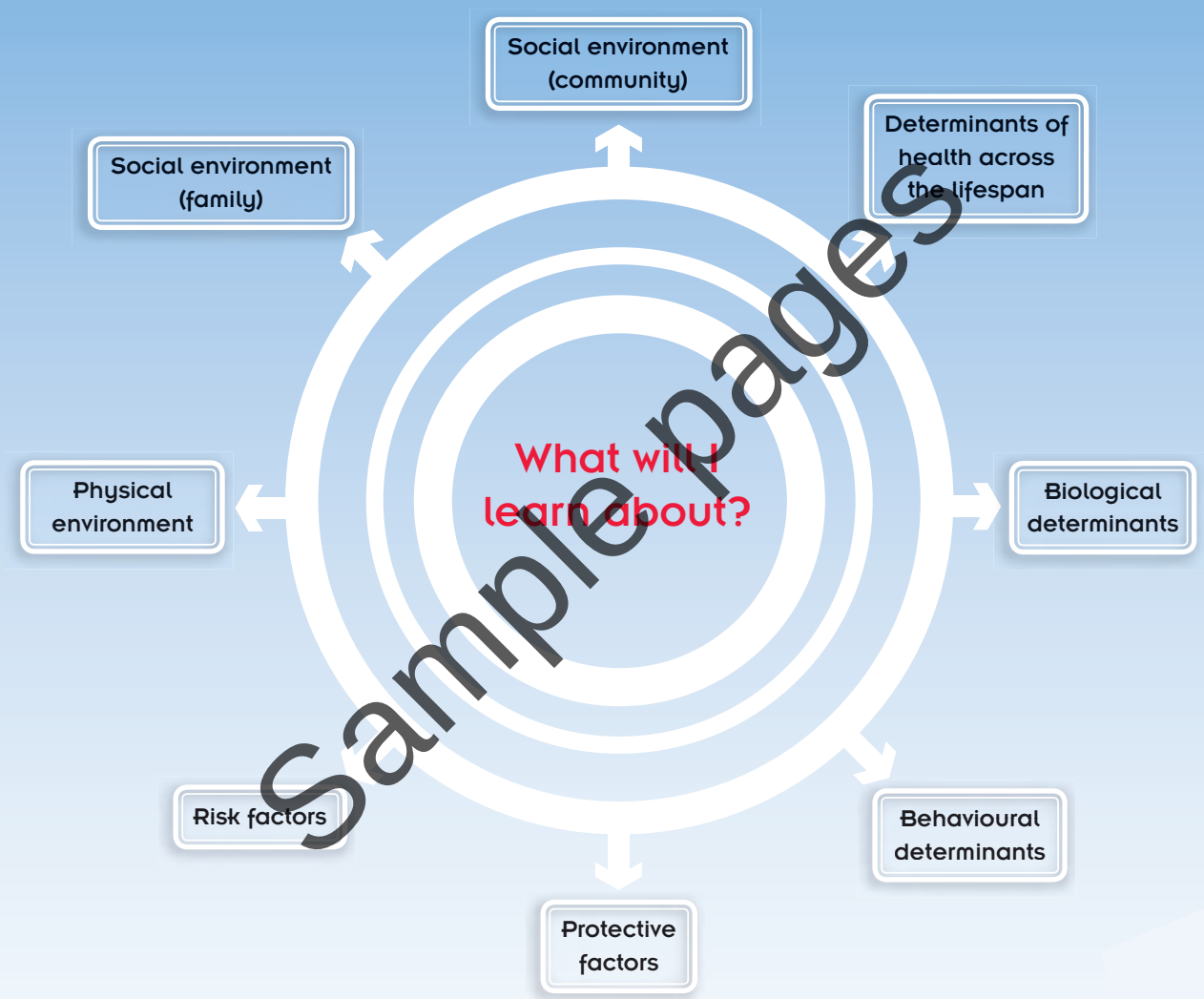
Determinants of health and development



KK1.2.3 KK2.1.5 KK2.2.5

Determinants of health

The health and well-being of an individual, group or population is a product of many determinants. Understanding which determinants cause variations to our health can help explain:

- why health is better or worse for some people
- the state of well-being
- how and why health changes over time.

Since the 1990s, studies have been made of the **determinants of health**. Evidence from these studies enable a more thorough understanding of mortality and morbidity measures and the patterns in which ill health might arise for individuals and populations (see page 7).

determinants of health: risk and protective factors that influence the state of health of an individual, group or community

Determinants of health are a set of factors that indicate the likelihood of individuals or populations staying well or becoming ill. Determinants of health can be used to provide data for health trends in the recent past and to predict future trends in health. Health trends may be positive or negative changes in the health of an individual or group, which show their likeliness of experiencing—or escaping—illness, injury and disease. These trends can be used by governments and health and community organisations to plan intervention and health prevention programs. Forecasting health trends using the determinants of health is a necessary process, as it can help to eradicate continued poor states of health that impact on well-being and life expectancy.

