There are a range of biological, behavioural, physical environment and social determinants that impact significantly on the health of children in Australia. A range of health issues contribute significantly to the burden of disease during childhood (figure 9.37) and are the product of a combination of these determinants.

By understanding these health issues and the determinants that act as risk and/or protective factors for them, a range of personal, community and government strategies and programs can be implemented to optimise the health and individual human development of children in Australia.

Asthma is a common inflammatory condition of the airways resulting in wheezing, breathlessness and tightness of the chest. The lining of the airways become swollen and inflamed, producing sticky mucus that causes a narrowing of the airways, making it difficult for the child to breathe. Asthma cannot be cured; however, with the appropriate asthma preventive and relief medication asthma can be controlled effectively, enabling children to lead active, normal lives.
### Why is asthma a health issue for children?

Asthma is one of the most common causes of hospital admissions and visits to medical centres for children. It is the most frequently reported long-term chronic condition with approximately 10 per cent of Australian children aged 0–14 having asthma (Australian Bureau of Statistics, 2007–08 National Health Survey). Figure 9.39 shows the prevalence of asthma among children aged 0–14 in 2007–08.

![Figure 9.39: Prevalence of asthma among children aged 0–14, 2007–08](image)

### Determinants acting as risk and/or protective factors in relation to asthma

While the underlying causes of asthma are still not well understood, the following determinants may increase the risk of developing asthma or increase the risk of having an asthma attack.

#### Biological

Biological determinants that impact on asthma in children include:

- Genetics: having a parent with asthma, eczema or hay fever increases a child's risk of developing asthma.
- Obesity: being obese increases the risk of a child developing asthma.
- Sex: more boys have asthma than girls. This may be due to the fact that young boys tend to have smaller lungs than young girls.
- Respiratory infections: infants who have respiratory infections are up to 40 per cent more likely to develop asthma as children (Asthma Australia, www.asthmaaustralia.org.au/Causes.aspx).

#### Behavioural

Behavioural factors that impact on asthma in children include:

- Dietary intake: generally, food allergens are uncommon triggers for asthma. In a small number of children, food can trigger an asthma attack due to a food allergy or chemical intolerance. Approximately 2.5 per cent of all people with asthma are affected by food or drinks. A common myth is that milk is a trigger for asthma; however, studies have not shown a link between the consumption of milk and asthma. In fact, research has shown that children who consume...
milk on a daily basis (three or more serves) are less likely to develop asthma when compared with children with the lowest intake of milk (National Asthma Council, ‘Asthma’ fact sheet, www.nationalasthma.org.au/uploads/publication/dairy-products.pdf).

- Physical activity: exercise may trigger an asthma attack. Exercise-induced asthma can usually be controlled with an appropriate warm-up and medications.
- Breast feeding: infants who are breastfed are less likely to wheeze than those who are fed cow, soy milk or infant formula.

**Physical environment**

The physical environment can impact on asthma in children in the following ways:

- Tobacco smoke in the home: children who have a mother who smokes are four times more likely to wheeze and are at greater risk of chest infections.
- Air pollution: both indoor and outdoor air pollution can make asthma symptoms worse; however, it is not clear if pollution causes asthma.
- Exposure to allergens: there may be a link between allergens and the development of asthma; however, this is still unclear.

**Social**

Some of the social determinants that have a relationship with childhood asthma include:

- Education: those with lower levels of education have higher rates of smoking. Being exposed to tobacco smoke in the home increases the risk of respiratory infections and possibly asthma during childhood. Smoking during pregnancy can increase the risk of asthma during childhood. A lack of understanding about asthma and its treatment may result in asthma being left untreated, increasing the risk of mortality.
- Socioeconomic status: higher rates of asthma are seen in a low socioeconomic status population. A possible reason for this is increased exposure to the environmental factors that impact on asthma in poor households. For example, living in a household that contains mould may increase the risk of an asthma attack (Partners Health Care, Asthma Center, www.asthma.partners.org/NewFiles/BoFAChapter15.html).

