among Australians, in the older population overall. The most commonly reported health conditions for Australians aged 65–74 are vision and hearing loss, high blood pressure and related conditions, and osteoarthritis. The high levels of these conditions within this age group are often associated with some degree of disability, which places a large financial burden on the health system. In 2015, the prevalence of older people living with disability decreased.
Dementia is another significant health condition in this age group and is more prevalent in females, mainly because they live longer. Dementia is a condition characterised by a significant loss of intellectual abilities such as memory capacity. In 2016, Dementia and Alzheimer’s disease became the leading cause of death among women. Dementia accounted for 8.3 per cent of all deaths in 2016, up from 5.3 per cent of all deaths in 2007.

SNAPSHOT

Baby boomers hitting the bottle and bongs at alarming levels, health experts warn

Young people usually get the blame for binge drinking, but Australian health experts say it’s their parents and grandparents who are abusing drugs and alcohol at an alarming rate.

Key points:

- Binge drinking on the rise among those over the age of 40
- Australians over 50 also have higher rates of illicit drug use than younger people
- Researchers say new education campaigns are needed to help older drug users

In the UK and Australia, binge drinking is on the decline among all age groups — except those over the age of 40. Researchers from the South London Maudsley NHS Foundation Trust and Flinders University in Adelaide are calling for a coordinated global approach to boozing boomers.

‘Alcohol misuse in the older population may increase further as baby boomers get older because of their more liberal views towards, and higher use of, alcohol,’ the researchers wrote in the British Medical Journal.

However, scientists found baby boomers were not just hitting the bottle harder than their children.

‘In Australia, the largest percentage increase in drug misuse between 2013 and 2016 was among people aged 60 and over, with this age group mainly misusing prescription drugs,’ they said.

‘Cannabis use among older people is also startlingly high.

‘People over 50 have higher rates than younger age groups for both past year and lifetime illicit drug misuse, notably cannabis,’ the researchers said.

Boomers’ drug use started in teenage years.

Lead author Ann Roche, from the National Centre for Education and Training on Addiction at Flinders University, has previously found the overwhelming majority of cannabis users in this age group began using as teenagers and it continued into their older years.

She said new education campaigns were needed to help older drug users.

The number of people over 50 receiving drug and alcohol treatment is expected to treble in the United States and double in Europe by 2020.

‘A lack of alcohol screening to detect risky drinking may result in a greater need for treatment, heavier use of ambulance services and higher rates of hospital admission,’ they said.

Researchers said drug and alcohol services would need to improve their knowledge and skill in assessing and treating older people misusing opioid drugs, cannabis, and drugs for pain and anxiety.

‘The clinical complexity of older adults with substance misuse demands new solutions to a rapidly growing problem,’ the authors said.

Public health challenges will increase

Professor Steve Allsop from the National Drug Research Institute at Curtin University said alcohol and other drug-related problems among older Australians were critical public health challenges that would increase in coming years.

‘The increase in the proportion of Australians over the age of 50, levels of alcohol and other drug consumption, and the particular risks for ageing Australians sees this issue impact on our drug specialist and our aged care services and across our community,’ he said.

Dr Terry Slevin from the Cancer Council’s occupational and environmental cancer risk committee said the link between alcohol and cancer risk remained under-recognised in the community.

Alcohol consumption is known to increase a person’s chances of developing cancer of the liver, mouth, bowel and breast.

‘Evidence from Western Australia suggests campaigns to highlight this connection are effective in encouraging older drinkers to reconsider their consumption,’ Dr Slevin said.

Inquiry
Health inequities for elderly people
Read the snapshot ‘Baby boomers hitting the bottle and bongs at alarming levels’, then answer the following questions.
1. What trends are emerging from the latest statistics on the elderly and their use of prescription drugs?
2. Suggest reasons for these trends.
3. Choose a topic that relates to a health issue for elderly Australians such as physical activity, Alzheimer’s disease, eye health, healthy bones or blood pressure over 60. The weblink Ageing and health issues can help you find information. Write a short report on how the health issue can be addressed to improve the health status of elderly people.

Weblink: Ageing and health issues

2.1.6 People with disabilities
Disability is defined in terms of the lack of ability to perform everyday functions or activities. It refers to limitations in functional abilities. It can be measured along a continuum. Components of functioning and disability reflect an interaction between the health condition of the person and his or her environment.

The disability prevalence rate in Australia has remained relatively stable over time. In 2015, 4.3 million people (18.3 per cent), or one in five Australians, reported living with a disability. The conditions that cause disability tend to increase with age. In 2015, 8.2 per cent of 15–24 year olds were affected by disability, compared to 16.4 per cent of 45–54 year olds, 37.8 per cent of 65–69 year olds and 85.4 per cent of people 90 years and over.

The actual number of people living with a disability is increasing as a result of the ageing population. Statistics reveal that the numbers of Indigenous people living with severe disability are more than double that of other Australians.

People with disability have significantly worse health outcomes than the general population. The Australia’s Health 2016 report refers to survey data in 2011–12 that shows that 51 per cent of people aged 15–64 with a severe or profound disability reported poor or fair health, compared with 5.6 per cent for those without disability.

By 2019, the National Disability Insurance Scheme (NDIS) will support about 460 000 Australians living with permanent and significant disability under the age of 65 years. The scheme started in July 2013 as a trial in four locations and is being introduced in stages around Australia. It aims to provide support to people with disability to build skills and capability so they can participate in the community and employment through access to appropriate services.

Determinants of health for disabled people
Disabled people in Australia have lower incomes and are more likely to live in poverty than people without a disability. This is partly due to lower education and employment levels compared to the general population. Lack of job opportunities or not having a job then limits opportunities for social connections. The health of disabled people can be affected if they are socially excluded or marginalised. They may also face violence and discrimination related to their disability.
The majority of disabled people live in households rather than accommodation establishments. They can be disadvantaged by living in poor quality housing or be affected by living in accommodation that is inappropriate for their disability.

Disabled people are generally more likely to smoke and have insufficient physical activity than non-disabled people, but have a lower incidence of alcohol misuse. People with a severe or profound disability are more likely to be overweight or obese.

**SNAPSHOT**

**Two in five Australians over 65 years live with a disability**

The likelihood of living with a disability increases with age. Two in five people with disability were aged 65 years or older. According to new figures released today by the Australian Bureau of Statistics (ABS), 4.3 million people (18.3%) of Australia’s population lived with a disability in 2015. The main disabling conditions reported were back problems and arthritis. Between 2003 and 2015 the proportion of people with a disability decreased by 0.7 percentage points, mainly due to decreases in the prevalence of arthritis, back pain and asthma. However, the number of people with a disability has increased along with population growth. During the same period, there has been little change in the proportion of the population with the most severe types of disabilities — those people who always need help or supervision with their mobility, communication and/or self-care. This group has remained relatively steady at approximately 3.1% (722 100 people) of Australia’s population (634 600 people in 2009).

While there have been significant improvements to support those with a disability in many parts of their lives, little improvement has been made in key areas of everyday life over the last six years:

- labour force participation remained low at around 53%, compared to 83% for people without disabilities; and
- people with disability aged 15–24 years were 10 times more likely to report the experience of discrimination than those aged 65 years and over.

Both of these factors may have impacts on the social and economic well-being of people with a disability.

*Source: ABS Disability, Aging and Carers Australia: Summary of Findings 2015.*

**Inquiry**

**Health inequities for disabled people**

Read the snapshot ‘Two in five Australians over 65 years live with a disability’, then answer the following questions.

1. (a) What is the trend in Australia for:
   i. the proportion of people living with a disability?
   ii. the proportion of people who are severely disabled?

(b) The two socioeconomic determinants of health that are compared for disabled and non-disabled people are labour force participation and Year 12 attainment. Suggest how they could affect the health risk factors of people with disabilities.

2. An example of an organisation that supports people with disabilities is the Royal Institute for Deaf and Blind Children (RIDBC). Find out more about how the RIDBC meets the needs of children with hearing or vision impairment.

**Application**

**Groups experiencing health inequities**

1. In groups, consider Aboriginal and Torres Strait Islander peoples and one other group experiencing health inequities. For these two groups, research the:
   (a) nature and extent of their health inequities
   (b) sociocultural, socioeconomic and environmental determinants
   (c) roles of individuals, communities and governments in addressing their health inequities.

2. Share your findings with the class in a short oral presentation.
2.2 High levels of preventable chronic disease, injury and mental health problems

Figure 2.7 shows the chronic, but preventable, health problems that contribute significantly to the burden of disease and illness in the community. It is possible to identify the risk factors for these diseases and illnesses, the determinants of health, and ways that behaviours can be modified, to help reduce the impact of such health ailments. If health authorities and governments give priority to combating the high prevalence of such diseases and illnesses, the health status of Australians is likely to be improved.

**FIGURE 2.7** The range of preventable chronic diseases and illnesses that are priority issues for Australia's health

### Inquiry

**Chronic disease risks embedded in Aussie lifestyle**

Read the snapshot ‘Chronic disease risks embedded in Aussie lifestyle’, then answer the following questions.

1. Identify the lifestyle behaviours that can contribute to chronic disease.

2. (a) Which is the most common risk factor for chronic disease?
   - (b) Which chronic diseases is this risk factor particularly linked to?
   - (c) How does having multiple risk factors affect the likelihood of having some chronic disease, for men and women?

3. Access a copy of the report *Risk factors contributing to chronic disease 2012*. Use a mind map to represent the key findings in the Summary near the start of the report.

**SNAPSHOT**

**Chronic disease risks embedded in Aussie lifestyle**

Most Australians have at least one preventable risk factor for chronic disease, according to a new report released today by the Australian Institute of Health and Welfare (AIHW).

The report, *Risk factors contributing to chronic disease*, provides a comprehensive picture of the lifestyle behaviours of Australians that can contribute to chronic diseases such as arthritis, Type 2 diabetes, depression, asthma and osteoporosis.
Diet is a very common risk factor for chronic disease, with over 90% of Australians failing to consume the recommended amounts of vegetables each day, and only half consuming enough fruit.

“This is important because we know that people with low fruit and vegetable intake have higher risks of chronic diseases such as heart disease and Type 2 diabetes”, said AIHW spokesperson Ann Hunt.

The report also found that around 60% of Australians do not do enough physical activity to gain sufficient health benefits.

As a person’s number of risk factors increases, so too does their likelihood of having some chronic diseases. For example, men with five or more risk factors are twice as likely to report depression than men with two or fewer risk factors. Similarly, women with five or more risk factors were three times more likely to report stroke, and two and a half times more likely to report depression, than women with two or fewer risk factors.

The report also shows that certain risk factors commonly occur together. ‘People who consume alcohol at risky levels are more likely to report daily smoking than those who don’t, and daily smoking is also more commonly reported by those who have insufficient levels of physical activity’, Ms Hunt said.

Source: AIHW, media release, 27 March 2012.

2.2.1 Cardiovascular disease (CVD)

Cardiovascular disease (CVD) refers to damage to, or disease of, the heart, arteries, veins and/or smaller blood vessels. It has been identified as a health priority area because it is a major health and economic burden on Australia. It is one of the leading causes of sickness and death in Australia (almost 30 per cent of all deaths in 2015), although there are significant differences in the incidence and prevalence of the disease among population subgroups. Males are more likely than females to die from the disease, for example, and Indigenous people die from the disease at twice the rate of the total population.

Cardiovascular disease can be attributed to a number of modifiable risk factors. The potential for change is evident and recent statistics reveal a decline in the death rate from coronary heart disease.

The nature of cardiovascular disease

Cardiovascular disease is a general term covering all diseases of the heart and circulatory system. The three major forms of this disease are:

- coronary heart disease — the poor supply of blood to the muscular walls of the heart by its own blood supply vessels, the coronary arteries
- stroke — the interruption of the supply of blood to the brain
- peripheral vascular disease — diseases of the arteries, arterioles and capillaries that affect the limbs, usually reducing blood supply to the legs.

Cardiovascular disease is most evident as stroke, heart attack, angina, heart failure and peripheral vascular disease. Atherosclerosis is the underlying cause of most of these conditions.

Atherosclerosis

Atherosclerosis is the build-up of fatty and/or fibrous material on the interior walls of arteries. This build-up hinders the flow of blood to the body’s tissues and also acts to increase blood pressure. Often, the build-up occurs in patches known as atheroma or plaque, and is characterised by the presence of cholesterol. Atheroma is a thickened area of fatty and fibrous deposits on the inside surface of arteries, resulting in atherosclerosis. Cholesterol is a fatty substance contained in all animal cells. The development of atheroma tends to decrease the elasticity of the arteries and limits the flow of blood.
The development of atherosclerosis may occur in any artery in the body, but it is of greatest threat to an individual’s health when it is present in the arteries leading to the brain, the eyes or legs, or the heart. The major function of the heart is to supply the body with oxygen-rich blood. To perform continual intense exercise, the heart requires a supply of oxygenated blood, which it receives via its own blood supply vessels — the **coronary arteries**. The presence of atherosclerosis in the coronary arteries reduces the much needed supply of blood, depriving the muscle of oxygen and hindering the functioning of the heart. High blood pressure, smoking and a diet rich in fat accelerate the development of atherosclerosis.

**Arteriosclerosis**

Arteriosclerosis (the hardening of the arteries) is a degenerative disease that affects most people to some extent as part of the process of ageing. It often begins in childhood. A form of atherosclerosis, it develops as the fatty or fibrous deposits build up and the arteries become harder and less elastic.

**Coronary heart disease**

Coronary heart disease (also called ischaemic heart disease) manifests as a heart attack or angina.

**Heart attack**

A heart attack is also known as **myocardial infarction**, **coronary thrombosis** and **coronary occlusion**. Generally caused by the complete closure of a coronary artery by atherosclerosis, it may also occur when a blood clot forms and blocks a narrowed artery (thrombosis).

The efficient functioning of the heart relies on a regular oxygenated blood flow, so the cessation of the flow to any part of the heart results in tissue death. This is a heart attack. It can result in sudden death or the impaired function of the heart muscle, such as occurs with arrhythmia (that is, the disturbed rate and rhythm of the heartbeat). Alternatively, the area of damage may be minimal and the individual can resume everyday activity. During the healing process following a heart attack, nearby arteries grow new branches to supply the damaged tissue.

Common symptoms are associated with heart attacks. They include:

- sudden collapse or unconsciousness
- shortness of breath, nausea, vomiting, excessive sweating
- chronic pain, lasting for hours or days
- acute pain, extending to the shoulders, neck, arms and jaw
- pain felt
  - as a burning sensation in the centre of the chest, between the shoulder blades or behind the breast bone.

Some of these signs may also be associated with other illnesses and they are often mistaken for indigestion, for example.
Some sufferers may not exhibit the typical signs. They may not experience any pain or discomfort and this type of attack is referred to as a silent infarction, which can be diagnosed by electrocardiograph (ECG) readings.