Determinants of health can have both direct and indirect effects on health. With direct effects it is easier to link the health determinant with the change in health, for example **high blood pressure** is clearly linked with the risk of **coronary heart disease**. Indirect effects are harder to see as they happen over time and may seem disconnected from the change in health, for example, the link between physical inactivity and high blood pressure.

Risk and protective factors

Risk factors are the negative aspects that increase the probability of social, behavioural and health problems in individuals and populations; for example, continual **poor eating habits**. **Protective factors** are positive aspects that promote expected development and decrease the probability of social, behavioural and health problems in individuals and populations; for example, resilience and a supportive family or following sun protective measures or not smoking. Determinants of health can have both risk and protective factors attached to them.

risk factor: element that contributes to ill health and disease

protective factor: element that reduces the risk of illness

To further add to the complexity, the same issue can be assessed as both a risk and protective factor for different determinants or for the same determinant. Consider, for example, two different eating habits:

- A person eats a diet containing high amounts of fibre, low salt and low sugary foods, with plenty of fruit and vegetables and lean meats—eating habits are considered a protective factor, having a positive effect on health and well-being.
- A person adopts continuous and prolonged poor eating habits, eating a diet containing high amounts of fat, sugar and salty foods in place of more nutrient-dense foods—eating habits are considered a risk factor for behavioural determinants, possibly leading to ill health conditions such as **overweight** or obesity, cardiovascular disease or cancer, and increasing in intensity.

Resilience is an important protective factor that involves many elements. Overall, it is a coping mechanism that can contribute positively to your health (especially mental health) and development. It could be described as the ability to 'bounce back'. As individuals face and deal with difficult circumstances and events throughout life, they build up resilience. The process begins in childhood. To produce resilience, children need to be given the opportunity to express themselves and to discuss difficulties they may be facing with trusted adults in a secure environment. This will help them find reasonable solutions that they can follow through to deal with their problem, which in turn helps begin to build up resilience. Past events that resilient individuals survive then provide the experience to deal with issues such as family conflict, peer and work pressure, illness or death.

resilience: ability to cope, adapt and recover from problems, traumatic events, troubled family situations, hardship, difficult circumstances and other challenges in life

Determinants of health descriptors can vary. Those used in this text are as described in the *Health and Human Development VCE Study Design 2010*. They are classified as:

- biological determinants
- behavioural determinants
- **physical environment**
- **social environment**:
  - family
  - community.

Figure 2.1 How does a child build resilience?

KS1.2.3

Review questions

1 Define the term 'determinants of health'.
2 What do the determinants of health tell us about individuals and populations?
3 **a** What is the link between determinants of health and health trends?
  b Why is information on health trends useful for governments and organisations?
4 **a** Define risk factors for determinants of health and give one example.
  b Define protective factors for determinants of health and give one example.
  c Explain the complexity of risk and protective factors for determinants of health.
  d Why do you think developing resilience will become an important protective factor throughout the lifespan?

Biological determinants

Biological determinants focus on the physical aspects of body functioning, which can have a direct effect (positive and negative) on the health of an individual. Examples are blood pressure, **blood cholesterol** level, body weight, birth weight, **glucose** tolerance, ageing, **sex** (male or female) and **hormonal changes**. Biological determinants are found in the body, and many are difficult to alter as they are set before a person is born. (See Figure 2.2).

biological determinant: biological aspect of body functioning such as genetics, age, hormones and blood pressure that contribute towards good or poor health

Some biological determinants, such as blood pressure and blood cholesterol, can be modified. Others such as sex and the effects of ageing are predetermined. Biological determinants include biomedical determinants, such as blood pressure and blood cholesterol. The term 'biomedical' is made up from 'bio', meaning life or living organism and 'medical', the science of diagnosing, alleviating and curing disease.