**TEST your knowledge**

1. (a) Briefly explain asthma.
   (b) What are the symptoms of asthma?
   (c) What percentage of children had asthma in 2007–08?
2. Explain why asthma is a health issue for children.

**APPLY your knowledge**

3. Select two determinants of health and explain how they impact on asthma.
4. Prepare a poster that could be used to educate children about the risks of asthma and the determinants that can protect against/contribute to it.
5. Explain three ways in which asthma could impact on the health and/or individual human development of children.
6. Use the Asthma weblink in your eBookPLUS to find the link to the following questions.
   (a) Outline how asthma is diagnosed in young children.
   (b) What are the main causes of asthma in young children?
   (c) Explain how asthma in children is treated.
   (d) Select one determinant and explain how it impacts on asthma in children.
Falling is the most common cause of injury for children of all ages. The seriousness of an injury is determined by the height from which the child has fallen, the surface onto which the child falls and the objects or surfaces the child may hit as they fall. Other injuries such as burns and scalds can occur as a result of fire, hot surfaces and hot liquids. Hot liquids cause 2 out of 3 burns in young children. Severe burns can actually result in the death of a child as their skin is thinner than the skin of an adult.

Swallowing chemicals or poisons are also key reasons for children being hospitalised. Children, particularly under the age of five, will naturally put things in their mouth. Household chemicals such as cleaning products and medicines are the most common cause of poisoning in children.

Other causes of injury and death in children include bicycle accidents, road accidents, drowning and choking.

Why are falls and injuries a health issue for children?

Approximately 260 children die and 58,000 are hospitalised as a result of unintentional injury in Australia. The vast majority of these injuries and deaths are preventable (www.kidsafevic.com.au/about/child-injury).

Falls and injuries are a health issue for children as unintentional falls are the most common cause of injury hospitalisations for children aged 0–4, accounting for 42 per cent of the total for injury hospitalisations. This is followed by injuries due to smoke inhalation, contact with fire, heat and hot substances (8 per cent) and poisoning by drugs (6 per cent).

In the 5–14 age group, falls were the most common cause of injury requiring hospitalisation (46 per cent), followed by transport accidents (16 per cent) (AIHW, Hospital separations due to injury and poisoning, Australia 2009–10, www.aihw.gov.au/WorkArea/DownloadAsset.aspx?id=60129542180).
Determinants acting as risk and/or protective factors in relation to falls and injuries

Biological
A range of biological determinants can increase the risk of falls and injuries in children:

- **Body proportion:** children, particularly toddlers, have a large head size in relation to their body. This is due to the cephalocaudal pattern of development. As a result, they have a higher centre of gravity which makes them more likely to fall over.
- **Height:** being smaller in stature than adults, children are less likely to be seen by vehicles on the road and are less able to see potential dangers.
- **Thinner skin:** children tend to have thinner skin than adults which puts them at greater risk of damaging their skin from an injury or fall.
- **Smaller body size:** children have smaller fingers, hands, arms, toes, feet and legs which can get caught in small gaps and holes, thereby increasing the risk of injury.
- **Motor skill development** (see key skills section at the end).

Behavioural
Behavioural determinants that play a role in injuries and falls in children include:

- **Physical activity:** children engage in play and physical activity which can potentially result in falls and injuries. While playgrounds have been designed to reduce the risk of falls and injuries, there is still a significant risk. Riding a bicycle, scooter, skateboard or roller skates/blades can increase the risk of falls and injuries.

Physical environment
Factors within the physical environment can act to increase or decrease the risk of falls and injuries. Examples include:

- **Playgrounds:** many playgrounds have been designed to reduce the risk of injury. For example, many have a rubberised surface which decreases the risk of injury if a child falls. For older style playgrounds, these types of surfaces do not exist which increases the risk of a child being injured.
- **Home environment:** many falls and injuries occur in the home. Tripping on objects in the home, such as toys left lying around, can increase the risks of falls. Leaving children unsupervised around hot surfaces and objects can result in a child being burnt or scalded if they touch the surface or object. Leaving medications and poisons in areas where children can gain access to them can potentially result in severe internal injuries and possibly death.