**Angina pectoris**

Angina pectoris is the medical term used to describe the chest pain that occurs when the heart has an insufficient supply of oxygenated blood. Therefore, angina is not really a disease but, rather, a symptom of oxygen deprivation.

The pain of angina may be experienced by a heart attack sufferer or someone who has never had, and never will have, an attack. Angina is generally caused by coronary atherosclerosis. The narrowed arteries allow enough oxygenated blood to flow to the heart to enable everyday activity, but chest pain or tightness occurs when the heart becomes overloaded by exertion, excitement or overeating. In most cases, rest relieves the pain and the heart muscle recovers without permanent damage.

Angina varies in the degree of attack intensity and the sufferer’s future health is affected by the seriousness of the attack. Most people are able to continue with their everyday activities. Some may restrict the amount of physical activity they perform, to avoid the pain; others are not even aware they have a heart problem.

**Stroke**

A stroke results from a blockage of the blood flow to the brain. It may occur in a similar fashion to a heart attack. Known medically as a cerebrovascular accident, a stroke occurs either when the blood supply to the brain is interrupted by a clot or atherosclerosis, or when a burst blood vessel haemorrhages into the brain.

Hypertension is a risk factor for a stroke. Blood vessels directly damaged as a result of high blood pressure tend to either rupture more easily or result in an aneurysm (which may eventually result in a rupture). The bleeding following the rupture increases the pressure within the cranium and may lead to the death of some tissue due to lack of oxygen.

The effect of a stroke on the functioning of the body can be severe, even though the damaged area appears to be quite small. If the affected artery is large, then paralysis of one side of the body may occur; on the other hand, if the damage occurs in the dominant hemisphere of the brain, then the individual may lose the ability to speak.

In many strokes and heart attacks, the actual breakdown is the end product of many years of fatty and fibrous tissue build-up associated with atherosclerosis. This underlying cause may have gone unnoticed for up to 40 years.

**Heart failure**

Heart failure is a reflection of the heart’s inability to cater for the demands placed on it during everyday life. Atherosclerosis, heart attacks, high blood pressure, defective heart valves and infections of the heart may mean the heart cannot contract sufficiently to supply the body with its oxygen requirements. Such a condition generally occurs because the heart is unable to compensate for the damage caused by one of the above problems.

The term heart failure may be misleading because it implies that the heart has stopped beating. This is not the case. The ventricles of the heart may not be affected equally or simultaneously. The extent of the damage is determined by the cause of the heart failure. Failure in the left side of the heart is most often the result of a
heart attack, although continual high blood pressure may also be a cause. Blood accumulates in the lungs and the sufferer may experience repeated breathlessness, which is a major symptom.

Failure in the right side of the heart causes pressure to build up in the right atrium, so blood cannot return to the heart from the body in the usual way. Blood may accumulate in the veins and an excess of fluid accumulates in the body’s tissues. The parts of the body most obviously affected are the legs and the liver.

Strain and distress in one side of the heart is closely followed by failure of a similar degree in the other side. The symptoms are compounded and the sufferer generally experiences an overall feeling of fatigue because the heart is unable to supply the body’s muscles with an adequate supply of oxygenated blood.

**FIGURE 2.11** The effects of heart failure

Right heart failure
- Decreased blood flow to lungs
- Increased venous pressure in neck and legs
- Oedema (fluid retention)
- Enlargement of heart to compensate for the problem

Left heart failure
- Decreased blood flow
- Reduced exercise tolerance
- Weakness
- Confusion
- Difficulty breathing
- Stiff lungs

**Peripheral vascular disease**

**Peripheral vascular disease** is the result of reduced blood flow to the legs and feet, usually due to atherosclerosis and/or arteriosclerosis. It usually affects the arteries, arterioles and capillaries of the legs and feet. The blood supply to the muscles of the legs or to the skin is damaged by atherosclerosis and/or arteriosclerosis. Given a slowed flow of blood to the leg muscles, walking results in a cramping feeling.

The warning signs of impaired circulation to the legs and feet are tingling sensations in the feet and tightness (cramping) in the legs and buttocks, particularly after exercise. In extreme cases the disease can lead to gangrene and subsequent amputation of the foot or limb. Significantly, nine out of 10 people with peripheral vascular disease are smokers.

**The extent of cardiovascular disease in Australia**

The Heart Foundation reports that one in six Australians are affected by cardiovascular disease, accounting for more than 4.2 million people. This broad group of diseases has been a major cause of death for many decades. The Australian Institute of Health and Welfare *Trends in cardiovascular deaths* (2017) reports that in 2015, it was the second leading cause of death (almost 45 400 deaths or 29 per cent of total deaths), closely behind all types of cancer. Over the 35 years from 1980 to 2015, the steady decline in cardiovascular disease death rates that began in the late 1960s has continued. The age-standardised death rate for cardiovascular disease fell by 73% from 560 to 151 deaths per 100 000 people.

**Mortality**

Cardiovascular disease accounted for 29 per cent of all deaths among Australians in 2015. The mortality rates for Australians reveal:

- Ischaemic heart disease (also known as coronary heart disease) is the leading cause of death in the population overall. It accounted for 12 per cent of all deaths in 2015. The death rate has decreased by more than a third from 99.1 deaths per 100 000 people in 2007 to 62.4 per 100 000 in 2016.
- Cerebrovascular disease or stroke is the next leading cause of cardiovascular disease death, accounting for 7 per cent of all deaths in 2015.
Death rates in Australia from cardiovascular disease have declined considerably over recent decades and show signs of continuing to fall. Although the cardiovascular death rates continue to decline overall, the rates of decline in younger age groups have slowed relative to the improvements made in older age groups. There has been a decline in mortality from stroke in recent decades for both males and females. Strokes largely occur in people aged 60 years or older.

The declining prevalence of cardiovascular disease is mainly due to:

- a reduction in the levels of risk factors. The implementation of prevention strategies has led to a reduction in smoking levels, increased monitoring of hypertension levels and diet modifications, for example.
- improved medical care and treatment, which have led to reduced mortality and improved quality of life.

**SNAPSHOT**

**Cardiovascular disease: most deaths and highest costs, but situation improving**

Cardiovascular disease (CVD), when considered as a broad group of diseases, has been a major cause of death for many decades. In 2015, it was the second leading cause of death, closely following all types of cancer, according to a report, *Trends in cardiovascular disease 2017*, released by the Australian Institute of Health and Welfare (AIHW). CVD also imposes a burden of disease, measured in terms of disability and premature death.

However, death rates for all the major types of CVD — coronary heart disease, stroke, heart failure, rheumatic heart disease and peripheral vascular disease — have fallen significantly in the past 35 years. ‘The overall death rate for CVD has fallen by about 82% since 1982 and continues to fall.’ There is evidence that falls in the death rate from some forms of cardiovascular disease have accelerated in some older age groups, but have slowed in younger age groups in the recent past. The slowing of falls in cardiovascular disease death rates are concerning given the high disease burden and the potential social and economic impacts.

The main risk factor for CVD is age, with older people having much higher hospitalisation and death rates than younger people. The modifiable risk factors include smoking, being overweight, excessive alcohol use, inactivity, high blood pressure, cholesterol and poor diet. All can be changed to reduce the risk of CVD. As the death rates from cardiovascular disease fell, rates from other diseases, such as dementia, rose. Dementia in 2016 became the leading cause of death for females and the third leading cause of deaths for males.

**Source:** AIHW Trends in Cardiovascular disease September 2017 and ABS Leading causes of death 2016.

**Inquiry**

**Trends in CVD**

Read the snapshot ‘Cardiovascular disease: most deaths and highest costs, but situation improving’, then answer the following questions.

1. How is ‘burden of disease’ measured, and where does CVD rank compared to other diseases using this measure?
2. Is the death rate from CVD increasing or declining?
3. What are the health risk factors for CVD that people can modify to reduce the risk of CVD?

**Morbidity**

Cardiovascular disease is a leading cause of disability, with around 1.4 million Australians estimated to have a disability associated with cardiovascular disease. Cardiovascular disease accounted for six per cent of hospitalisations in 2013–14. Of these, 31 per cent were due to coronary heart disease.

**Risk factors and protective factors for cardiovascular disease**

The major risk factors for developing cardiovascular disease include some that cannot be controlled or modified. These include:

- a family history of heart disease. People with a family history of heart disease tend to be more likely to develop cardiovascular disease.
- gender. The cardiovascular disease death rate in men aged up to 50 years is higher than that in women. This difference is thought to be related to female hormones. It is thought that the hormone oestrogen is
a protective factor for cardiovascular disease. Protection is not so apparent after menopause when oestrogen levels drop.

- **advancing age.** The risk of cardiovascular disease increases with age.

Major risk factors that can be reduced or eliminated by lifestyle changes or medical treatment include:

- **smoking.** This is the most significant modifiable risk factor. The risk of heart attack and stroke is doubled by heavy smoking. The risk of sudden cardiac death is also higher. These risks decrease when smoking stops and as the non-smoking period lengthens.

- **raised blood fat levels.** Generally, the higher the blood cholesterol and triglyceride levels, the higher the risk of heart disease. A diet high in saturated fat can raise blood cholesterol levels.

- **high blood pressure.** The risks of heart disease, stroke and heart failure all increase with hypertension. High blood pressure can overload the heart and blood vessels, and speed up atherosclerosis.

- **obesity and overweight conditions.** These are thought to increase directly the risk of heart disease. They also contribute to other risk factors such as high blood pressure, high blood cholesterol and diabetes. Seventy per cent of Australian males and 63 per cent of Australian females were overweight or obese in 2014–5. Twenty-five per cent of children in Australia were overweight or obese in that period.

- **abdominal obesity.** This is measured by the waist-to-hip ratio. A ratio of 1.0 for men and 0.9 for women indicates excessive abdominal obesity. It is a good indicator of an individual’s risk of developing chronic disease.

- **physical inactivity.** The association of inactivity with obesity, high blood pressure and high fat levels makes it a significant contributor to the development of heart disease.

Other risk factors also exist, but are not considered to be as important because either they occur in a minority of cases or the evidence connecting them to cardiovascular disease is inconclusive. These factors include:

- **diabetes.** This condition generally damages blood vessels and the arteries tend to develop atherosclerosis as a result.

- **the contraceptive pill.** Use of the pill can increase a woman’s risk of heart and blood vessel disease. This risk particularly applies to those women using the contraceptive pill who also smoke, have high blood pressure, have diabetes, are aged 35 years or more, or have a family history of the disease.

### TABLE 2.2 The sociocultural, socioeconomic and environmental determinants of cardiovascular disease

<table>
<thead>
<tr>
<th>Sociocultural determinants</th>
<th>People with a family history of CVD are more at risk.</th>
<th>Asian people are less prone to getting CVD due to a generally low-fat diet.</th>
<th>Aboriginal and Torres Strait Islander peoples are more at risk as they are associated with having a lower socioeconomic status and lower education levels.</th>
<th>Media exposure of the effects of smoking on health have led to a reduction in smoking rates and therefore a declining trend for CVD rates.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Socioeconomic determinants</td>
<td>People with a low socioeconomic status or who are unemployed have higher death rates because income can limit health choices, such as purchasing fresh fruit and vegetables and using exercise facilities.</td>
<td>People with low education levels are more at risk as poor education is linked to poor health choices and less knowledge about how to access and use health services.</td>
<td>People living in rural and remote areas are more at risk, as they tend to have less access to health information, health services and technology, such as electrocardiogram monitors.</td>
<td></td>
</tr>
<tr>
<td>Environmental determinant</td>
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<td></td>
</tr>
</tbody>
</table>

Excessive alcohol consumption (which contributes to excessive weight) and uncontrolled stress can also increase the disease risk by influencing the other risk factors indirectly.
The major factors that reduce the chance of developing cardiovascular disease include:
- regular physical activity
- eating a diet low in saturated fat and cholesterol
- low consumption of alcohol
- consuming a diet low in salt
- maintaining a healthy weight
- appropriately managing stress
- avoiding exposure to tobacco smoke.

**Groups at risk of developing cardiovascular disease**

The groups that have the greatest risk of developing cardiovascular disease include:
- tobacco smokers
- people with a family history of the disease
- people with high blood pressure levels (hypertension)
- people who consume a high-fat diet (which leads to raised blood cholesterol and triglyceride levels)
- people aged over 65 years
- males
- blue-collar workers (labourers and tradespeople who may have higher levels of smoking, alcohol consumption and high-fat diets).

**Inquiry**

**Cardiovascular disease**

1. Identify the three most common forms of cardiovascular disease.
2. Outline how arteriosclerosis contributes to cardiovascular disease.
3. What are the major sociocultural, socioeconomic and environmental determinants of cardiovascular disease? Present your response in a mind map.

**2.2.2 Cancer**

In 2017, it was estimated that 134,174 cases of cancer would be diagnosed in that year. Although survival rates are improving due to early detection strategies and improved treatments, the incidence of several types of cancer is increasing.
The nature of cancer

Cancer refers to a diverse group of several hundred diseases with a common feature — the uncontrolled growth and spread of abnormal body cells. It involves a mutation and is believed to originate from a single cell whose genetic material has been influenced or damaged by some foreign agent. The changed cell divides and multiplies uncontrollably, transferring its damaged genetic material to its offspring cells. Eventually, a tumour develops and cells that would normally work together for the benefit of the tissue continue to multiply independently, starving other nearby cells of nourishment. This group of cells is now referred to as a neoplasm.

There are two quite different types of tumour.

1. Benign tumours are not cancerous. They generally grow slowly, surrounded by a capsule that tends to control their spread. Usually, the cure is surgical removal. Benign tumours may cause some damage by robbing surrounding tissue of necessary nutrients, or interfering with the function of vital organs.

2. Malignant tumours are cancerous. Without the restraints of a controlled capsule, they can spread to other parts of the body, starve surrounding tissue of necessary nutrients and invade healthy tissues. These tumours cause sickness and death.

Metastases are secondary or new tumours. They may develop some distance from the original malignant tumour, because the malignant tumour has the ability to invade surrounding tissues, blood vessels and lymphatic channels, spreading into either the bloodstream or lymph fluid and travelling to other parts of the body. Both metastases and malignant tumours are then capable of spreading to many sites throughout the body, thus affecting the whole body with the disease.

FIGURE 2.13 Differences between the formation of normal and cancerous cells
Cancers are often incorrectly assumed to have their own peculiar cause, but this is not the case. Cancer can evolve from a variety of cell types, and affects many tissues and organs throughout the body.

Cancer is generally classified according to the type of cell in which it originates. Medical experts suggest that around 90 per cent of cancers are products of an individual’s environment and lifestyle. Carcinogens are agents that are known to cause cancer. They include chemicals, pollution, radiation, cigarette smoke, dietary factors and alcohol. But the precise causes of cancer remain a mystery. Different countries experience different degrees of incidence of cancer in different body sites. Varying environmental factors from one country to another may play a major role in this variation in incidence.