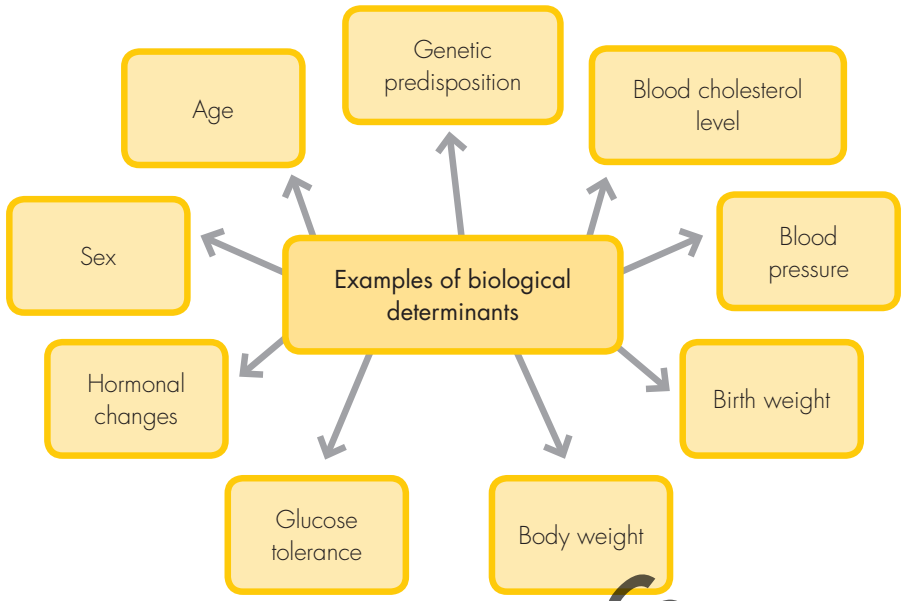


Figure 2.2 Examples of biological determinants

Genetics

Genetic factors directly influence many specific biological determinants of health.

genetics: study of hereditary and inherited characteristics that are handed down through genes by parents to their biological children

Genetic predisposition

A person who is likely to inherit a disease is referred to as having a **genetic predisposition**. Genetic predisposition has been identified with many diseases and conditions, including Alzheimer's disease, schizophrenia, tuberculosis, malaria, migraine headaches, high blood pressure, type 2 diabetes, heart disease, spina bifida and certain cancers. A person's genetic make-up is an important factor to consider when assessing their health or development. Inherited resistance to certain diseases and conditions is in turn affected by other factors such as nutritional status and socioeconomic status.

genetic predisposition: inherited susceptibility to a disease or condition that is transferred through a family's genes

Sex

Sex is set at the time of conception, when the genetic material of the **ovum** (from the mother) and the **sperm** (from the father) unite. Sex has an impact on health. There are some conditions directly linked to sex; for example, females are much more likely to get breast cancer and **osteoporosis** than males, and only males can get prostate cancer.

sex: genetic classification of a person as male or female

Ageing

Ageing is due to the action of several thousand **genes**, although a few key genes may control the rate. An adult can do little to slow this process. As they age, many chronic diseases such as osteoporosis, **osteoarthritis** and cardiovascular diseases worsen.

ageing: decline in bodily function that occurs in every human body over time

Hormonal changes

Hormones are chemical messengers that are secreted directly into the bloodstream and control many body functions. They are crucial to good health. Hormonal changes occur throughout the lifespan, with key periods such as **puberty** and menopause. **Hormonal change** can directly affect a person's health and development. For example, after menopause, a woman no longer produces the hormone oestrogen, which is a protective factor for the maintenance of high **bone density**.

hormonal change: variation to the level of hormone(s) within a person's body, which can impact on their body functioning and appearance

Blood pressure

There is a relationship between **blood pressure** levels and cardiovascular disease. A change in normal blood pressure, due to a prolonged and untreated high blood pressure is a major risk factor in coronary heart disease, **stroke**, heart and kidney failure.

blood pressure: rate of circulation of blood in the body that can be used to measure the forces exerted on the walls of arteries of the body

Blood cholesterol

Cholesterol is a fatty substance produced by the liver and consumed in foods containing animal fats. Cholesterol provides essential material for cell membranes. If levels of **blood cholesterol** are too elevated, cholesterol can clog the arteries and cause heart attacks, angina or stroke.

blood cholesterol: level of cholesterol in the blood at a given time

Birth weight

A healthy birth weight of over 2500 grams is an important determinant of the general health and well-being of infants. Babies with a **low birth weight** have an increased chance of:

- lengthy hospitalisation after birth
- the need for resuscitation
- neurological and physical disability
- death.

low birth weight: birth weight of less than 2500 grams

Body weight

Body weight is measured by **Body Mass Index** (BMI). There are standard BMIs set for normal weight, **underweight**, **overweight** and **obese** persons. Another indicator of weight is waist circumference. In Australia, surveys are carried out to measure the body weight of Australians as a group. Individuals are asked to record self-reported changes in their body weight. This is used to formulate data for the whole population and for groups within the population. There are current concerns about the rising number of overweight and obese Australians and the health implications for them.