Social
A range of social determinants play a role in the rate of falls and injuries experienced by Australian children. Examples include:

- **Lack of knowledge leading to risk-taking behaviour:** children do not always have the knowledge regarding how to keep safe. As a result, they may engage in behaviours that increase their risk of falls and injuries.
- **Natural inquisitiveness:** children are naturally inquisitive and may become injured when exploring their surroundings.
- **Peer pressure:** some children may feel pressured by their peers to engage in risk-taking behaviour, leading to falls and injuries. For example, completing a trick on a skateboard or bike may result in a child falling and injuring themselves.
Lack of supervision: parents, guardians or supervisors may not maintain constant supervision of a child in their care. As a result, a child may fall and become injured in a situation that may have been prevented if the child had been carefully supervised.

**TEST your knowledge**

1. Why are children at greater risk of falls and injuries than adults?
2. Why are falls and injuries an issue for children in Australia?
3. Discuss the determinants of health that may increase or decrease the risk of falls and injuries in children.

**APPLY your knowledge**

4. Using the determinants of health as the basis of your response, explain reasons that may account for children having high rates of falls and injuries.

5. Design a poster that could be used to educate parents about the importance of ensuring the safety of children in their home.

6. Access the Kidsafe weblink in your eBookPLUS and prepare a fact sheet that includes:
   (a) an explanation of the importance of ensuring the safety of children
   (b) relevant statistics (use Australian data)
   (c) factors that work to increase or decrease the risk of falls and injuries
   (d) an explanation of the role of Kidsafe in educating the Australian population about the importance of promoting the safety of children.
Food allergies are an adverse immune response to a food that has been consumed by an individual. In an attempt to protect the body, the immune system produces IgE antibodies to that particular food. These antibodies trigger allergy cells in the body (mast cells) to release chemicals into the bloodstream. Once the body has made antibodies against a particular food or foods, the body recognises the foods when they are consumed, resulting in an allergic reaction. A range of symptoms can occur including breathing difficulties, stomach upsets, skin rashes and, in severe cases, death. In children with severe allergies, a reaction can occur as a result of touching or breathing in the particles of food.

A serious and potentially life threatening allergic reaction is known as anaphylaxis. The symptoms of an anaphylactic reaction include swelling of the airways, serious breathing difficulties, a decrease in blood pressure, loss of consciousness and possibly death. Children who have an anaphylactic reaction are required to have an injection of epinephrine (EpiPen) which will prevent the reaction from becoming life threatening.

Children can be allergic to a wide range of foods but the eight most common foods that cause allergic reactions are: milk, eggs, peanuts, soy, wheat, tree nuts (such as walnuts and cashews), fish and shellfish (such as prawns) (Teens Health, ‘Food Allergies’, kidshealth.org/teen/food_fitness/nutrition/food_allergies.html).

Why are food allergies a health issue for children?

Food allergies occur in approximately 1 in 20 children. Over the past decade, hospital admissions as a result of anaphylaxis have doubled in Australia. In the 0–4 age group, admissions due to food allergies have increased five-fold in the same period. Anaphylaxis is a severe allergic reaction that can result in death (Australasian Society of Clinical Immunology and Allergy, ‘Food Allergy’, www.allergy.org.au/patients/food-allergy/food-allergy).

Determinants acting as risk and/or protective factors in relation to food allergies

Food allergies and the management of them in children have been linked to a number of risk and protective factors including the following.

Biological

- Age: some food allergies in children are not severe and will disappear over time.
- Genetic predisposition: children who have one family member with one or more allergic diseases, including asthma and eczema, have a 20 to 40 per cent greater risk of developing a food allergy. This increases to 50 to 80 per cent if there are

• Sex: a higher proportion of male children tend to have food allergies compared to female children.

**Behavioural**

• Breastfeeding: exclusive breastfeeding in the first four to six months of a child’s life can protect against the development of food allergies in early childhood. If a child is allergic to a particular food, then it is important for the breastfeeding mother to avoid eating that food.