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**TABLE 2.3** Cancer classifications and sites

<table>
<thead>
<tr>
<th>Classification</th>
<th>Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carcinoma</td>
<td>Skin; membranes lining the respiratory, gastrointestinal and urinary tracts; the breasts</td>
</tr>
<tr>
<td>Sarcoma</td>
<td>Bones; cartilage; muscles</td>
</tr>
<tr>
<td>Leukaemia</td>
<td>Blood-forming organs such as bones; the liver; the spleen</td>
</tr>
<tr>
<td>Lymphoma</td>
<td>Infection-fighting organs (glands and the spleen)</td>
</tr>
</tbody>
</table>

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**The extent of cancer in Australia**

The prevalence of cancer in the Australian population is increasing. At current Cancer Australia estimates, one in two males and one in two females will develop cancer before the age of 85. Recent findings suggest that cancer contributed to 19 per cent of the total disease burden in Australia.

**Incidence**

Cancer is the only major cause of death in Australia that is increasing in incidence in both sexes. The most significant increases in the past two decades have been for breast cancer, skin cancer and melanoma (malignant skin cancer) and prostate cancer. The main reasons for the increases in incidence are:

- the ageing of the population
- better detection of cancer
- new diagnostic technology and screening programs
- better reporting of cancer (which is mandatory by health-care personnel).

The most common cancers in Australia are non-melanoma skin cancers, which are often self-detected and usually removed by a general practitioner. The most frequently occurring life-threatening cancers include:

- prostate cancer, colorectal cancer, melanoma and lung cancer in men
- breast cancer, colorectal cancer, melanoma and lung cancer in women.

Cancer occurs more frequently in males than in females, except among young and middle-aged women. The cancer rate in women in the 25–54 years age group is almost three times that in males in this age group, reflecting the prevalence of female cancers (cancers of the cervix, breast, ovary and uterus).
Mortality

All forms of cancer accounted for around 30 per cent of all deaths in Australia in 2017 — with more males dying from cancer than females. In 2017 the major types of cancer that account for deaths in Australia include lung, bowel, prostate, breast, head and neck, and pancreatic cancers.

Lung cancer is the major cause of cancer death. Lung cancer death rates have declined in men and increased in women (reflecting the rising number of female smokers since the 1940s), yet the male rates are still three times those of women.

The overall cancer mortality rate fell slightly from 1991–2017. The age standardised death rate for all cancers decreased from 210 per 100 000 in 1991 to 161 per 100 000 in 2017. Cervical cancer rates have dropped significantly as a result of the success of the National Cervical Cancer Screening Program. There has been no change in death rates for prostate cancer and skin cancer. Cancer mortality rates could be reduced by changes to lifestyle (for example, not smoking and eating a balanced diet), increased knowledge and awareness of risk factors and symptoms, effective screening programs and early detection.

Men have a higher risk of being diagnosed with cancer and a higher risk of dying of cancer than women, largely reflecting the different gender patterns of food, tobacco and alcohol use. Men generally eat less nutritious diets, smoke and drink more than women, and work in more ‘at risk’ environments with greater exposure to environmental hazards.

The risk of developing cancer also increases with age, so Australia — with its ageing population and decreased total mortality rates — can expect the number of cancer cases to continue to rise.

SNAPSHOT

Cancer impacting Australia’s health more than any other group of diseases

Cancer is the disease group with the biggest impact on our health-costing us, as a nation, more years of life than any other—according to a report released today by the Australian Institute of Health and Welfare (AIHW).

The report, *Burden of cancer in Australia: Australian Burden of Disease Study 2011*, uses 2011 data to calculate the health impact—or ‘burden’ of cancer, and shows that its impact is greater than any other group of diseases, accounting for one-fifth of the burden.

‘This is calculated in terms of years of life lost due to early death from cancer, as well as the years of healthy life lost due to living with the disease,’ said AIHW spokesperson Michelle Gourley.

While other conditions, such as cardiovascular disease, are more common and cause a greater number of deaths, cancer results in more years of life lost due to deaths occurring in younger age groups.

The report shows five types of cancer accounted for almost half of the cancer burden: lung, bowel, breast, prostate and pancreatic cancers.

‘Overall, the burden from cancer lessened between 2003 and 2011 – down by 10% – and this same pattern was seen across most individual cancer types,’ Ms Gourley said.

However, this was not true for all population groups, with the cancer burden for Indigenous Australians worsening since 2003.

‘Indigenous Australians experienced a cancer burden 1.7 times that of non-Indigenous Australians, and the gap was particularly notable when it came to lung cancer,’ Ms Gourley said.

Indigenous males experienced 2.3 times the lung cancer burden of non-Indigenous males, and for Indigenous females the rate was 2.6 times as high.

Australians in remote and lower socioeconomic areas also experienced greater cancer burden than other Australians. In particular, people in the lowest socioeconomic group experienced burden from lung cancer at almost twice the rate of the highest socioeconomic group.

The report also looks at the relationship between a range of behavioural risk factors (such as tobacco smoking, obesity, poor diet and physical inactivity) and the burden of cancer.

‘Notably, almost a quarter (22%) of the total cancer burden can be attributed to tobacco use,’ Ms Gourley said.

An AIHW report released earlier this month revealed that after a long term decline, smoking rates have plateaued, but the proportion of Australians who have never smoked continues to rise.
Inquiry
Cancer mortality trends
Read the snapshot ‘Cancer impacting Australia’s health more than any other group of diseases’ and then write a paragraph to describe the trend in cancer deaths of men and women in Australia.

Lung cancer
Lung cancer is currently the leading cause of cancer deaths in Australia for men and women, yet it is largely preventable. It is the most commonly occurring type of cancer (apart from non-melanoma skin cancers). The female death rate, while considerably lower than that of men, is increasing. The number of females smoking has fallen only slightly in the past few years, so the future incidence of lung cancer in women is unlikely to fall as much as it has in men. Most lung cancers take considerable time to develop, but then the mortality rate is high once lung cancer has been detected. A large proportion of people die within the first five years of diagnosis.

The risk of developing lung cancer is 10 times higher among smokers than among non-smokers. The risk increases with the number of cigarettes smoked and the length of time a person has smoked. Young children and adolescents are particularly at risk because lung tissue is easily damaged by cigarette smoke.

Less than 10 per cent of all cases of lung cancer occur in non-smokers. In these cases, occupational hazards, air pollution and other environmental factors are linked to the incidence of lung cancer. However, these risk factors are minor compared with cigarette smoking.

Breast cancer
Breast cancer is the second most common cause of cancer-related death in Australian women, exceeded only by lung cancer. It was identified as the underlying cause of death in 2016 for 2976 women. Breast cancer affects one in eight women in Australia. As women grow older, both the risk and the incidence of breast cancer rises.
There is no known cause of breast cancer, yet a number of factors increase the risk — increasing age, a family history of breast cancer, a diet high in fat, obesity, menstruation starting at an early age, late menopause, and a late first pregnancy or not having children. If breast cancer is detected at an early stage, it is easier to treat and the woman has a better chance of survival. Regular breast self-examination for all women (especially those aged over 30 years) and mammographic screening every two years for women aged over 50 years are vital to reduce mortality from breast cancer.

Inquiry

Breast cancer survival

Read the snapshot ‘Breast cancer survival improving, but 47 women still diagnosed each day’, then answer the following questions.

1. In which age group are the majority of breast cancer cases diagnosed?
2. Why is the number of breast cancer cases expected to rise?
3. What is the current 5-year relative survival rate for breast cancer, and why has it improved over the last 30 years?

SNAPSHOT

Breast cancer survival improving, but 47 women still diagnosed each day

Survival rates for breast cancer nationally are improving, however, 47 Australian women are diagnosed with breast cancer each day, according to Cancer Australia. The Breast cancer in Australia: an overview report shows the number of new breast cancer cases more than doubled from around 5300 to 13,600 cases between 1982 and 2008.

Breast cancer is the most common cancer in Australian women and the majority of cases (69%) are diagnosed in women aged 40–69. The number of women diagnosed with breast cancer is expected to rise in the future due to the ageing population. Our projections indicate that in 2020 about 17,200 new breast cancers will be diagnosed in Australia. This would equate to 47 women being diagnosed every day,’ Ms Bech said.

‘Importantly, the report also shows that survival from breast cancer continues to improve in Australia, with these improvements due to both earlier diagnosis and better treatments,’ Cancer Australia CEO Dr Helen Zorbas said. Between the periods 1982–1987 and 2006–10, 5-year relative survival from breast cancer increased from 72% to 89%.

Around 2700 women died from breast cancer in 2007 making it the second most common cause of cancer-related death for Australian women.

‘Although survival rates are improving, the impact on the lives of Australian women is high with 8 women still dying each day from breast cancer.’

Source: AIHW

Skin cancer

Skin cancer and sunspots (solar keratoses) are the most common of all skin diseases affecting Australians and our skin cancer rates are the highest in the world. The most common cancer in Australia in terms of incidence, skin cancer, is due to prolonged exposure to ultraviolet radiation. Its incidence has almost quadrupled in the past two decades. Approximately 50 per cent of lifetime exposure occurs in early childhood and adolescent
years. The more common types include **basal cell carcinoma** and **squamous cell carcinoma**, which are not usually fatal (referred to as non-melanoma).

However, a significant number of deaths from **malignant melanoma** skin cancers could be avoided through skin protection and early detection. Melanoma of the skin is most common in both males and females aged 10–59 years. Malignant melanoma behaves like an internal cancer, and will spread to other parts of the body unless detected early and treated.

According to the Cancer Council of Australia, over 2000 Australians die from melanoma and non-melanoma skin cancer each year. In the majority of cases, the condition could have been avoided by using more rigorous sun protection strategies.

**Application**

**Analysing skin cancers**

Using the internet, research the most common types of skin cancer. For each type, write a short report outlining the:

(a) characteristics of the skin cancer
(b) common sites where it occurs
(c) strategies for its prevention.
SNAPSHOT

Slip, slop, slack leaves Australians red faced

Cancer Council research released today (20 Nov. 2016) shows fewer Australians are using hats to protect themselves from the sun and, as a result, are getting sunburnt on their face, head, nose or ears.

The data from Cancer Council’s National Sun Protection Survey reveals that just 44 percent of Australian adults wear a hat when exposed to UV on summer weekends, down from 48 percent in 2003.

Australian adults’ use of clothing to protect their skin also decreased and their tendency to seek shade during peak UV times showed no improvement. However, there was also good news, with the survey showing that Australia’s use of sunscreen has increased.

In light of the findings, Cancer Council and the Australasian College of Dermatologists have come together during National Skin Cancer Action week (20–26 November) to remind Australians to be SunSmart by following Cancer Council’s five important steps to sun protection: slip, slop, slap, seek and slide.

CEO of Cancer Council Australia, Professor Sanchia Aranda, says the results show too few Australians are remembering to use a combination of sun protection measures.

‘A four percent drop in hat usage may sound small, but any downward trend is a concern. This latest data shows that over 640,000 Australians have stopped wearing a hat to protect themselves when exposed to UV on weekends and in total almost 10.6 million Australians don’t wear a hat when out in the sun on summer weekends.’

‘Only 1 in 5 adults used three or more sun protection measures during summer, which is a real worry given the prevalence of skin cancer in Australia.

‘There can be a tendency from many Australians to slop on some sunscreen and think they are protected all day long. But sunscreen isn’t a suit of armour. It should be your last line of defence — a hat, clothing, sunglasses and shade are also key to protecting your skin,’ Professor Aranda said.

The data also showed some worrying trends indicating that the lack of broadbrim hats and clothing was translating to the places on the body where Australians are sunburnt.

The research shows that the face, head, nose, or ears are the most common places on the body that Australians get sunburnt, alongside the arms and hands,’ Professor Aranda said.

‘There’s no doubt that by neglecting to slap on a broadbrim hat Aussies are putting themselves at risk of a potentially deadly skin cancer.’

Australasian College of Dermatologists’ President, Associate Professor Chris Baker, said that dermatologists regularly treated skin cancers that could have been easily prevented through proper sun protection.

‘Dermatologists see a lot of skin cancers on the face, ears, head and neck,’ Associate Professor Baker said.

‘These skin cancers are particularly concerning because they can arise quickly and are more difficult to treat. Surgery is the most common treatment, with visible scarring often unavoidable. Other treatments include topical therapy for some early skin cancers through to radiotherapy and chemotherapy for more advanced cancers.

Sadly we don’t always get them in time.’

He also urged Australians to keep a close eye on their skin, know what normal spots they have and to keep a watch for any changes.

‘It’s important to remember that skin cancer can be prevented and, if detected early, can often be successfully treated. If you notice any changes in size, shape or colour of an existing spot, or the development of a new spot, you should get it checked as soon as possible.’
Inquiry

Skin cancer prevention

1. Read the snapshot ‘Slip, slop, slack leaves Australians red faced’. In small groups, discuss the issue of sun danger and how it relates to the incidence of skin cancer. List some actions that Australians can take to help reduce the high death rates from melanoma.

2. A health study by the Cancer Council conducted during summer of 2013–14 investigated the level of sun protection used and/or worn during the peak UV hours over a weekend. Examine the table below that summarises the findings and comment on the trends shown. Discuss the implications of the findings and any strategies that might help to address the problem.

<table>
<thead>
<tr>
<th>Sun protection used/worn during peak UV hours</th>
<th>2003–4 (%)</th>
<th>2013–14 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Head wear (hat, cap, visor)</td>
<td>48</td>
<td>44</td>
</tr>
<tr>
<td>Sunscreen</td>
<td>33</td>
<td>37</td>
</tr>
<tr>
<td>3/4 length or long sleeve top</td>
<td>18</td>
<td>19</td>
</tr>
<tr>
<td>3/4 length or long leg-cover</td>
<td>46</td>
<td>39</td>
</tr>
<tr>
<td>Sunglasses</td>
<td>55</td>
<td>61</td>
</tr>
<tr>
<td>Was mostly in shade</td>
<td>27</td>
<td>28</td>
</tr>
<tr>
<td>Three or more sun protective behaviours</td>
<td>16</td>
<td>21</td>
</tr>
</tbody>
</table>

Risk factors and protective factors for cancer

The following summary lists the major risk factors for the most common cancers.

1. Lung cancer:
   - tobacco smoking
   - occupational exposure to cancer-causing agents (carcinogens such as asbestos)
   - air pollution.

2. Breast cancer:
   - a family history or personal history of the disease
   - a high-fat diet
   - early onset of menstruation
   - late menopause
   - obesity
   - benign breast disease
   - late age at first full-term pregnancy or childlessness.

3. Skin cancer:
   - fair skin that burns rather than tans
   - fair or red hair and blue eyes, combined with residence in high sun exposure areas
   - a high number of hours of bright sunlight at place of residence
   - prolonged exposure to the sun, especially as a child and adolescent
   - the number and type of moles on the skin.