Biological determinants can be influenced by other determinants, such as physical inactivity and eating habits (behavioural determinants). When biological and behavioural determinants act together, the risk factors for illness and disease tend to increase. One implication of these two acting together is obesity.

body weight: individual's body mass

Body Mass Index (BMI): index of measurement calculated by dividing a person's weight in kilograms by the square of their height; the safe BMI range is 18.5 to 25

underweight: condition of having an unsafe body weight and a BMI of less than 18.5

overweight: condition of being less than 10 per cent over optimum body weight and having a BMI of 25 or over

obese: condition of being more than 10 per cent over optimum body weight and having a BMI of 30 or over

Review questions

KS1.1.6 KS1.2.3

1 List how the *Health and Human Development VCE Study Design 2010* classifies the determinants of health.
2 **a** Define the term 'biological determinant'.
  b List three examples of biological determinants.
3 List two biological determinants that are modifiable and two that are not.
4 **a** Define the term 'genetic predisposition'.
  b List three examples of diseases or conditions that can be linked to a genetic predisposition.
5 List one example of a biological determinant and how it contributes to illness or disease.
6 How are biological determinants influenced by other determinants of health?

Behavioural determinants

behavioural determinants: health factors that are behaviour driven, and which include responses and actions that a person has learnt over time

There are many **behavioural determinants** that impact on health and development throughout the lifespan.

Behavioural determinants include learnt responses and actions that have developed over time as shown in Figure 2.3.

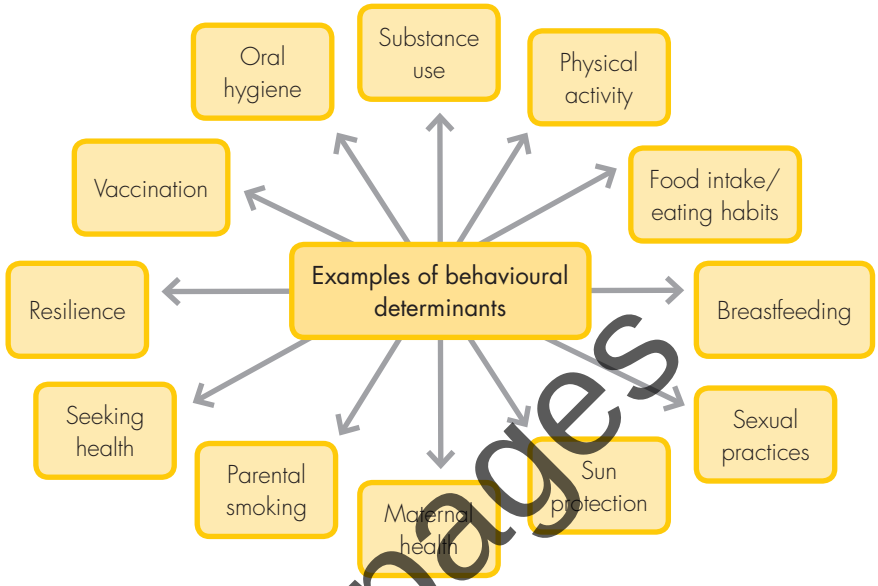


Figure 2.3

Human behaviour and determinants

Human behaviour involves a complex set of personal established habits acquired through life experiences, interactions with people and cultural links. Health behaviours are part of learnt human behaviour and develop over time. They are complex, can be very individual and are hard to modify or change. Human behaviour involves **knowledge**, **attitudes** and **beliefs**. Decisions that young people make about their health are linked to the knowledge and understanding passed down from their family and learnt through their education. They are influenced by attitudes and beliefs developed in the family, from the media and from interactions with peers. Human behaviour therefore underpins behavioural determinants that can impact on health and development in a positive or negative way.

knowledge: information, facts and experiences acquired or learnt by an individual

attitudes: viewpoints or feelings held by a person that may be strong enough to influence their behaviour

beliefs: principles or ideas that are accepted as being true, usually without positive proof

Health-enhancing and health-compromising behaviours

A person's knowledge, attitudes and beliefs directly impact on the decisions that they make about health-related behaviour. For example, the decision to drink alcohol at a party may be influenced by:

- knowledge of the health risks and/or benefits of alcohol
- attitudes towards issues such as drink-driving
- religious beliefs associated with alcohol consumption.

A person's knowledge, attitudes and beliefs therefore have a direct impact on whether they will adopt, are motivated towards, and can sustain **health-enhancing behaviours** to promote good health.

health-enhancing behaviours: actions a person carries out that have a positive impact on their health

In order for a person to adopt health-enhancing behaviours, they need appropriate knowledge and the motivation to maintain the behaviour over time. Some people with poor health behaviours require a reason or intervention before they make a change to their behaviour and lifestyle. This intervening factor may be a diagnosis of ill health, or new knowledge about risk factors to their health. The way in which a person makes changes to their behaviour depends on the level of knowledge, attitudes and skills that they possess. Some people assess the level of risk to their health differently to others, and so changes to behaviour are made at different rates.