• Early commencement of solid foods: starting a child on solid foods earlier than recommended can increase the risk of developing food allergies in early childhood.

• Accidental consumption of foods causing an allergic response: children with food allergies may consume food that they are allergic to. Children must be taught not to take food from other children and consume only food that has been specifically prepared for them.

**Physical environment**

• Availability of foods causing allergic responses: where children have access to foods they are allergic to, there is an increased risk of an allergic response.

**Social determinants**

• Education: education plays a key role in understanding the causes of food allergies and how to prevent an allergic reaction. For a child with anaphylaxis, education regarding how to effectively administer the EpiPen is important for ensuring that the child is treated appropriately.

• Family: the types of foods that are eaten within a family can reduce the risk of a child with a food allergy having a reaction. It is the responsibility of family members to ensure that a child is not at risk and appropriate supervision of a child will assist in ensuring that they do not consume foods that could potentially cause an allergic reaction.

• Access to health care: children who experience a severe allergic reaction require an injection of epinephrine in order to prevent the reaction from becoming life threatening. Children who have an allergic reaction are required to be monitored in a medical facility for at least four hours to ensure that they have effectively recovered from the anaphylactic reaction.

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**Case study**

**Alarm as child food allergy rate soars**

_By Adam Creswell and Tom Westbrook_

The record rate of childhood food allergy in Australia could represent a ‘second wave’ of allergic illness, following the now waning epidemic of asthma seen in the 1990s.

A senior immunologist has warned that studies show 10 per cent of children as young as 12 months have inflammatory responses to various foods, making Australia the world’s food allergy capital.
Case study review

1. Why is Australia being called the ‘food allergy capital of the world’?
2. What is being suggested as possible reasons for the increase in food allergies in children?
3. Which allergies are less likely to resolve themselves and most likely to trigger life-threatening anaphylaxis?
4. Select three determinants and explain how they can impact on food allergies and their management in children.

TEST your knowledge

1. Explain how an allergy develops.
2. What are the top eight foods that can cause an allergic reaction?
3. Explain why food allergies are a health issue for children in Australia.

APPLY your knowledge

4. Explain how access to health care can promote the health of children with food allergies.
5. Make a short video that could be used to educate parents regarding the determinants that impact on food allergies in children.

6. Use the Food Allergy weblink in your eBookPLUS to find the link to this question.

(a) What is the proportion of Australian children affected by food allergies?
(b) How many Australians die per year as a result of an anaphylactic reaction?
(c) What are the possible causes of food allergy referred to in the video?
(d) What foods can cause an allergic reaction?
(e) Explain the ‘de-sensitisation treatment’ referred to in the video and how it can assist children with food allergies.

Source: The Australian, 6 April 2011.
Juvenile arthritis is any form of auto-immune or inflammatory condition that can occur in children under 16 years of age. The normal role of the immune system is to fight infections; however, in a child with juvenile arthritis, the immune system starts attacking the healthy tissues, particularly the lining of the joint (synovial membranes). Synovial membranes produce synovial fluid that lubricates and cushions the connecting bones of the joint as well as providing nutrition to the cartilage covering the ends of the bones. When the synovial membranes become inflamed, more fluid is produced, resulting in the affected joints becoming swollen, painful and stiff. The term arthritis means ‘joint inflammation’, but juvenile arthritis can also affect the eyes, skin and gastrointestinal tract. The symptoms typically include pain, joint swelling and stiffness, skin rashes, anaemia, fever and inflammation in one or more joints. Juvenile arthritis is also referred to as juvenile rheumatoid arthritis, juvenile idiopathic arthritis, juvenile chronic arthritis and Still’s disease.