Tobacco causes an estimated 30 per cent of all deaths from cancer, diet causes 10–70 per cent, sexual reproductive patterns cause seven per cent, occupational factors cause four per cent and alcohol causes four per cent.
TABLE 2.4 The sociocultural, socioeconomic and environmental determinants for cancer

<table>
<thead>
<tr>
<th>Sociocultural determinants</th>
</tr>
</thead>
<tbody>
<tr>
<td>• People with a family history of cancer are more at risk.</td>
</tr>
<tr>
<td>• The incidence of lung cancer and cervical cancer is higher for Aboriginal and</td>
</tr>
<tr>
<td>Torres Strait Islander peoples, as they tend to have higher rates of smoking at an</td>
</tr>
<tr>
<td>earlier age and less access to health services than other Australians.</td>
</tr>
<tr>
<td>• If your family practises health-promoting behaviours, such as adopting healthy</td>
</tr>
<tr>
<td>eating habits, the risk of cancer is reduced.</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Socioeconomic determinants</td>
</tr>
<tr>
<td>• People in occupations involving repeated exposure to carcinogens, such as</td>
</tr>
<tr>
<td>asbestos, are more at risk of lung cancer.</td>
</tr>
<tr>
<td>• People working outdoors, such as lifeguards, are more prone to getting skin cancer.</td>
</tr>
<tr>
<td>• Those with a low socioeconomic status or who are unemployed have higher death rates</td>
</tr>
<tr>
<td>as income can limit health choices, such as purchasing fresh fruit and vegetables and</td>
</tr>
<tr>
<td>using exercise facilities.</td>
</tr>
<tr>
<td>• People with low education levels are more at risk as poor education is linked to</td>
</tr>
<tr>
<td>poor health choices and less knowledge about how to access and use health services.</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Environmental determinant</td>
</tr>
<tr>
<td>• People living in rural and remote areas are more at risk, as they tend to have less</td>
</tr>
<tr>
<td>access to health information, health services such as Pap smears, and technology,</td>
</tr>
<tr>
<td>such as breast screening devices.</td>
</tr>
</tbody>
</table>

The factors that protect an individual against the most common types of cancer include the following.

1. Lung cancer
   • Avoid exposure to tobacco smoke.
   • Avoid exposure to hazardous materials such as asbestos.

2. Breast cancer
   • Consume a diet high in fruits and vegetables, and low in fat.
   • Practise self-examination.
   • Have regular mammograms if over the age of 50 years.

3. Skin cancer
   • Avoid excess exposure to strong sunlight.
   • Reduce exposure to the sun by wearing a hat, sunscreen, protective clothing and sunglasses.

Groups at risk of developing cancer

Cancer, unlike cardiovascular disease, is a significant cause of death in all age groups. The following summary lists the groups at higher risk of developing various cancers.

1. Lung cancer:
   • cigarette smokers
   • people exposed to occupational or environmental hazards (asbestos, for example)
   • people working in blue-collar occupations
   • men and women aged over 50 years.

2. Breast cancer:
   • women who have never given birth
   • obese women
   • women aged over 50 years
   • women who have a direct relative (mother or sister, for example) with breast cancer
   • women who do not practise self-examination
   • women who start menstruating at an early age
   • women who have late menopause.
3. Skin cancer:
   • people in lower latitudes
   • people with fair skin
   • people in outdoor occupations
   • people who spend too much time in the sun without protection such as hats and sunscreen.

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**Inquiry**

**Cancer**

1. Explain the nature of cancer.
2. What are the trends in the morbidity and mortality rates of cancer? Discuss.
3. Predict the disease trends for lung, breast and skin cancer for males and females over the next 10 years. Consider current information and statistics.
4. Select one type of cancer. What are the risk factors for that cancer? What are strategies to reduce these risks?
5. What are the environmental determinants of cancer?

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**2.2.3 Injury**

Governments and health authorities have paid particular attention to the area of injuries as this area affects all age groups and is often preventable. It places an economic, social and physical burden on the individual and the community. The consequences of injury can be short term or long term; for example:

- loss of physical function, permanent disability or death
- loss of productivity in the workplace
- emotional trauma for both the individual and their family
- reduced earning capacity
- the financial burden of medical and rehabilitation costs.

**The nature of injuries in Australia**

Injuries are a major cause of preventable mortality and morbidity in Australia. Resulting from many different causes, they include:

- transport-related injuries
- suicide and self-inflicted injury
- interpersonal violence
- residential injuries as a result of falls, drownings, poisonings, burns and scalds
- industry-related injuries
- consumer product injuries
- sport and recreation-related injuries.
The extent of injuries in Australia

The impact of injury in Australia is revealed in the following profile.

- In 2011–12 deaths from injuries accounted for 7.6 per cent of all deaths in Australia.
- In 2012–13, falls accounted for 40 per cent of injury and transport crashes for 12 per cent.
- About 4 in 5 injuries that occurred as a result of falls occurred in males aged 55–74 years.
- The 85 years and older age group recorded the highest rate of hospitalised injury cases.
- Over half of hospitalised assaults against women and girls involved injury to the head.
- Death rates from unintentional injuries are declining but those from intentional injuries are increasing (see the section on suicide, sub-topic 2.2.4).

Suicide, transport injury and falls are the leading causes of injury death. Other injuries were due to violence, drownings, poisoning, fires, homicide and machinery injury.

**Transport injuries**

Deaths due to traffic accidents have declined substantially since the 1970s. Transport injury deaths of males fell from 53 deaths per 100 000 males in 1970 to 9 deaths per 100 000 in 2016 (and from 14 female deaths per 100 000 females in 1970 to 2.8 per 100 000 females in 2016). The 15–24 years age group has the highest risk of death from motor vehicle accidents and males of these ages are at greater risk of dying than are females. People in this age group die primarily as drivers and passengers in motor vehicles and as motorcyclists.

Hospital admission rates from injury peak among those aged 15–19 years, whereas fatalities peak among those aged 20–24 years. Blood alcohol levels over the legal limit, driving speed and driver fatigue have been associated with many of the deaths of car drivers and motorcyclists.

Road users aged 0–14 years die primarily as passengers in motor vehicles, pedestrians and cyclists. Many victims in this age group died as a result of either the incorrect use of restraints or no use of restraints or helmets. People in older age groups are more likely to be killed indirectly, as pedestrians for example.

Not only are the premature deaths and the loss of many ‘potential life years’ of concern. Many young people in traffic accidents are afflicted with chronic disabilities such as head and spinal injuries. The resulting cost can be both economic — where the individual occupies a hospital bed and requires medical treatment — and social — where the individual, their family and their friends endure great emotional suffering.

Government legislation of seatbelts (compulsory since 1970), speed limits and drink driving laws (with random breath testing from 1982), for example, have contributed to a substantially reduced road toll. Other factors contributing to the decline include improved vehicle safety, better road engineering, motorcycle and bicycle helmet legislation, more restrictions on P plate drivers and better road safety education.
Application

Compiling a table

Research current data on transport-related injury as a leading cause of injury, death and disability. Compile a table of information, including:

(a) the type of accident/injury (for example, injury of driver, passenger or pedestrian)
(b) the morbidity and mortality rates
(c) the age group at risk
(d) risk factors for each identified age group.

Inquiry

Transport-related injury

1. Discuss the reasons for the high incidence of specific transport-related injuries.
2. What social factors have an impact on transport-related injury among those aged 15–24 years? Discuss.
3. Why has the injury death rate fallen since the mid-1980s?
4. What health promotion strategies have contributed to the reduction in transport-related injuries? Discuss.
5. How has public policy influenced mortality rates from injury? Provide examples.

Childhood injuries

Children are exposed to a variety of settings where there is a risk of injury or poisoning, including school, home, streets, neighbourhoods and sporting environments. Injury, encompassing accidents, poisoning and violence, is a major cause of death for 0- to 15-year-olds. Fifty per cent of childhood injury deaths occur to children aged under 5 years.

The childhood death rate attributable to poisoning, motor vehicle accidents and drowning has fallen significantly over recent years. This reduction reflects health promotion campaigns that have raised public awareness about correct and safe behaviours and advocated changes in public policy (such as a lower speed limit in school zones).

Transportation injuries are the most prominent type of injury in childhood. Drowning, burns and scalds also occur in high numbers in the 0–4 years age group, while suicide and sporting injuries are prevalent among 10- to 14-year-olds.

Inquiry

Childhood injury

1. What factors contribute to the high incidence of transport-related injury in childhood? Discuss.
2. Explain the reasons for the reduction in motor vehicle injury and drowning statistics. Discuss strategies that could be used to further reduce these statistics.
3. Why are children aged 0–4 years so vulnerable to injury?

Risk factors and protective factors for injury

The New South Wales Joint Standing Committee on Road Safety suggested in its STAYSAFE report that the following major factors are among the contributors to unsafe driving and high rates of crashing by novice drivers.

1. Competing objectives. Drivers trade safety for other benefits such as mobility, comfort and status — for example, carrying more passengers than the number of seatbelts allows.
2. Complacency or impunity. A feeling that ‘it won’t happen to me’ is common.
3. Power and encapsulation. A car’s power can be misused by some drivers to ‘show off’, and car occupants can distract the driver, discouraging awareness of other road users.
4. **Lack of judgement.** Many novices underestimate risk and overestimate their driving ability in overtaking, for example. They tend to attribute accidents to other people or bad luck rather than their own inexperience.

5. **Overload.** In complicated situations when a number of things happen at once, novices tend to respond with bad decisions and erratic manoeuvres.

6. **Traps in the system.** The road system is complicated. Novices are particularly vulnerable to the difficulties of the many and varied rules and traffic conditions.

7. **Social and psychological problems.** Novice drivers are more at risk, given factors such as a strong peer influence, their attitudes towards risk, their social immaturity and their physical mobility.

8. **Social norms.** Social norms such as drinking alcohol, speeding and not wearing seatbelts, which are defined by parents, adults and hero figures, may encourage dangerous behaviour.

The factors that protect against motor vehicle accidents include:
- adhering to road safety rules
- not driving when fatigued or under the influence of any drugs, including alcohol
- obeying laws such as using seatbelts and driving at or below the speed limit
- regular road and vehicle maintenance
- reducing distractions in the car such as mobile phones and loud noise.

The risk factors for childhood injuries include:
- inadequate child supervision
- an unsafe environment, such as a lack of adequate pool fencing and exposure to poisons
- not adhering to road safety rules.

Protective factors for childhood injuries include:
- wearing seatbelts and restraints when in motor vehicles
- adequate child supervision
- pedestrian safety
- wearing helmets when riding bikes
- maintaining a safe home environment, such as keeping poisons away from children.

When serious injury occurs, the availability of effective care and rehabilitation services can increase chances of survival and promote a faster recovery for the individual affected.

### TABLE 2.5 The sociocultural, socioeconomic and environmental determinants for injury

| Sociocultural determinants | • Injury hospitalisation rates are higher for Indigenous children compared to non-Indigenous children.  
|                           | • An Indigenous person is three times more likely to die in an accident than a non-Indigenous person, due to less access to treatment and lower levels of education attainment.  
|                           | • Media exposure of laws relating to road use and consequences of road trauma has helped reduce injury rates from traffic accidents. |
| Socioeconomic determinants | • Males aged 25–64 years from areas of most disadvantage are 2.2 times more likely to die in traffic accidents and 1.6 times more likely to die from suicide compared to those living in areas of least disadvantage. For females, it is 2.2 times more for traffic accidents and 1.3 times more from suicide. People with less income are more likely to engage in risk-taking behaviour and are less likely to be able to afford vehicle maintenance.  
|                           | • People who are unemployed, or who have less income, may not be able to afford safety devices in the home to help prevent childhood injuries. |

(Continued)
TABLE 2.5 The sociocultural, socioeconomic and environmental determinants for injury (Continued)

Environmental determinants

- People working in rural areas are more at risk of workplace injuries, as they are more exposed to dangerous machinery.
- People in rural areas are more at risk of suicide, due to lower employment rates in remote areas and less access to support networks.

FIGURE 2.21 Age-specific hospitalisation rates for injury and poisoning, by Indigenous status and sex, July 2013–June 2015

Application

Determinants for injury

Choose a type of injury besides transport and childhood injuries. Research the relevant sociocultural, socioeconomic and environmental determinants for your chosen type of injury and compile them in a table.
Groups at risk
Certain groups are more prone to certain injuries. These include:

- the elderly (at risk of falls)
- children (at risk of poisoning, road trauma, drowning, violence, burns and scalds)
- adolescents (at risk of suicide and traffic-related injuries)
- people living in rural and remote areas (at risk of workplace accidents).

2.2.4 Mental health problems and illnesses
The impact of mental illness on people’s level of health and well-being was underestimated until recently. Previously, the stigma and suspicion attached to the notion of mental illness have been barriers to the effective treatment and prevention of this widespread problem.

The nature of mental illness
Examples of mental health problems and illnesses include depression, schizophrenia, personality disorders, major depression and post-traumatic stress disorder. These illnesses cause much suffering for those directly affected and often for their family/carers and social network.

Poor mental health in childhood and adolescence may underpin a lack of self-care in adulthood. Drug abuse, physical neglect and early pregnancy are examples of poor health choices that may result. Mental health disorders in children and young people are a strong indicator of poor mental health in adulthood.

SNAPSHOT
Your mental health
Your mental health is a state of coping, feeling good and being in control of your life. The US Surgeon General describes mental well-being as ‘the successful performance of mental function, resulting in productive activities, fulfilling relationships with other people, and the ability to adapt to change and to cope with adversity’. If you start to feel frayed around the edges, swamped with work and responsibilities, or emotionally flat and uninterested in the world around you, your mental health is suffering. ‘Mental health’ means an absence of mental ‘illness’ but there is much more to it — it is about living life to your full potential, even when you do have a diagnosis of mental illness.

Humans are complex beings, with a variety of emotional, physical and spiritual capacities and needs. Because of the pressures and stresses of life, it is often difficult to maintain our balance by nurturing those capacities and needs. As a result, we may neglect important parts of ourselves, sometimes our feelings, sometimes our bodies, sometimes our minds. All of us, whether we have been diagnosed with a mental illness such as depression or anxiety, or if we experience stress and the blues occasionally, need to be aware and take responsibility for our mental health.

Various factors either contribute to or challenge our ability to look after our ‘whole person’. These factors include our degree of self-discipline, how aware we are of our feelings and thoughts, how well we know ourselves. Factors outside ourselves include the nature of our home and work environment, our financial situation, the current state of our relationships with important people in our lives — friends, partners, families and work colleagues. The quality of our mental health varies depending on our experience and circumstances. Periods of emotional or financial stress can take their toll on mental health. Working our way through life’s difficulties can help us to grow in our emotional life and self-esteem, so that we are even better prepared for future challenges.
If the tension gets too much for us to cope with, however, it can cause us to 'break down' emotionally or mentally, that is, not be able to carry on our lives in health. At these times, we may need to ask for help or support while we adjust. Many people live with disability, including physical illness or mental illness, and cope in a healthy way. The challenge for all of us is to search out new ways to cope.