Health behaviours are very important to overall health and well-being but, as with other health determinants, they can be influenced by and interact with other determinants.

If good practice is ignored and/or protective factors are not addressed, continuously partaking in **health-compromising behaviours** poses risks to health. Alternatively, if people adopt advice on good practice then they can to some extent be protected against illness, injury and disease and enhance their health overall.

health-compromising behaviours: actions a person carries out that have a negative impact on their health and can be life-threatening

Sun protection

Sun protection is very important as sun exposure is a risk factor to the health of the skin. Fifteen minutes of exposure to the sun's rays is sufficient time to become sunburnt and any sunburn can damage skin cells and increase the chance of developing skin cancer. Protective factors—including applying sunscreen, seeking shade and wearing sunglasses, hats and appropriate protective clothing—can assist in protecting the skin from damage. This health behaviour requires constant vigilance.

sun protection: shielding the skin and eyes from the damaging ultraviolet rays emitted by the sun

A 2007 study found that, despite the level of public awareness about sun exposure leading to skin cancer, many Australians do not act on this message. Sun exposure during childhood and youth is considered to be the most significant risk for developing melanoma skin cancer. Melanoma remains the type of cancer with the highest incidence rate among young people. (AIHW, 2007)

A protective factor to reduce the risk of skin cancers includes covering up to avoid sunburn. The Cancer Council Victoria encourages Australians to be SunSmart by following the 'Slip, slop, slap, seek, slide' behaviour:

- Slip on clothing—wear protective clothing that covers the arms and legs as well as the body.
- Slop on sunscreen—use SPF30+ broad spectrum sunscreen and reapply every two hours.
- Slap on a hat—wear a hat that shades the face and neck.
- Seek shade—avoid sun exposure during summer between 11 and 3 (daylight saving time).
- Slide on sunglasses—wear wrap-around sunglasses.

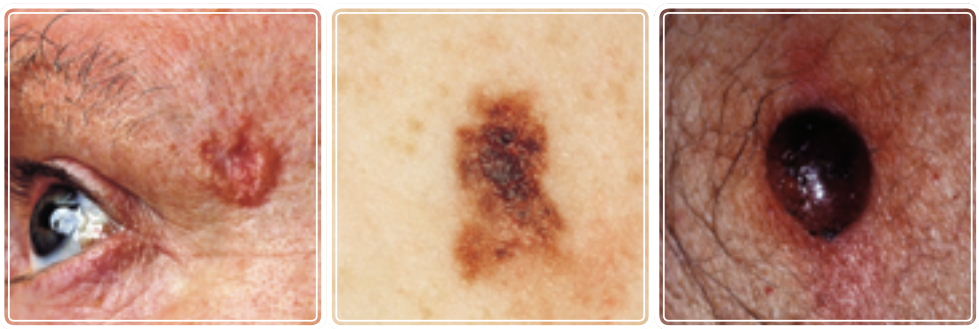


Figure 2.4 Three main types of skin cancer

Eating habits and food intake

eating habits: established behaviours associated with food intake and eating

food intake: type and amount of food eaten by a person

physical activity: body movements where muscles are used and body energy is expended

exercise: purposeful structured and repetitive bodily movements performed to improve a person's fitness level

Eating habits play a major role in health. Poor eating habits are considered risk factors for various **chronic diseases**, including type 2 diabetes, obesity, cardiovascular disease and certain cancers such as colorectal cancer. **Food intake** issues involve many people overeating foods high in fat and sugar, taking in more kilojoules of energy than their bodies need. This can lead to obesity. Today, the Australian population has been measured as the most overweight.

Figure 2.5 Why does eating fruit and vegetables play a protective role in health?

Eating habits that are of particular concern involve low consumption of fruit and vegetables and high intake of saturated fats. A diet that is high in **saturated fat** increases the risk of coronary heart disease as it raises the blood cholesterol level. *Australia's Health 2008* found that low fruit and vegetable consumption was estimated to be responsible for 2.1 per cent of the total burden of disease in 2003.

It is important to promote sound eating habits and a diet that includes nutritious foods as these are protective factors for good health. Individuals should adopt eating habits that include eating well-balanced meals (including at least two serves of fruit and five serves of vegetables daily), eating low-fat sources where possible and obtaining the required nutrient intake to meet body and energy needs. The National Dietary Guidelines recommend consuming a wide variety of nutritious foods, including high intake of plants food such as cereals, fruit, vegetables, **legumes** and nuts, and choosing foods low in salt. Fruit and vegetable consumption, in particular, is considered a protective factor for many chronic diseases.

Level of physical activity

Physical activity includes **exercise** and any other efforts to be active. Exercise includes activities such as swimming, cycling, walking, jogging a course or circuit, individual or group sports and fitness classes at a gymnasium. Activities should involve duration and intensity of movement and so increase heart rate and lung capacity. This can be measured and is often where data is collected.