**Why is juvenile arthritis a health issue for children?**

Juvenile arthritis affects less than 1 per cent of children under the age of 16 in Australia. Juvenile arthritis is not a particularly common condition of childhood, but it does have significant impacts on health and individual human development. It can cause damage to the joint cartilage that covers the ends of the bones as well as the surrounding structures. This can result in joint weakness, instability and deformities that can interfere in the child’s ability to perform the most basic tasks such as walking, eating and dressing. The pain, stiffness and fatigue associated with juvenile arthritis may impact on their mental health and sense of well being. A child with juvenile arthritis may be unable to participate in certain physical and social activities, resulting in a feeling of isolation.

In the 10 years to 2009–10, the age-standardised hospitalisation rates for juvenile arthritis increased significantly, from 8.8 per 100 000 population in 2000–01 to 28.9 per 100 000 (see figure 9.45). The hospitalisation rate for girls (39 per 100 000 population) was more than double the rate for boys (19 per 100 000 population).
Determinants acting as risk and/or protective factors in relation to juvenile arthritis

Research into the determinants acting as risk and/or protective factors in relation to juvenile arthritis have focused on genetics and environmental factors such as exposure to viruses, bacterial infections, psychological stress and physical trauma. The research has found genetic factors that increase the susceptibility to juvenile arthritis; however, research into the impact of environmental factors has been less successful.

**Biological**

Biological factors that impact on juvenile arthritis include:
- Genetics: current research indicates that there may be a genetic predisposition to juvenile arthritis.
- Age: some children may grow out of the condition as they age.
- Sex: a greater number of girls are affected by juvenile arthritis than boys.

**Behavioural**

Although a link has not been established between particular behaviours and the onset of juvenile arthritis, there are behaviours that can assist in managing the condition, including:
- Regular physical activity: regular physical activity will help maintain the mobility of the joints. Over-exercising can also increase the pain associated with juvenile arthritis. Exercising in water enables the child to complete non-weight bearing exercise, which reduces the impact on the joints.
- Eating habits: if children over-consume energy-dense nutrients then they are at risk of becoming overweight/obese. Extra body weight increases the stress on joints, particularly the knees, hips and back, which can increase the pain associated with juvenile arthritis. (Note: there is no evidence that foods, toxins, allergies or vitamin deficiencies are a cause of juvenile arthritis.)

**Physical environment**

- Access to recreation facilities: if recreation facilities such as walking paths and swimming pools are not accessible, children with juvenile arthritis may not get the required amount of physical movement required to maintain joint mobility.
- Housing environment: ensuring safety in the home is important for reducing the risk of injury for children with juvenile arthritis due to their inability to move quickly and lack of balance as a result of inflamed joints.

**Social determinants**

- Access to health care: in order to promote the health of children with juvenile arthritis, it is important that they are able to access the relevant health care. As there are different types of juvenile arthritis, the type of treatment will vary according to individual circumstances. Children may require therapy to strengthen muscles and keep the joints flexible in order to promote normal limb development. Medications to control inflammation and prevent long-term joint damage are also important for treating children with juvenile arthritis.
- Parental education: being able to effectively manage and treat juvenile arthritis is dependent on the parents/guardians having the required knowledge to ensure that the relevant courses of treatment/therapy are being followed.
9.18 Determinants that act as risk and/or protective factors for juvenile arthritis

### Case study

**Amelie fights arthritis at the age of four**

*By Marianne Betts*

At just four years old, Amelie Haynes is one of Victoria’s youngest arthritis sufferers. Diagnosed just after her second birthday, the disease more likely in her grandparents affects her knees, ankles, wrists and both index and ring fingers. Mum Liz Dexter said the first signs something was wrong came when Amelie began limping. Doctors diagnosed the Frankston youngster with polyarticular arthritis, a type affecting more than five joints.

Arthritis is an autoimmune condition, where the immune system, which normally fights off foreign bodies, attacks and inflames the joints. “It was a shock to discover our little girl had arthritis — most people think it’s an old person’s disease and it’s amazing to find out it’s not”, Ms Dexter said.

When the pain is bad Amelie tells her parents she has ‘prickles’ in her legs. ‘She doesn’t quite have the stamina to keep up with other kids, and can’t climb quite as high on the monkey bars’, Ms Dexter said. ‘But she’s an amazing trooper, it breaks my heart, she doesn’t know any different so she perhaps copes better than I do.’