Try this quiz about your mental health
How many of the following do you experience in your life at the moment?

- The ability to love and be loved
- A feeling of security and belonging
- Spontaneity and a range of emotional responses
- The ability to trust
- The ability to take responsibility for your own feelings and behaviour
- The ability to accept criticism
- A rich fantasy world enabling creativity to flourish
- A degree of self-knowledge to enable the repair of the self, following harm
- The ability to learn from experience
- The ability to express thoughts and feelings
- The ability to risk enchantment and a sense of awe
- A feeling of comfort with your sexuality
- A sense of humour to help savour the joy of living and to compensate for pain and loss.

The essence of mental health is hard to define as it involves so many aspects of ourselves and differs for all of us. However, healthy people generally have some of the above …

An important factor in maintaining good mental health is ‘resilience’ — the ability to cope with difficulties and ‘bounce back’.

Here are some ideas on things you can do to maintain your mental health.

Talk
Talking to friends, family or a counsellor about your thoughts and feelings can help sort out problems. It can also help relieve stress and anxiety if you are experiencing them.

Eat, sleep and exercise properly
When anxious or under stress, we often neglect ourselves. We don’t eat nutritious food, don’t exercise and don’t sleep properly.

Relax
Most of us need to learn how to relax. There are a number of techniques, and you may choose which one most suits your personality and lifestyle. There are plenty of books, tapes and courses available on relaxation.

Seek help
Sometimes a problem is hard to solve alone or with the help of friends and family. At these times it can be important to get professional help or advice. There are many people you can turn to — your family doctor, community groups, psychiatrists, nurses, occupational therapists, a member of your local church, psychologists, social workers or counsellors.

Think and feel
We are bombarded daily with many demands and sometimes we don’t take time to think. Some pause for reflection each day helps us to get to know ourselves, to gain some perspective on life and to develop a positive outlook. It is also important to acknowledge our feelings and not be afraid of them.

Read a book
In recent years, many books on personal growth have made best-seller lists. These books challenge and educate us to learn more about ourselves and to review how we look at the world and how we relate to others. For some people, reading these books can be a life-altering experience leading to more fulfilling relationships and richer lives.

Source: Extracts from a fact sheet produced by the Mental Health Information Service NSW (1300 794 991).

The information provided is to be used for educational purposes only. It should not be used as a substitute for seeking professional care in the diagnosis and treatment of mental health disorders.
The extent of mental illness in Australia

The scope of mental illness in Australia was estimated in 2007 in the National Survey of Mental Health and Wellbeing as part of the National Mental Health Strategy. More recently the AIHW estimated that in 2015–16, 10 per cent of the Australian population accessed Medicare-subsidised mental health services. According to the survey and the AIHW report, *Mental Health services in brief 2017*:

- 2.3 million people received Medicare-subsidised mental health services as compared to 1.6 million in 2011–12
- 36 million prescriptions for mental health-related medications in 2015–16 were prescribed, with 69 per cent of these being for antidepressants
- women were more likely than men to have had symptoms of anxiety disorders
- men were more than twice as likely as women to have symptoms of substance use disorders
- young adults aged 16–24 years had the highest prevalence of mental disorder (26 per cent), which could be related to high rates of substance abuse
- the prevalence of mental disorders decreased with age (except for mental disorders such as dementia and Alzheimer’s disease, which have a high prevalence in the aged population)
- women were more likely than men to have mood disorders such as depression, particularly women aged 18–24 years.

More recent data were obtained by a national household survey of the mental health and wellbeing of Australian children and adolescents (*Young Minds Matter*). The results were released in 2015.

This report filled the gap in contemporary information about the extent and impact of mental illness on children and adolescents. The report estimates that 560 000 children and adolescents aged 4–17 (about 14 per cent) experienced mental health disorders in 2012–13.

The report revealed that there has been little change in overall prevalence of mental disorders since the first survey in 1998, however, changes in the prevalence of specific disorders included:

- increased prevalence of major depressive disorder among 6–17 year olds (2.1 per cent to 3.2 per cent)
- increased prevalence of major depressive disorder among 12–17 year olds (2.9 per cent to 5.0 per cent)
- decreased prevalence of ADHD in 6–11 year olds (12.6 per cent to 9.2 per cent)
- slight decrease in conduct disorder (2.7 per cent to 2.1 per cent).

The AIHW Australian Burden of Disease Study 2016 shows that from the ages of 15 to 24, a variety of mental and substance use disorders accounted for a large proportion of the non-fatal healthy years lost.

![Figure 2.22](image-url)

**FIGURE 2.22** Mission Australia’s *Mental Health over the Years 2016* study found that one in five young people ages 16–17 years self-reported a level of psychological distress that indicated a probable serious mental disorder.

*Source: Mission Australia’s *Mental Health over the Years 2016*"
Inquiry
Mental health problems and illnesses
1. In the past, mental health problems and illnesses were often ignored or hidden. Mental health is now identified as a priority for action by governments and health authorities. What do you think may be the reasons for this change in attitude and understanding?
2. List some types of mental health problems.
3. How prevalent is mental illness in Australia?
4. What strategies could be used to reduce the prevalence of mental health issues? Discuss.

Suicide

Suicide is a deliberate act of self-inflicted injury, taken by a person with the intention of killing themselves. For the person who takes their life, suicide is perceived as a solution to a seemingly unresolvable problem.

Self-harm (also known as self-injury) refers to the behaviour of a person deliberately causing pain or damage to their own body, without suicidal intent. It is a maladaptive response to emotional or psychological distress.

The following profile is an overview of suicide in Australia.
- The standardised death rate for suicide in 2016 was 11.7 deaths per 100 000 people. This compares with a rate of 10.6 suicides per 100 000 in 2007.
- The standardised death rate for suicide for Aboriginal and Torres Strait Islander persons was 23.8 deaths per 100 000 persons.
- In the five years from 2012 to 2016, intentional self-harm was the leading cause of death for Aboriginal and Torres Strait Islander persons between 15 and 34 years of age.
- Suicide was the leading cause of death for both Aboriginal and Torres Strait Islander and non-Indigenous children and young people aged between 5 and 17 years.
- In 2016, the standardised death rate for males was 17.8 deaths per 100 000 people, while for females it was 5.8 deaths per 100 000 people.
- Suicide accounted for over one-third of deaths (35.4 per cent) among people 15–24 years of age, and over a quarter of deaths (28.6 per cent) among those 25–34 years of age.
- The proportion of deaths due to suicide decreases in older age groups, as the likelihood of dying from natural causes increases.
- Suicide was the leading cause of death among all people 15–44 years of age.
- The median age at death from suicide was 43.3 years. This compares to a median age of 81.9 years for all deaths.
- The highest proportion of suicide deaths of males occurs among those 30–34 years of age, while for females it is the 50–54 age group.

Inquiry
Suicide risk factors
Read the snapshot ‘Suicide rates for young Australians highest in 10 years’, then answer the following questions.
1. Which groups of Australians are most at risk of dying from suicide?
2. What is the trend for suicide rates, and what is the likely reason for this trend?
3. In pairs, share your thoughts on effective mental health support. What further strategies could you suggest to address this suicide trend?
SNAPSHOT
Suicide rates for young Australians highest in 10 years, researchers call for new prevention strategies

Suicide rates among young Australians are at their highest level in 10 years, despite a range of prevention strategies and investment from government, according to new research.

The report, carried out by youth mental health service Orygen, has found the system is not working and a new suicide prevention strategy for young people is needed.

Suicide statistics:
- Suicide rates for 15 to 24-year-olds at highest rate in 10 years
- A third of all deaths of young men are due to suicide
- 41,000 young people aged 12-17 have made a suicide attempt
- Twice as many 15 to 19-year-old women died by suicide than in 2005
- Suicide rates have increased for children under the age of 14
- One-quarter of women aged 16-17 years old have self-harmed
- Aboriginal and Torres Strait Islander, LGBTIQ, seriously mentally ill youth are at high risk

Jo Robinson, head of Orygen’s suicide prevention research, said of the current system: ‘We’re clearly not getting things right. We really lack national leadership when it comes to youth suicide prevention.’

The report highlighted that although suicide rates among young men were still higher than women, female suicide rates had doubled over the past 10 years. It also found youth suicides were twice as likely to happen in clusters than adult suicides and that Aboriginal and Torres Strait Islander youth and youth in regional and remote Australia were most at risk. In one cluster that was identified, 21 young people had taken their lives in a remote town in central Queensland between 2010 and 2012.

Fifteen young people died by suicide in a remote northern Western Australian town in the same period.

‘We need to be very mindful that when there has been a suicide death by a young person, those young people around the death will be vulnerable to suicide going forward,’ Dr Robinson said.

She said it was not necessarily an increase in funding that was needed, but rather there a refocusing of where the money was going. The Brain and Mind Centre’s Professor Ian Hickie agreed, saying there had been a big focus on reducing suicide rates in 1990s at a time when they were at all-time highs, almost double the current youth suicide rate. ‘In some ways that success had been taken for granted,’ he said.

But Dr Richard Burns from the Australian National University, warned the alarming figures should be viewed with caution. ‘There appears to have been a doubling amongst teen males but this is due to particularly comparatively lower rates in 2004 and 2005,’ he said. ‘Otherwise their trend has been stable.’

Dr Burns also warned that due to low rates of suicides reported for women, small increases could appear substantial.

‘Most of the purported doubling in rates amongst teenage females occurred with a sudden increase in 2015, it will take several years to confirm that this is a trend,’ he said.

Young people being turned away from help
The report calls for a national suicide prevention strategy, supported by a specific youth suicide prevention strategy.

It also found more mental health services were needed for young people who were at high risk of suicide.

‘We know that there are tens of thousands of young people who are turned away from services every year because services don’t have the capacity to respond to them,’ Dr Robinson said.

‘Unfortunately, very tragically, some of those young people will go on to take their own lives.’

Better use of technology
The report also highlighted the role technology could play to prevent suicide and called for better online platforms, such as web-based counselling services, that could help people at risk of suicide.

Dr Robinson said online tools were highly acceptable to young people and the evidence showed they were working.

‘Governments have been very cautious about this. In suicide prevention they talk about the potential harms that online platforms can do or can offer,’ he said.

‘While those concerns shouldn’t be taken lightly, we also think it’s time we looked at some of the opportunities that online platforms provide.’
Professor Ian Hickie said despite new online technology being blamed for increased bullying and suicide risks, the data showed the reverse.

‘When technology is used appropriately to connect and support young people, actually suicidal behaviour and mental health problems go down, not up,’ he said.

‘And that may be part of the reason why in fact rates have been lower in this part of this century, then they were in the 1990s.’

**Self-harm rising**

The rise in suicide rates has also been mirrored by a rise in self-harm, according to the report, with hospitalisations for self-poisoning among women spiking in recent years.

Dr Robinson said the issue was not being taken seriously by the community and health services.

‘We know one of the myths around self-harm is that young people who engage in self-harm are really attention-seeking and what we would say is that is absolutely not the case,’ she said.

‘The behaviour needs to be taken seriously.’

Resources for suicide prevention include Youthbeyondblue at 1300 22 4636 and Lifeline at 13 11 14.

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**Depression**

Depression is one of the most common types of mental illness, and it is something that many people suffer from at some time in their lives. Depression is diagnosed according to a range of signs and symptoms. It is characterised by overwhelming feelings of sadness and despair, and can range in severity from mild depression to major depression. The National Health survey 2014–15 reports the rate of people reporting depression or feelings of depression increased until around 55–64 years of age. For most age groups, females reported higher rates of depression or feelings of depression compared with their male counterparts.

We all suffer from normal depressed moods throughout our lives. These moods occur as a result of negative experiences such as relationship break-downs, loss of a loved one, or personal or work-related stress. We react to these negative experiences in a normal way by feeling sad, upset, angry, anxious or lethargic. Generally, though, we recover from these experiences. It is when these negative feelings persist that mild chronic depression may result. Mild depression is characterised by:

- chronic depressed mood
- poor self-esteem
- loss of interest
- decreased energy
- feelings of sadness
- low-level symptoms of major depression.

Major depression is characterised by:

- feelings of despair and hopelessness
- loss of interest in life
- inability to feel pleasure
- loss of appetite or weight
- irritability or agitation
- insomnia
- feelings of guilt
- difficulties with decisions
- poor concentration.

**Risk factors and protective factors for mental health**

People living with a mental health difficulty may experience a range of feelings and demonstrate a variety of behaviours. Individuals, communities and government agencies all play a role in supporting and assisting those at risk as well as promoting protective strategies. Support agencies provide platforms that enable those at risk, as well as concerned family and friends, to connect with appropriate help and information. Recent government budgets have given mental health research and service provision priority.
### TABLE 2.6 Potential risk factors and protective factors for anxiety and depression

<table>
<thead>
<tr>
<th>Risk factors</th>
<th>Protective factors</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Individual</strong></td>
<td><strong>Family</strong></td>
</tr>
<tr>
<td>• Difficult temperament (e.g. overly shy, inflexible or aggressive)</td>
<td>• Family conflict including domestic violence</td>
</tr>
<tr>
<td>• Poor social and emotional skills</td>
<td>• Inconsistent or unclear discipline and lack of warmth and affection by parents, insecure attachment</td>
</tr>
<tr>
<td>• Learning difficulties, poor problem-solving skills</td>
<td>• A supportive family life, free from conflict and abuse</td>
</tr>
<tr>
<td>• Risk-taking behaviours, such as alcohol and illicit drug taking, which alter chemical make-up of the brain</td>
<td>• Clear expectations for behaviours and support at critical times, positive parent or carer relationship</td>
</tr>
<tr>
<td>• Stress during the prenatal stage</td>
<td>• A deficiency of serotonin, which contributes to poor mood control</td>
</tr>
<tr>
<td>• Family history of mental disorders</td>
<td>• Negative life events relating to loss, trauma and abuse</td>
</tr>
<tr>
<td>• A deficiency of serotonin, which contributes to poor mood control</td>
<td>• Easy temperament and sociable</td>
</tr>
<tr>
<td>• Negative life events relating to loss, trauma and abuse</td>
<td>• Socially and emotionally competent, able to regulate emotions, positive sense of identity, and an optimistic and positive attitude to help-seeking</td>
</tr>
<tr>
<td><strong>Peers</strong></td>
<td><strong>School</strong></td>
</tr>
<tr>
<td>• Poor peer role models that are not inclusive or use drugs, alcohol and violence or antisocial behaviour</td>
<td>• Supportive relationships with open and clear communication</td>
</tr>
<tr>
<td>• Positive peer role models, inclusive group norms with health-promoting behaviours</td>
<td>• Policies on behaviour and bullying; school acknowledges and respects diversity</td>
</tr>
<tr>
<td>• Positive and supportive relationships with respectful communication</td>
<td>• Opportunities for academic or other school achievement with policies and processes for attendance</td>
</tr>
<tr>
<td><strong>School</strong></td>
<td><strong>Community</strong></td>
</tr>
<tr>
<td>• Poor student–teacher relationships</td>
<td>• Social or cultural discrimination and racism</td>
</tr>
<tr>
<td>• Bullying or discrimination, not inclusive</td>
<td>• Poor access to recreational activities and limited access to support services</td>
</tr>
<tr>
<td>• Low teacher expectations of students and poor absenteeism structures and processes</td>
<td>• Neighbourhood violence or crime and exclusion</td>
</tr>
<tr>
<td>• Supportive relationships with open and clear communication</td>
<td>• Resources and opportunities to participate in a range of cultural and recreational activities</td>
</tr>
<tr>
<td>• Policies on behaviour and bullying; school acknowledges and respects diversity</td>
<td>• Access to support services (e.g. mental healthcare and family support)</td>
</tr>
<tr>
<td>• Opportunities for academic or other school achievement with policies and processes for attendance</td>
<td>• Safe and inclusive community</td>
</tr>
</tbody>
</table>

Depression can be triggered by a number of factors, both physical and psychological. These include:
- mental illness
- chemical changes within the brain
- drug and alcohol abuse
- life stresses such as loss of a loved one or work stress
- high anxiety
- negative experiences.
Often, major depression can occur without any triggering factors. People with major depression suffer unbearable misery and are at risk of suicide. Statistics reveal that an estimated 25 per cent of sufferers of major depression attempt suicide.