Figure 2.6 What are other forms of incidental exercise?

Other efforts that people make to keep active include walking instead of driving, taking the stairs instead of using a lift, shopping, doing housework, sweeping, gardening, playing outdoor games and playing with children. These could be considered to be 'incidental exercise'; that is, body movement that is part of daily life and includes purposeful intentions to choose more active behaviours. Incidental exercise is very important although it is difficult to measure. Active behaviours help to maintain good health as movement generally improves muscle strength and keeps bodily organ functions healthy. Being active and participating in regular moderate exercise are considered protective factors to maintaining good health and healthy muscles, controlling body weight and protecting against ill health conditions.

Inactive people or those who remain sedentary are more likely to suffer health problems. Physical inactivity usually leads to becoming overweight, as sedentary people consume more foods than their body need for their movements. Inactivity is also associated with an increased risk of ill health and death, particularly relating to cardiovascular disease.

There are many factors that influence how active a person is. Factors can include the level of interest in improving strength and coordination, available areas for recreation, having someone with whom to exercise, money, enjoyment, weather, safety in the environment and time.

Participating in 30 minutes of moderate exercise every day is considered a protective factor that will reduce the risk of heart disease and high blood pressure.

Substance use

Substance use involves the use or dependence on various drugs, including over-the-counter, prescription and **illicit drugs**. Overindulgence in or dependence on these substances can lead to altered behaviour and, eventually, detrimental effects on physical and psychological health.

substance use: use or dependence on tobacco, alcohol and other drugs, including illicit drugs, inhalants, analgesics, prescription drugs and pharmaceutical substances (such as steroids) used for non-medical purposes

Tobacco smoking

Tobacco is the largest single cause of ill health and preventable death in Australia. Most adult cigarette smokers begin tobacco smoking in their youth. Nicotine, the main ingredient in cigarettes, is highly physically addictive and can be difficult to give up. In addition, tobacco smoke contains more than 4000 chemicals, including at least forty-three that are known to cause cancers. **Tobacco smoking** causes an immediate loss of physical fitness and respiratory problems, and is linked to over twenty-five diseases. These diseases include coronary heart disease, several cancers (including lung, mouth, bladder, kidney and cervical), as well as chronic lung disease and emphysema. Every cigarette a person smokes does damage to the body.

tobacco smoking: inhaling smoke from prepared burned dried leaves of the tobacco plant, mostly in the form of cigarettes

With this health behaviour, tobacco smoking is a major risk factor for ill health and disease and there are no protective factors. **Passive smoking** (breathing in other people's smoke) also increases the risk of lung cancer and a number of other diseases.

passive smoking: pollution, by a person smoking cigarettes, of the surrounding environment, which can lead to non-smokers inhaling the tobacco smoke

Alcohol use

Alcohol use can cause many health issues and lead to death. Alcohol is physically addictive, with most alcoholic adults beginning their addiction in their youth. Heavy alcohol consumption and addiction become risk factors for coronary heart disease, cancer (for example stomach, colon, breast, pancreas and liver cancer), blood disorders and loss of memory. Long-term heavy use leads to cirrhosis of the liver and may lead to brain damage. High-risk levels of drinking alcohol include binge drinking. Serious binge drinking can result in alcohol poisoning, which can then lead to coma and death. Alcohol is a major risk factor for injury as a result of traffic accidents and is associated with mental health problems, especially depression.

alcohol use: consumption of beverages that contain ethanol; a drug that has a depressive effect on the body

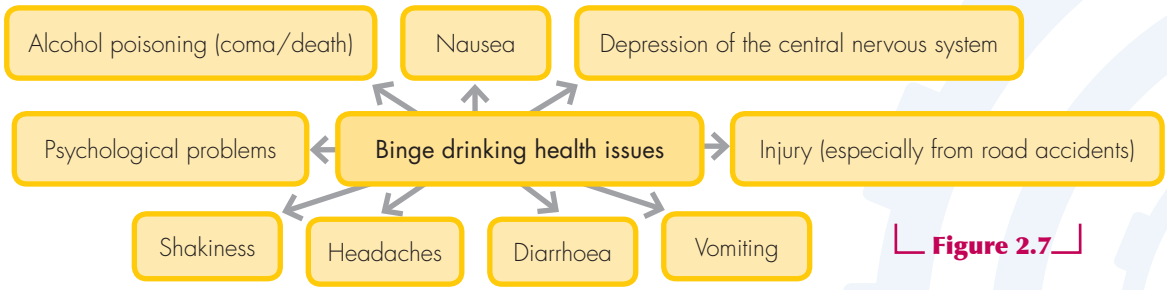


Figure 2.7

Moderate use of alcohol is not necessarily harmful. Studies suggest that low levels of alcohol consumption can be a protective factor against high blood pressure, heart disease, stroke and gall bladder disease.