Doctors did not know why Amelie developed arthritis or whether she would outgrow it, Ms Dexter said. ‘One of the hardest things to understand is there is no miracle cure’, she said.

Amelie takes an anti-inflammatory tablet every day, and has cortisone injections in her joints every year. Monash Children’s Hospital paediatric rheumatologist Angela Cox said arthritis affected one in 1000 — or 5000 — Australian children. There were seven different subtypes of juvenile arthritis, and polyarticular affected 30 per cent of child sufferers, she said.

While it was a chronic condition, there were many good treatments and children often went into remission, she said. ‘Amelie is doing pretty well. Although she is not in remission, her condition waxes and wanes.’ ‘Many children with arthritis go on to lead happy and productive lives.’

*Source: Herald Sun, 10 November 2011.*

### Case study review

1. **How many subtypes of juvenile arthritis are there?**
2. **What were some of the symptoms experienced by Amelie?**
3. **What are the treatment options for children with juvenile arthritis?**
4. **Explain why juvenile arthritis is a health concern for children in Australia.**

### TEST your knowledge

1. Explain juvenile arthritis.
2. What are the symptoms of juvenile arthritis?
3. What causes juvenile arthritis?
4. Outline the impact that juvenile arthritis has on the health and individual human development of children.

### APPLY your knowledge

5. Make a short video that could be used to educate parents about caring for children with juvenile arthritis.

6. **Use the juvenile arthritis weblink in your eBookPLUS to find the link for this question.**
   (a) How has juvenile arthritis impacted on the health and individual human development of Maria?
   (b) How many children are diagnosed with the condition in Australia?
   (c) What is one of the most effective treatments for people with juvenile arthritis?
Type 1 diabetes is an auto-immune condition where the immune system attacks the cells in the pancreas that are responsible for producing insulin. Insulin is required for the body's cells to convert glucose into energy. Without insulin, the glucose remains in the bloodstream rather than being used by the cells to create energy. In order to provide the energy that is required, the body burns other sources of fuel such as stored fats. The burning of fat in the body results in the release of by-products called ketones. When ketones are released in large amounts it can lead to a potentially life-threatening condition called ketoacidosis.

The symptoms of type 1 diabetes include:
- extreme thirst
- frequent urination
- weight loss
- tiredness/fatigue
- blurred vision
- irritated skin, particular around the genitals
- nausea and vomiting.

It is important to monitor the blood glucose levels of children with type 1 diabetes via a blood glucose monitor. This requires testing a very small amount of blood from a pin prick on the finger. Affected children require up to four insulin injections every day. Insulin can be administered via a syringe or an insulin pump which is carried on the body and regularly administers insulin into the bloodstream. Children with type 1 diabetes have to ensure they eat a well-balanced diet so blood glucose levels remain stable. There is no cure for type 1 diabetes so it is important that it is effectively managed by treatment, nutrition and exercise.

**Why is type 1 diabetes a health issue for children?**

Australia is ranked seventh in the world for prevalence of type 1 diabetes in children aged 0 to 14 years of age and sixth for incidence (Diabetes Australia, 'Diabetes: the
silent pandemic and its impact on Australia’, page 3, 2012). From 2000 to 2009, the national diabetes register recorded 9308 new cases of type 1 diabetes, which is an average of six new cases per day. The average incidence rate for children aged 0–14 years was 22 per 100 000 people over the period 2000 to 2009. Children had higher incidence rates of type 1 diabetes when compared to those above the age of 15 years (refer to figure 9.47).

![Incidence rate of type 1 diabetes, by age at first insulin use and sex, 2000–09](image)

**Determinants acting as risk and/or protective factors in relation to type 1 diabetes**

**Biological**

- Genetic predisposition: children with type 1 diabetes in the family are more likely to develop type 1 diabetes.
- Age: the incidence of type 1 diabetes decreases with increasing age.
- Viruses: more recent research has indicated a possible link between specific viruses and type 1 diabetes; however, further research is required in this area.