Depression is a major health concern that is treatable. Because the symptoms are many and varied, it takes professional judgement to diagnose depression. Depression can be treated with prescribed antidepressants or psychological therapy.

The federal government website Head to Health (www.headtohealth.gov.au) provides information on digital services and resources available. Organisations such as beyondblue (www.beyondblue.org.au), Headspace (https://headspace.org.au/) and Reachout (https://au.reachout.com/) provide information and raise awareness of depression as an illness that can be successfully treated. In addition, strong peer networks and family relationships foster a sense of belonging and tend to act as effective protective factors for depression.

### TABLE 2.7 The sociocultural, socioeconomic and environmental determinants for mental health problems

<table>
<thead>
<tr>
<th>Sociocultural determinants</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Aboriginal and Torres Strait Islander peoples are more at risk of suicide and depression, due to higher levels of drug and alcohol abuse, compared to other Australians.</td>
<td></td>
</tr>
<tr>
<td>• People with a family history of mental illness are more at risk.</td>
<td></td>
</tr>
<tr>
<td>• People who have had a falling out with peers, or who have been exposed to bullying, are more at risk.</td>
<td></td>
</tr>
<tr>
<td><strong>Socioeconomic determinant</strong></td>
<td></td>
</tr>
<tr>
<td>People with a low socioeconomic status or who are unemployed have higher rates of mental health problems, as these groups tend to engage more in substance abuse, compared to those of a higher socioeconomic status.</td>
<td></td>
</tr>
<tr>
<td><strong>Environmental determinant</strong></td>
<td></td>
</tr>
<tr>
<td>Rural, young males are at a higher risk of suicide than urban, young males because they have less access to support services and fewer job prospects.</td>
<td></td>
</tr>
</tbody>
</table>

### Groups at risk of suicide

The following groups may be at risk of suicide:

- people who have experienced recent crisis or trauma
- people under stress
- people suffering chronic depression
- elderly people
- people with a physical illness, particularly a terminal illness
- people affected by drugs and/or alcohol
- people who have made previous suicide attempts
- people who talk about ending their lives
- Indigenous people
- Indigenous youth
- teenagers, particularly those for whom life seems to be worthless
- young LGBTIQ people.

### studyon

- Core 1 — Question 2 — Topic 2 — Concept 6
- Mental health problems
  Summary screen and practice questions
2.2.5 Diabetes

There are several types of diabetes but they are generally characterised by the body’s inability to break down and use sugar. The incidence of diabetes in Australia has increased over the past 10 years.

The nature of diabetes

Diabetes (also called diabetes mellitus) is a condition affecting the body’s ability to take glucose (sugar) from the bloodstream to use it for energy. The human body converts sugar into glucose, which under normal circumstances the body uses as energy. To perform everyday activities, the body needs a constant supply of glucose circulating in the blood. The body is generally able to maintain this glucose level within acceptable limits. The glucose must be both in the circulating blood and able to pass into the body’s cells. The pancreas produces a chemical called insulin to enable glucose to pass into our cells. Insulin is a hormone produced by the pancreas that helps glucose to enter the body cells and be used for energy. If the pancreas functions poorly, then it produces insufficient insulin and glucose cannot enter the cells. The glucose then builds up in the blood, finally passing into the urine (via the kidneys) and thus eventually leaving the body.

People who suffer from diabetes are referred to as diabetics and they must deal with their body’s inability to produce either enough insulin or any at all. Sufferers can have either insulin-dependent diabetes (type 1) or non-insulin-dependent diabetes (type 2).

Insulin-dependent diabetes mellitus — type 1

In this type of diabetes, the body produces minimal amounts of insulin or none at all. Sufferers can control this condition by injecting an artificial supply of insulin. Symptoms of this form of diabetes include unusual thirst, excessive passing of urine, weight loss, and weakness and fatigue. Children and young adults who develop diabetes generally develop this type. The exact causes of diabetes are unknown. Type 1 diabetes is an autoimmune disease (when the body starts attacking its own tissues), which may be triggered by a virus or environmental factors.

Non-insulin-dependent diabetes — type 2

In this type of diabetes, the pancreas has the ability to produce insulin but the amount is insufficient and/or the insulin is less effective. The treatment for this type of diabetes can be achieved through healthy eating, regular exercise and, where required, medication and/or insulin injections.

Type 2 diabetes most commonly occurs in adults over the age of 50 years but is increasingly being found in younger people, including adolescents. This is thought to be related to lifestyle factors, including inactivity and unhealthy food choices. Type 2 diabetes sometimes presents no symptoms and can remain undiagnosed for years. Excess weight seems to play a vital role in the development of this form of diabetes. When the body weight is in the normal weight range, the pancreas appears to produce sufficient insulin. Excess body mass places greater strain on the bank of insulin and the amount produced is generally insufficient to cope with the increase in demand.

Physical activity and healthy eating may keep most cases under control. However, tablets and/or insulin injections may become necessary to help control the condition. The tablets are not an insulin substitute and cannot be used by an individual suffering from type 1 diabetes.

Gestational diabetes is a form of diabetes that occurs in pregnancy and in most cases disappears after the birth, but the woman has an increased risk of developing diabetes later in life.

The extent of diabetes in Australia

Recent trends illustrate the impact of diabetes in Australia.

- All types of diabetes are increasing in prevalence. In 2016, diabetes was the 7th highest cause of death for Australian people.
- The incidence of diabetes has risen significantly over the past 20 years. In 2007–08, 898 800 people or 4.1 per cent of the Australian population reported that they had medically diagnosed diabetes. In 2014–15 this rate grew to 1.2 million people (5.1 per cent). This increase is thought to be due to an increased prevalence of obesity in Australia.
• The prevalence of diabetes increases with age.
• The rate for diabetes was higher for males than females in most age groups.
• Aboriginal and Torres Strait Islander peoples have one of the highest prevalence rates of type 2 diabetes in the world. Available data suggest that Aboriginal and Torres Strait Islander people are four times more likely to be hospitalised for diabetes than non-Indigenous Australians.
• People with diabetes experience reduced life expectancy and are more likely than people without diabetes to experience major health complications involving the eyes, kidneys, nerves and arteries.
• Diabetes can contribute to coronary heart disease, stroke and vascular disease. Female diabetics are four times more likely than non-diabetics to develop coronary heart disease and male diabetics are two times more likely. Strokes are four times more common in diabetics than in non-diabetics.
• Diabetes is also a major contributing factor to blindness, cardiovascular disease, kidney failure and limb amputation.
• Women who develop diabetes during pregnancy have an increased risk of developing diabetes in later life. They also have an increased risk of stillbirths and congenital malformations if the diabetes is not controlled during the pregnancy.
• Eighty-five per cent of diabetics have type 2 diabetes, the onset of which is related to lifestyle factors such as body weight, dietary intake and physical activity.
• Diabetes may be under-reported on death certificates, especially for older people with circulatory diseases.

FIGURE 2.25 People with insulin-dependent (type 1) diabetes must check their blood glucose levels several times a day as part of the management of their condition.

Risk factors and protective factors for type 2 diabetes
People are at higher risk of getting type 2 diabetes if they:
• have a family history of diabetes
• are over 45 and have high blood pressure
• are over 45 and overweight
• are over 45 and have one or more family members with diabetes
• are over 55 years of age — the risk increases as we age
• have polycystic ovary syndrome (PCOS) and are overweight
• are over 35 and are an Aboriginal person or Torres Strait Islander
• are over 35 and have a Pacific Island, Indian or Chinese cultural background.
People in the above categories are encouraged to undertake a healthy lifestyle to reduce their risk and to speak to their doctor about a blood test.

The number of people being diagnosed with type 2 diabetes is growing and it is being diagnosed at a younger age, even in teenagers. Maintaining a healthy body weight and achieving a healthy lifestyle, in particular a balanced diet and regular physical activity, can assist in reducing the risk of developing type 2 diabetes.

Healthy eating advice for both the prevention and management of diabetes is the same as that for all Australians — that is, a diet low in saturated fat, high in fibre and based on a wide variety of nutritious foods. The Australian dietary guidelines (below) provide the foundation for a healthy diet.

- Enjoy a wide variety of nutritious foods
- Eat plenty of breads and cereals (preferably wholegrain), vegetables (including legumes) and fruits.
- Eat a diet low in fat and, in particular, low in saturated fat.
- Maintain a healthy body weight by balancing physical activity and food intake.
- If you drink alcohol, limit your intake.
- Eat only a moderate amount of sugars and foods containing added sugars.
- Choose low-salt foods and use salt sparingly.
- Encourage and support breastfeeding.

It is also important to eat foods containing calcium (particularly for girls and women) and to eat foods containing iron (particularly for girls, women, vegetarians and athletes).

Regular physical activity can also help, as type 2 diabetes occurs more often in people who are physically inactive. The physical activity guidelines listed below refer to the minimum levels of physical activity required for good health.

- Think of movement as an opportunity, not an inconvenience.
- Be active every day in as many ways as you can.
- Put together at least 30 minutes of moderate intensity physical activity on most, preferably all, days.
- If you can, also enjoy some regular, vigorous exercise for extra health and fitness.

**SNAPSHOT**

**Hundreds of Australians hospitalised every year due to failure to recognise early signs of type 1 diabetes**

Up to 640 Australians are hospitalised each year in serious life threatening situations before they are diagnosed with type 1 diabetes, Diabetes Australia warned today.

Diabetes Australia is launching a new campaign ‘It’s About Time’ to encourage the community, families, schools and health professionals to recognise the early signs of type 1 diabetes and help avoid many of the hospitalisations.

‘Each year hundreds of Australians including many children end up in hospital emergency rooms in serious, life-threatening situations because the early signs of type 1 diabetes are not recognised,’ Diabetes Australia CEO Professor Greg Johnson said. ‘Failure to recognise the early symptoms of type 1 diabetes such as severe fatigue, thirst, increased visits to the toilet and weight loss can lead to a dangerous condition called diabetes ketoacidosis.

‘Every year around 640 people including many children only learn they’ve got type 1 diabetes after presenting to hospital, often with diabetes ketoacidosis. This can be life threatening. But most of these hospitalisations could be avoided if the early signs were identified and the type 1 diabetes treated before progressing to ketoacidosis.’

Professor Johnson said everyone should learn the early signs of type 1 diabetes. ‘Type 1 diabetes is far more common than most people think. Over 3000 Australians are diagnosed with type 1 diabetes every year. Half of these are children and adolescents,’ he said.

‘It’s about time we all knew the early signs of type 1 diabetes. People should look for the 4T’s:

- Thirst – are they really thirsty and unable to quench that thirst?
- Toilet – are they going to the toilet a lot?
- Tired – are they more tired than usual?
- Thinner – have they recently lost weight?'
‘If you see these early signs, see a doctor straight away and ask about type 1 diabetes.’

Professor Jerry Wales, from the Lady Cilento Children’s Hospital in Brisbane said the hospital continued to see a higher than expected number of children arriving at hospital with diabetes ketoacidosis.

‘Too many children arrive at hospital seriously ill from type 1 diabetes and it is only when they get to hospital that they are diagnosed,’ Professor Wales said.

Inquiry
Managing diabetes

Read the relevant text and the snapshot ‘Hundreds of Australians hospitalised every year due to failure to recognise early signs of type 1 diabetes’, then answer the following questions.

1. What is the trend for the incidence of Type 1 diabetes?

2. Suggest a strategy that could be introduced to ensure the symptoms of type 1 diabetes are recognised more readily in the community.

TABLE 2.8 The sociocultural, socioeconomic and environmental determinants for diabetes

| Sociocultural determinants | • Indigenous Australians are more at risk, compared to other Australians, due to less education about the risk factors and less access to medical services.  
|                           | • Having a Pacific Island, Indian or Chinese cultural background puts one at risk of diabetes.  
|                           | • People with a family history of diabetes are also at risk.  
|                           | • Australia’s incidence of type 1 diabetes among those aged 0–14 years is one of the highest among other OECD countries, probably due to the general Australian diet being high in saturated fat and sugar. |

| Socioeconomic determinant | Those with a low socioeconomic status and who are less educated are more at risk as they are more likely to consume higher levels of alcohol, be physically inactive and consume diets high in fat and sugar. |

| Environmental determinant | A greater access to technology has led to higher levels of physical inactivity and therefore a greater risk of diabetes. |

Groups at risk

The groups at risk of developing diabetes include:

• women who had diabetes during pregnancy  
• people aged over 45 years  
• people with a family history of diabetes  
• overweight people  
• people who consume a diet high in sugar  
• Aboriginal and Torres Strait Islander peoples.
2.2.6 Respiratory disease

Respiratory disease is highly prevalent and affects the quality of life for many Australians. The illnesses and conditions classified as respiratory disease can range from mild to life-threatening. This group of diseases offers significant potential for prevention.

The nature of respiratory diseases

Respiratory diseases refer to a group of diseases that affect the respiratory system, including the lungs, lower and upper airways, nose and throat. Examples include:

- asthma
- chronic obstructive pulmonary disease (COPD)
- hay fever
- chronic bronchitis
- chronic sinusitis.