Other drugs

There are many ill effects and consequently ill health associated with the non-medical use of prescription drugs such as analgesics (painkillers) and steroids, the use of illegal drugs such as heroin and ecstasy and the use of volatile substances as inhalants (such as glue, solvent and petrol). Dangers include illness from accidental poisoning and death, due to the toxicity of the drugs.

Australia's Health 2008 reports that **illicit drug** use can lead to illness and death, such as HIV/AIDS, hepatitis C, malnutrition, damage to heart valves, poisoning, **mental illness**, suicide, self-inflicted injury and overdose. The use of non-sterile equipment when administering a drug can be a risk factor in the transmission of hepatitis C and HIV. Illicit drugs can adversely affect a person's normal physical, intellectual, social and emotional development, as well as their health.

Needle and syringe programs are a protective factor. These encourage intravenous drug users to exchange their used needles for clean ones, preventing the risk of infection.

illicit drugs: chemical substances that are illegal to possess and which are taken to alter mood or behaviour

Sexual practices

Sexual practices between individuals can be associated with ill health and disease. Practices of **unsafe sex** and **unprotected sex** leave people vulnerable to a range of ill health conditions.

Instances of unsafe and unprotected sex can transmit infections such as **sexually transmitted infections** (STIs), chlamydia, HIV, hepatitis B and C, and can also increase an individual's risk of some cancers such as cervical cancer and anal cancer. Individuals who practise unsafe and unprotected sex are vulnerable to diseases that their sexual partner has and which can be sexually transmitted. Health risks increase with multiple sexual partners.

sexual practices: all sexual acts in which people engage with each other

unsafe sex: sexual intercourse with multiple partners with no knowledge of their sexual history or state of health

unprotected sex: engaging in sexual practices without the use of protective barriers such as condoms

sexually transmitted infections (STIs): infections that are passed from one person to another during sexual practices

The causes of sexually transmitted infections

Viruses	Bacteria	Fungus	Lice or mites
Genital and anal warts Genital herpes Hepatitis A* Hepatitis B* HIV*	Chlamydia Non-specific urethritis Gonorrhoea Syphilis	Thrush	Pubic lice* Scabies

* May be transmitted through means other than sexual contact

Figure 2.8 The causes of sexually transmitted infections

The incidences of STIs among Australians have increased over the past decade. *Australia's Health 2008* reports that:

- chlamydia is the most frequently reported STI
- instances of syphilis have increased since last measured in 2004
- male homosexuals reported a higher lifetime number of sexual partners placing them at greater risk of STIs.

Developing and maintaining friendships

Developing and maintaining friendships is an important part of health and development at all ages. Some friendships formed in youth are fleeting but others become sustaining and long-lasting. Older people may have long-standing friendships that last over many years. These may involve mutual support as each person goes through highs and lows in life. Friendships that are based on mutual respect and care for each other will have a positive impact on health and development, as they provide each person with emotional support as well as opportunities for social interactions. Having supportive friendships can help a person to develop a sense of belonging and feelings of being connected within groups and society. True friends will offer encouragement and in turn this can assist in the development of positive self-esteem and self-worth.

Figure 2.9 Why is having good friendships important?

Seeking help from health professionals

The ability to obtain appropriate information, support and treatment is essential for positive health and development. It is important that every person knows of the range of services available to them in times of need; for example, online services such as Reachout and Headrooms aimed at young people. This range of services extends further than simply knowing how to see a doctor when one has a physical illness. Emotional support may be required in times of mental distress and trauma, or child illness or death, or family breakdown. A person might need to seek dietary advice from a dietician because of allergies and food intolerance. There are many health services, including online information that a person will need to access over the lifespan. It is important that they consult and seek out advice to alleviate stress and unnecessary worry, and obtain a proper diagnosis. Treatment, intervention and prevention strategies might be important in lessening the severity of a condition or unnecessary burden on close friends and family.