COPD is a progressive disease where the lung tissue becomes damaged and the air passages become narrow, which obstructs oxygen intake, leading to shortness of breath, wheezing, chest tightness and cough. There are a range of behavioural, environmental and genetic risk factors that are associated with chronic respiratory conditions, including smoking, exposure to viral infections and air pollutants, and inheritance of genes associated with respiratory illnesses.
Asthma is a chronic disease of the respiratory system or airways. It affects a person’s ability to carry air in and out of the lungs. The inside walls of the airways become narrow, making it hard to breathe because:

- the muscle walls of the airway contract
- the inside lining of the airway becomes inflamed and mucus is produced (see figure 2.27).

The inflammation makes the airways sensitive and they then react to certain triggers, making it difficult to breathe. When this happens, the airways get narrower and less air flows to the lungs.

This causes a number of symptoms including:

- wheezing — a whistling sound when breathing
- coughing — often worse at night or early morning
- chest tightness
- difficulty breathing
- shortness of breath.

When these symptoms worsen, an asthma attack can occur. In severe asthma attacks, the airways may close so much that there is not enough oxygen reaching vital organs. This is a medical emergency and immediate treatment is required.

The extent of respiratory disease

Around seven million Australians across all age groups have a long-term respiratory illness and this places a heavy burden on the health-care system. The prevalence of some conditions in the respiratory disease group is decreasing and this can be largely attributed to a decline in smoking, particularly in males. The high prevalence of asthma in Australia, especially among children, is a significant concern for the health-care system.

COPD

COPD is a lung disease that affects 14 per cent (or one in seven) of Australians aged 40 or over. This figure increases to 29 per cent in Australians aged 75 or over. In 2013, 95 per cent of deaths due to COPD were among people aged 55 and over.

COPD was the fifth leading cause of death in Australia with 6462 deaths (4.4 per cent) in 2013. More recently, in 2016 there were 8048 COPD deaths (5.1 per cent) and COPD remained the fifth leading cause of death in Australia.
Asthma
In 2014–15, 10.8 per cent of all Australians reported that they had asthma. Overall, females (11.8 per cent) had higher rates of asthma than males (9.8 per cent). However, a pattern that has been consistent since 2001 is that asthma is more common amongst boys aged 0 to 14 years (12.4 per cent) than girls (9.6 per cent). In comparison with other countries, the prevalence of asthma in Australia is high. Asthma rates are higher in the female Indigenous population.

Mortality rates from asthma in Australia are characterised by the following:
• comparatively low death rates compared with other diseases
• high death rates compared with international standards
• deaths from asthma occur in all age groups
• the risk of dying from asthma increases with age
• the overall death rate from asthma has decreased significantly over the past 15 years.

Inquiry
Asthma rates in children and young people
Read the relevant and snapshot ‘Asthma rates drop among Australian children and young people’, then answer the following questions.
1. What is the trend for:
   (a) the prevalence of asthma in children and people up to age 34?
   (b) the mortality rate due to asthma?
   (c) the mortality rate due to COPD for people aged 55 and over?
2. Which indicator points to inequity in health status in some groups, and what is the trend for this indicator?
3. What is the main cause of COPD in Australia?

SNAPSHOT
Asthma rates drop among Australian children and young people
The prevalence of asthma among children and young adults has decreased over the past decade, according to a report released by the Australian Institute of Health and Welfare (AIHW). *Asthma in Australia 2011*, was launched by Professor Guy Marks, Director of the Australian Centre for Asthma Monitoring (ACAM) at the Woolcock Institute of Medical Research in Sydney.

‘Between 2001 and 2007–08, the prevalence of asthma declined in people aged 5 to 34 years by over one quarter, but remained stable in adults aged 35 years and over,’ Professor Marks said.

The report also shows a decrease in deaths from asthma, with the mortality rate due to asthma dropping by 45% between 1997 and 2009. ‘Despite these improvements, asthma prevalence and mortality rates in Australia remain high on an international scale,’ Professor Marks said.

In 2007–08, the prevalence of asthma in Australia was estimated to be about one in ten — equivalent to about 2 million people. ‘People with asthma also smoke at least as much as people without asthma, despite the known adverse effects,’ Professor Marks said.

Rates of hospitalisation for asthma among adults are higher in Indigenous people compared with other Australians. Also, people living in areas of lower socioeconomic status are more likely to be hospitalised for asthma than those living in areas of higher socioeconomic status and this gap has widened in recent years.

The report includes a focus on chronic obstructive pulmonary disease (COPD) — a serious long-term lung disease that mainly affects older people and is often difficult to distinguish from asthma. In Australia, smoking is the main cause of COPD. Among people aged 55 years and over, deaths and hospitalisations are much more commonly caused by COPD than by asthma.

‘However, the good news is that between 1997 and 2007, the death rate attributed to COPD among people aged 55 years and over decreased by 65%,’ Professor Marks said.

*Source*: AIHW, media release, 18 October 2011.
Risk factors and protective factors for asthma

It is not known what causes asthma, but if you have a family history of asthma you are more likely to develop it. Asthma symptoms and attacks can be triggered by:

- colds and flu
- tobacco smoke
- inhaled allergens such as pollens, animal hair, dust mites
- air pollution
- strong odours and scents
- cold air or changes in temperature
- certain drugs such as aspirin
- food preservatives, flavourings and colourings
- exercise.

People with asthma should consult their doctor to find out how best to prevent an asthma attack, and how to manage and treat their asthma when an attack occurs. (A fact sheet is shown in topic 11, page xxx.) As people with asthma can experience different symptoms and different degrees of symptoms, it is important to consult a doctor who will be able to develop a prevention and management plan specific to the needs of that person. Asthma cannot be cured, but it can be effectively managed so that people with asthma can lead healthy and active lives.

The Victorian state government is playing an important role in predicting and responding to the incidence of thunderstorm asthma. A newly created forecasting system considers grass pollen levels and weather observations from October to December to identify levels of risk. An early warning alert is triggered and asthma sufferers are able to put their asthma plan in place. Other state-based government agencies also use air quality monitoring to communicate potential threats locally to people with respiratory conditions.

**SNAPSHOT**

**Victoria launches thunderstorm asthma warning system**

After weeks of dry weather, the weather bureau is now warning that storms are likely to return to the east coast — and that's reignited concerns about so-called ‘thunderstorm asthma’.

In November last year (2016), a combination of high pollen levels and a powerful storm resulted in an asthma epidemic in Victoria — it killed nine people with thousands more experiencing respiratory problems.

In response to that crisis Victoria has now launched an outbreak warning system that monitors weather forecasts as well as grass pollen levels.

The new forecasting measures by the Victorian government and the Bureau of Meteorology monitor predicted changes to wind direction, temperature and rainfall, as well as grass coverage. They aim to provide an early warning to asthma sufferers and to give people experiencing asthma-like symptoms a chance to seek medical assistance. It is believed high pollen counts and unsettled weather trigger inflammation.  

*Source: ABC News*

**Inquiry**

Fewer Aussies being hospitalised for asthma

Read the relevant text and snapshot ‘Fewer Aussies being hospitalised for asthma’, then answer the following questions.

1. Why does Australia have one of the lowest hospitalisation rates for asthma in the world?
2. Which population group experiences higher rates of hospitalisation?
3. Explain how asthma can best be managed.
4. Why is asthma a national health priority issue in Australia?
SNAPSHOT

Fewer Aussies being hospitalised for asthma

Fewer asthma sufferers are ending up in hospital than a decade ago, according to a report released today by the Australian Institute of Health and Welfare (AIHW).

The report, Asthma hospitalisations in Australia 2010-11, shows that hospitalisation rates fell by 33% for children and 45% for adults between 1998-99 and 2010-11.

AIHW spokesperson Louise York said Australia has one of the lowest asthma hospitalisation rates in the world and that several factors could be contributing to the decline.

‘There are a range of contributing factors which may be at work here, including a modest decrease in the prevalence or number of cases of asthma over this time (from 11.6% in 2001 to 10.2% in 2011–12), improvements in the preventive management of asthma, availability of more effective out-of-hospital management of disease exacerbations, changes in hospital admission practices or a drop in the severity of asthma over this period. It is not possible to attribute the observed trend to any of these factors with certainty.’

Ms York said while the hospitalisation rate was low, it varied across population groups in Australia.

‘Children are hospitalised at 5 times the rate of adults, although adults (those aged 15 or more years) stay in hospital for longer—about 3 days compared with 1.5 days for children,’ Ms York said.

‘Children aged under 5 had the highest rate of hospitalisations overall, with boys in this age group much more likely to be hospitalised than girls.’

Boys were also hospitalised at a higher rate than girls in the 5–14 age group, but in older age groups the trend reversed, with higher rates for females than males aged over 15.

‘This result is consistent with the higher prevalence of asthma among boys than girls and among women than men,’ Ms York said.

Indigenous Australians were 2.1 times as likely to be hospitalised for asthma as other Australians.

The asthma hospitalisation rate was 1.5 times as high for people living in areas of greater socioeconomic disadvantage compared to those living in areas of lower socioeconomic disadvantage.

In total, there were 37,830 hospitalisations for asthma in Australia in 2010-11.

<table>
<thead>
<tr>
<th>TABLE 2.9</th>
<th>The sociocultural, socioeconomic and environmental determinants for respiratory disease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sociocultural determinants</td>
<td>• Indigenous Australians are more at risk due to higher rates of smoking.</td>
</tr>
<tr>
<td></td>
<td>• People with a family history of allergies are more prone to developing asthma.</td>
</tr>
<tr>
<td>Socioeconomic determinants</td>
<td>• People with less income are more likely to smoke and have less money to spend on treatment.</td>
</tr>
<tr>
<td></td>
<td>• People who are repeatedly exposed to hazardous chemicals at work are more at risk.</td>
</tr>
<tr>
<td>Environmental determinant</td>
<td>People living in rural and remote areas have less access to emergency services.</td>
</tr>
<tr>
<td></td>
<td>This has led to a higher death rate from asthma in these areas, compared to urban areas.</td>
</tr>
</tbody>
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Application

High levels of chronic disease, injury and mental health problems

Select one specific example of a chronic disease, injury or mental health problem. 1. Find information on your chosen disease or health problem — the AIHW weblink might be useful. Create a mind map, summarising the:

(a) epidemiological trends
(b) risk factors
(c) sociocultural, socioeconomic and environmental determinants
(d) major groups at risk.

2. Identify examples of health initiatives to reduce the incidence of your chosen disease or illness.
2.3 A growing and ageing population

Australia’s population is on the rise, reaching 24.5 million in April 2017. Australia’s population growth rate is 1.6 per cent compared to a world rate of 1.1 per cent. This growth in the population is being driven by net overseas migration rather than natural increase. Net overseas arrivals is the difference between total arrivals and total departures. Natural increase is the difference between the number of live births and deaths over a year. The estimate of net overseas migration (NOM) for the year ending 31 March 2017 (231 900 people) was 26.9 per cent, or 49 100 people higher than the net overseas migration recorded for the year ending 31 March 2016 (182 800 people). The ABS estimates that if current migration and birth rates do not change, Australia’s population will be 35 million in 2056, and 44 million in 2101.

Australia’s population is also ageing. Around two per cent of our population is aged 85 years or older. This is expected to more than double by 2036. These expectations are the consequence of sustained low fertility levels and increasing life expectancy at birth.

**FIGURE 2.29** Projected population aged 65 years and 85 years and over, Australia

Source: Data from the Department of Health and Ageing, 8 September 2008.
2.3.1 Healthy ageing

As a consequence of our ageing population, the government has responded by encouraging people to plan for financial security and independence for their later years in life. The government has provided the elderly with a wide variety of services and support, depending on their needs. In addition, the government wants to ensure that the workforce is as productive as possible. With our ageing population, it has become a priority for the government to encourage healthy ageing to enable people to contribute for as long as possible. If people are unhealthy later in life due to sickness or injury, their working years are likely to be shortened, resulting in a reduction in economic growth.

Governments are promoting good health throughout life, as well as disease prevention. People who achieve and maintain good health are less likely to access health and aged care services later in life.

The national research priority ‘Promoting and maintaining good health’ includes a national research goal known as ‘Ageing well, ageing productively’. This goal focuses on issues such as disease prevention, reducing illness periods, and maintaining economic and social participation. Such initiatives ultimately lead to better health outcomes for older Australians, therefore reducing the economic burden on the government.

**Inquiry**

**Healthy ageing**

1. Outline the reasons why Australia’s population is ageing.
2. In what ways does the government encourage people to plan for financial security and independence for their later years in life?
3. Research three initiatives undertaken by the government to promote and enhance positive ageing. Present your findings to the class in an oral presentation.

**SNAPSHOT**

**Tracking the growing path to ageing and aged care**

There are over 2 million Australians aged over 70 years — and this figure is growing. An ageing population means an ever-growing need for specialist services for older Australians, and increasing government and community interest in the funding and provision of those services.

**Residential aged care**

When older Australians can no longer remain in their own homes, they may move into residential aged care facilities where their care needs can be better provided for. Residential aged care facilities provide suitable accommodation, as well as services such as meals, laundry and cleaning. If needed, residents can also receive nursing care and equipment.

At 30 June 2009, there were almost 162,300 people in mainstream residential aged care services. Females made up the majority of the residents — more than double the number of males (about 114,600 females and 47,700 males). The highest proportion of residents in residential aged care was aged 85–89 years, making up 28 per cent of residents.

**Community aged care packages**

Community aged care packages allow individuals to receive the care they require without relocating — that is, they are able to remain in their own homes, neighbourhoods, and communities. Services may include meals, cleaning, transport, home and garden maintenance, and assistance with personal care. For people with greater needs, in-home nursing, counselling and therapy may also be provided.

At 30 June 2009, there were over 44,000 people using community aged care packages in Australia, with most requiring a relatively low level of care. Women outweighed men in all service categories. This discrepancy can be mostly attributed to a trend which sees Australian women generally living longer than their male counterparts.

*Source: AIHW, Access Online Magazine, issue no. 29, March 2011.*
Inquiry
Aged care in Australia
Read the snapshot ‘Tracking the growing path to ageing and aged care’, then answer the following questions.
1. What services are provided by:
   (a) residential aged care facilities?
   (b) community aged care packages?
2. (a) How many people were using these services in 2009?
   (b) Research the number of people currently using these services. What are the predictions for the future?
3. Why do females who use these services outnumber males?

2.3.2 Increased population living with chronic disease and disability
As well as significant improvements in the number of people surviving heart attacks, strokes and cancers, our ageing population has led to an increase in the number of Australians with a chronic disease or disability. Chronic, non-communicable diseases account for approximately 80 per cent of the total burden of disease in Australia and it is estimated that they will be responsible for about three-quarters of all deaths by 2020. The future levels of chronic diseases could be reduced if younger people control the more significant risk factors for developing chronic disease, such as smoking, obesity, excessive drinking, and physical inactivity. Obesity, for example, is a major risk factor for diabetes.

![Figure 2.30 A major increase in the prevalence of obesity is projected.](image)

Application
Living with chronic diseases and disabilities
1. Choose one of the following chronic diseases:
   - heart disease
   - cancer
   - asthma
   - depression.
Using the internet, research your chosen disease and answer the following questions.