Linking thinking

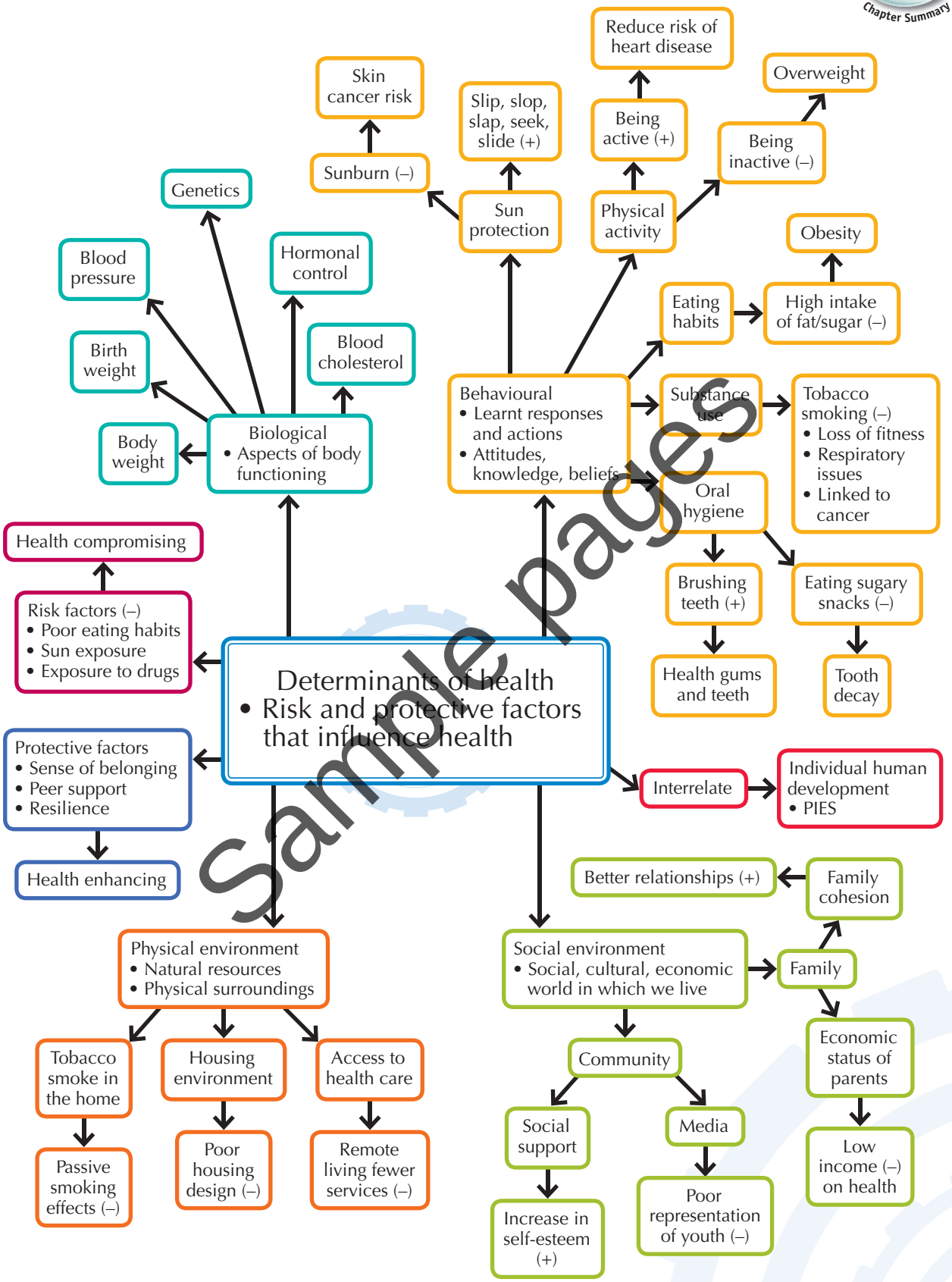


Figure 2.18

Chapter review questions

1. Discuss the following statement: 'Understanding the role determinants of health play in health and individual human development provides the best opportunity to promote health-enhancing behaviours to Australians'.
2. Prepare a concept map showing how a behavioural determinant, for example sun protection, impacts on the areas of individual human development and the dimension of health.
3. Outline the associated risk and protective factors for one determinant of health.
4. In a small group identify a trend that impacts on the health of Australians such as low consumption of fruit and vegetables. Discuss the associated risk and protective factors that could impact on health and individual human development. Identify health-enhancing behaviours that could be promoted to address this issue.

Exam preparation

Melanoma is a type of skin cancer. The number of cases of melanoma in Australia is among the highest in the world. Melanoma can cause morbidity and mortality. Sun safety plays an important role in decreasing morbidity rates. The early detection of melanoma helps reduce mortality rates.

1. Define the term 'determinant of health'.

2 MARKS

2. Outline the difference between the terms 'morbidity rate' and 'mortality rate'.

2 MARKS

3. Identify and explain how a biological, behavioural and social determinant may contribute to decreasing mortality and/or morbidity rates with melanoma.
   - **a** Biological determinant
     Explanation:
   - **b** Behavioural determinant
     Explanation:
   - **c** Social determinant
     Explanation:

2 + 2 + 2 = 6 MARKS
TOTAL = 10 MARKS