(a) Outline the nature of the disease.
(b) Identify the modifiable and non-modifiable risk factors.
(c) Explain the factors that have contributed to a rise in the Australian population living with the disease.
(d) Why has the government identified this disease as a health priority?
(e) Outline strategies for the prevention of the disease.

2. Present your findings to the class in PowerPoint presentation.

SNAPSHOT
People with chronic disease work less — depression, arthritis and asthma key culprits

A report released today by the Australian Institute of Health and Welfare shows that chronic diseases are associated with more days off work and/or being out of the workforce, and some of the biggest culprits are depression, arthritis and asthma.

The report, *Chronic disease and participation in work*, looked at selected chronic diseases to provide an estimate of the loss to the Australian economy due to reduced participation in work among people who have chronic disease.

Report author, Karen Bishop, said, ‘As one might expect, chronic diseases are associated with lower participation in the labour force and more missed days of work’.

‘Even after adjusting for age, people with chronic disease were 60 per cent more likely to not be in the labour force than people without chronic disease. They were also less likely to be employed full-time, and more likely to be unemployed,’ she said.

People with chronic disease who were in the labour force had, on average, about a half a day off work in the previous fortnight due to illness, compared with about a quarter of a day on average for those without chronic disease.

Of approximately 10.5 million Australians aged 25–64 years, about 33 per cent reported at least one of the following chronic diseases: arthritis, asthma, heart disease, chronic obstructive pulmonary disease (COPD), depression, diabetes and osteoporosis.

The report also found that men with chronic disease were more than twice as likely to be out of the labour force, whereas women with chronic disease were 20 per cent more likely not to participate in the labour force.

‘This difference may reflect the different labour force distribution for males and females. Males are more likely to be in the labour force, and females more likely to be out of the labour force for a number of reasons, including caring and parenting,’ Ms Bishop said.

Deaths of working age people from chronic disease also decreased the potential workforce. Loss due to deaths could be primarily attributed to cancers (52 per cent) and heart attacks (19 per cent).

The report estimates a loss of nearly 540 000 full-time workers associated with the presence of chronic disease.

‘Given that in 2004–05 the Australian full-time workforce numbered 5.7 million, a loss of half a million people represents nearly 10 per cent of the full-time workforce,’ she said.

*Source:* AIHW, media release, 11 February 2009.

Inquiry
Impact of chronic diseases and disabilities on the workforce

Read the snapshot ‘People with chronic disease work less — depression, arthritis and asthma key culprits’, then answer the following questions.

1. Identify common chronic diseases affecting Australians, as suggested in the article.
2. Describe the trends and statistics outlined in the article.
3. How can these trends be reversed?
4. Assess the impact of chronic diseases and disabilities on the workforce.
2.3.3 Demand for health services and workforce shortages

As a consequence of an increase in the Australian population living with a chronic disease or disability, the demand for health and aged care services has risen. The government has introduced a number of initiatives to meet the needs of a growing number of older Australians, including:

- increased residential aged care places
- more funding for dementia care in aged care
- incentives for people to remain in their homes
- attracting, retaining and training aged care workers

In addition, there has been a concern that many people suffering poor health are unable to contribute to the workforce, thus leading to general shortages of labour. The government has taken action in response to this concern by improving Australia’s retirement income system in the following ways.

- A means-tested age pension is available to provide income for people after retirement.
- All Australian employers are required to provide compulsory superannuation cover for all eligible employees. Under the superannuation guarantee, the minimum level of superannuation cover made by employers is nine per cent of an employee’s gross salary.
- Voluntary, private superannuation contributions and other forms of private savings, made by employees, are also encouraged.

Such initiatives encourage people to plan for financial security and independence for their late years of life to reduce the economic burden on the government as Australia’s population ages.

2.3.4 Availability of carers and volunteers

Australia’s workforce consists not only of paid workers, but also carers and volunteers, who are ageing with the rest of the population. Older Australians can contribute to society in myriad ways, such as by being paid workers, carers, volunteers or family members. Caring and volunteering are recognised as productive activities. Australians over the age of 55, for example, contribute approximately $75 billion per annum in unpaid caring and volunteering activities. Over 50 per cent of this amount is contributed by people aged over 65.

Such data demonstrates that caring and volunteering activities are beneficial to the economy and that older Australians make a substantial contribution as volunteers and carers. In 2016, 3.6 million (19 per cent) Australians over 65 volunteered. As such, the paid and unpaid work of older Australians is essential to a well-functioning and caring society, which ultimately enhances the quality of life for all Australians.

It is projected that there will be little growth in the number of available carers, compared to the anticipated rise in demand for home-based support. This is likely to result in a shortage of carers in the future.
Inquiry
Carers and volunteers
1. Assess the impact of a growing and ageing population on carers of the elderly and volunteer organisations.
2. Investigate reasons for the projected shortage of carers in the future.
3. Suggest measures that could be taken to encourage people to carry out caring and voluntary activities.
4. Investigate three types of carer or volunteer organisations available to meet the needs of Australia’s ageing population. Two examples are Carers NSW and Volunteering Australia.

2.4 Topic review
2.4.1 Summary
- Particular groups in our society experience inequities in health. These include Aboriginal and Torres Strait Islander peoples, socioeconomically disadvantaged people, people from rural and remote areas, Australians born overseas, older people and people with disabilities.
- Aboriginal and Torres Strait Islander peoples are more likely to die at a younger age and are more likely to experience a reduced quality of life.
- Cultural, economic and environmental factors (determinants of health) contribute to inequities in the levels of health among individuals and subgroups of the Australian population.
- The most prevalent chronic health problems in Australia include cardiovascular diseases, cancer, diabetes, respiratory diseases, injuries and mental health illnesses. Each of these areas has the potential for early intervention and prevention, so the burden of these health problems can be reduced.
- Cardiovascular diseases include coronary heart disease, stroke and peripheral vascular disease.
- Mortality rates from cardiovascular disease are slowly declining, but remain a leading cause of sickness and death in Australia.
- The risk factors for cardiovascular disease include family history, gender, advancing age, smoking, raised blood-fat levels, high blood pressure, obesity and lack of physical activity.
- Cancer refers to a diverse group of diseases characterised by the uncontrolled growth and spread of abnormal body cells.
- The most frequently occurring life-threatening cancers for men are prostate, colorectal, lung and melanoma. For women, breast, colorectal, lung and melanoma are the most life-threatening.
- The major risk factors for cancer are specific to each type of cancer. Lung cancer risk factors include smoking, air pollution and asbestos. Breast cancer risk factors include family history, a high-fat diet, the early onset of menstruation, late menopause and obesity. Skin cancer risk factors include prolonged exposure to ultraviolet rays and fair skin.
- Groups at risk of developing cancer are specific to each type of cancer.
- Injuries are a major cause of preventable mortality and morbidity.
- The incidence of motor vehicle accidents has declined slowly. But 15- to 24-year-olds still have the highest risk of injury from motor vehicle accidents.
- Mental illnesses include depression as well as schizophrenia and personality disorders.
- The Black Dog Institute reports 20 per cent of Australians aged 16–85 experience a mental illness in any year.
Diabetes is a condition in which the body is unable to break down and use sugar.

The two types of diabetes are insulin-dependent and non-insulin-dependent diabetes.

The incidence of diabetes has increased over the past 10 years.

The risk factors for diabetes are high blood pressure, high blood sugar levels, inactivity, obesity, and advancing age.

Asthma and chronic obstructive pulmonary disease (COPD) are examples of diseases of the respiratory system.

Although mortality rates for asthma have decreased with improved medications and management techniques, the incidence of asthma in Australia is still high compared with international standards.

Mortality rates for COPD are decreasing.

Australia’s population is growing and ageing. The ageing population is the consequence of sustained low fertility levels and increasing life expectancy at birth.

With our ageing population, there has been an increase in people living with chronic diseases and disabilities, a higher demand for health services and workforce shortages. It has therefore become a priority for the government to encourage healthy ageing to enable people to contribute for as long as possible and to reduce the burden on our health system.

Caring and volunteering activities are beneficial to the economy, and older Australians make a substantial contribution as volunteers and carers. It is projected that there will be little growth in the number of available carers, compared with the anticipated rise in demand for home-based support. This is likely to result in a shortage of carers in the future.

2.4.2 Questions

Revision
1. Describe the three major forms of cardiovascular disease. (H1) (3 marks)
2. Examine the extent of cardiovascular disease as a major cause of sickness and death. Why is cardiovascular disease a health priority issue for Australia’s health? (H2) (5 marks)
3. Identify and explain the modifiable and non-modifiable risk factors of cardiovascular disease. (H1) (5 marks)
4. Identify and discuss the sociocultural and socioeconomic determinants that affect the prevalence of cardiovascular disease. (H3) (5 marks)
5. How could an individual reduce their risk of developing cardiovascular disease? (H3) (3 marks)
6. Describe the nature of cancer. (H1) (3 marks)
7. Justify cancer being a priority issue for Australia’s health. (H1) (7 marks)
8. Why has there been a recent reduction in injury caused by motor vehicle accidents? (H2) (3 marks)
9. Explain why people aged 15–24 years are at greatest risk of injury from motor vehicle accidents. (H2) (4 marks)
10. Justify injury being a health priority issue for governments and health authorities. (H1) (7 marks)
11. Why is mental health an area of concern for Australia’s health? (H2) (3 marks)
12. What is mental illness? Who is at risk? (H1) (3 marks)
13. Identify the determinants of mental health problems and illnesses. (H3) (3 marks)
14. What are the two types of diabetes? Describe each type. (H1) (2 marks)
15. Examine the extent of the problem of diabetes in Australia. (H2) (4 marks)
16. Who is at risk of developing diabetes? (H2) (3 marks)
17. Justify diabetes being a health priority issue. (H1) (7 marks)
18. Justify the inclusion of respiratory disease as an area of concern for Australia’s health. (H1) (7 marks)
19. Describe recent trends in the incidence of asthma and chronic obstructive pulmonary disease in Australia, and identify the main risk factors. (H2) (5 marks)
20. Discuss the determinants of respiratory disease. (H3) (5 marks)
21. Assess the impact of Australia’s growing and ageing population on our health system and the health service workforce. (H2) (8 marks)
2.4.3 Key terms
Alzheimer’s disease is a progressive mental illness that results in communication blockage between nerve cells, disrupting brain function and corroding memory. p. 61
amputation is the surgical removal of all or part of a limb. p. 68
aneurysm is the ballooning of the arterial wall due to thinning and weakening. It often results from constant high blood pressure and can lead to a stroke. p. 40
angina pectoris refers to chest pain that occurs when the heart has an insufficient supply of oxygenated blood. p. 40
arteriosclerosis is the hardening of the arteries whereby artery walls lose their elasticity. p. 39
atheroma is a thickened area of fatty and fibrous deposits on the inside surface of arteries, resulting in atherosclerosis. p. 38
atherosclerosis is the build-up of fatty and/or fibrous material on the interior walls of arteries. p. 38
basal cell carcinoma is a surface skin cancer that originates from the basal cells that underlie the surface cells. It is the most common type of skin cancer. p. 50
breast self-examination is a preventative action that involves palpating the breast with flat fingers to detect changes or abnormalities in the breast tissue. p. 49
cancer refers to a large group of diseases that are characterised by the uncontrolled growth and spread of abnormal cells. p. 45
carcinogens are cancer-causing agents such as chemicals, pollutants, radiation, cigarette smoke and alcohol. p. 46
cardiocascular disease (CVD) refers to damage to, or disease of, the heart, arteries, veins and/or smaller blood vessels. p. 38
carer is a person who, through family relationship or friendship, looks after an older person or someone with a disability or chronic illness. p. 80
cholesterol is a fatty substance contained in all animal cells. p. 38
coronary arteries are the blood vessels that supply blood to the heart muscle. p. 39
coronary occlusion is a heart attack (or myocardial infarction) caused by the sudden and complete blockage of blood and oxygen to the heart muscle, leaving the heart muscle damaged. p. 39
coronary thrombosis is the formation of an obstructing clot within a coronary artery that is narrowed by atherosclerosis, possibly leading to a heart attack. p. 39
dementia is a condition characterised by a significant loss of intellectual abilities such as memory capacity. p. 34
determinant is a factor that can have an impact on a person’s or group’s health status, either positively (protective factors) or negatively (risk factors). p. 24

Diabetes mellitus is a condition affecting the body’s ability to take glucose from the bloodstream to use it for energy. p. 67

Disability is defined in terms of the lack of ability to perform everyday functions or activities. It refers to limitations in functional abilities. p. 35

Electrocardiogram is a graphical recording of the cardiac cycle produced by an electrocardiograph. p. 43

Environmental determinants of health include geographical location, and access to health services and technology. p. 25

Inequities are unfair differences in levels of health status between groups in a society. p. 24

Insulin is a hormone produced by the pancreas that helps glucose to enter the body cells and be used for energy. p. 67

Malignant melanoma is a cancer of the body cells that contain pigment (melanin) and mainly affects the skin. p. 50

Mammographic screening is a process of using a special x-ray of glands, fat and blood vessels under the skin of the breast to identify any variations from the normal or healthy tissue. p. 49

Metastases are secondary or new tumours, which may develop some distance from the original malignant tumour. p. 45

Myocardial infarction is a heart attack that is usually due to the complete blockage of a coronary artery and results in the death of some heart tissue. p. 39

Natural increase is the difference between the number of live births and deaths over a year. p. 76

Neoplasm is an abnormal mass of cells that forces its way among healthy cells and interferes with their normal functioning. p. 45

Net overseas migration is the difference between total arrivals and total departures. p. 76

Pap smears are screening tests to detect cervical cancer cells by taking a sample of cells from the cervix. p. 29

Peripheral vascular disease is the result of reduced blood flow to the legs and feet, usually due to atherosclerosis and/or arteriosclerosis. p. 41

Schizophrenia affects the normal functioning of the brain. It is characterised by psychotic symptoms and a reduced range of expressions of emotion. p. 59

Self-harm (also known as self-injury) refers to the behaviour of deliberately causing pain or damage to a person’s own body, without suicidal intent. p. 62

Silent infarction is a heart attack without the typical symptoms. p. 40

Sociocultural determinants of health include family, peers, media, religion and culture. p. 25

Socioeconomic determinants of health include employment, education and income. p. 25

Socioeconomic status can be broadly measured by a person’s level of income, education, housing and employment. p. 29

Squamous cell carcinoma is a surface skin cancer that originates in the squamous or surface cells. It is the fastest growing form of skin cancer. p. 50

Stroke results from a blockage of the blood flow to the brain. p. 40

Suicide is a deliberate act of self-inflicted injury, taken by a person with the intention of killing themselves. p. 62

Tumour is a swelling or enlargement caused by a clump of abnormal cells. p. 45

Volunteer is a person who offers to perform a service for the community on a voluntary basis. p. 80