**Behavioural determinants**

Although behavioural determinants do not increase the risk of type 1 diabetes, they do impact on the management of the condition in the following ways:

- Monitoring of blood glucose levels: in order to manage the condition, blood glucose levels must be monitored to ensure they remain within the required levels to maintain health.
- Eating habits: to maintain stable blood glucose levels, children with type 1 diabetes must consume a well-balanced diet and eat regular meals. Meals should be low in fat, particularly saturated fats, and based on high fibre carbohydrate foods such as wholegrain breads and cereals, lentils, beans, vegetables and fruits.
- Regularly taking insulin: insulin is the only way in which blood glucose levels can be controlled in children with type 1 diabetes.
- Physical activity: regular exercise is an important part of the management of type 1 diabetes. It assists the insulin in working more efficiently and assists with blood glucose control. Regular physical activity also maintains body weight.
Physical environment

- Access to recreational facilities: regular physical activity is important for controlling the blood glucose levels of children with type 1 diabetes. Having access to facilities within the community that enable children to engage in regular physical activity assists in ensuring that children with type 1 diabetes undertake the required amount of physical activity.

Social

- Access to health care: the effective management of type 1 diabetes requires regular visits to health care facilities such as the local medical centre. If blood glucose levels drop too low, a child is at risk of hypoglycaemia. Medical treatment must be sought immediately, as the child may become unconscious and begin convulsing. High blood glucose levels can result in hyperglycaemia. The symptoms of hyperglycaemia include extreme thirstiness, frequent urination, blurred vision, tiredness, infections and weight loss. In this situation, the child must visit their doctor in order to assess their treatment and management plan.
- Parental education: for children to effectively manage their type 1 diabetes, they must have guidance from their parents/guardians. Younger children may not understand the importance of controlling blood glucose levels so it is important that the parents/guardians fully understand how to check blood glucose levels, the management of type 1 diabetes and the signs and symptoms of hypoglycaemia and hyperglycaemia.
- Parenting practices: it is important for children to learn how to manage their type 1 diabetes, including regularly checking their blood glucose, eating a well-balanced diet and the importance of exercise. This is particularly important as children become more independent and do not always have their parents/guardians with them. Parents/guardians play a key role in teaching their children about managing their type 1 diabetes.

FIGURE 9.48 Regular physical activity can assist in managing type 1 diabetes.

TEST your knowledge

1. Describe type 1 diabetes.
2. What are the symptoms of type 1 diabetes?
3. Explain why type 1 diabetes is a health issue for children.
4. What is the difference between hyperglycaemia and hypoglycaemia?
5. Explain how physical activity can assist in the management of type 1 diabetes.

APPLY your knowledge

6. Explain the determinants that are important in assisting children in managing their type 1 diabetes.
7. Develop an information brochure for parents that explains the steps required for the effective management of type 1 diabetes.
8. Use the type 1 diabetes weblink in your eBookPLUS to find the link to this question. What is the role of the pancreas?
   (a) Why is the function of insulin important?
   (b) What happens if the pancreas produces little or no insulin?
   (c) What happens if blood glucose drops to very a low level?
   (d) How can blood glucose levels be maintained?
9. Use the type 1 diabetes study weblink in your eBook PLUS to find the link to this question.
   (a) Explain what the type 1 diabetes study is investigating.
   (b) What environmental factors is the research team focusing on?
   (c) Explain why the research is considered critical.
A range of government, community and personal strategies and programs have been designed to promote the health and individual human development of children in Australia.

As many of the conditions/diseases that impact on children are not preventable, the strategies and programs focus on treating and managing the condition/disease. In the case of preventable health concerns such as falls and injuries, the strategies and programs focus on ways in which the health issue can be prevented. Ultimately, the focus is on enabling children to live long and healthy lives. Understanding the programs and strategies that focus on children can assist parents/guardians in maximising the health and individual human development of their children.

**Government strategies and programs**

The three levels of government in Australia, federal, state and local, all play a role in promoting the health and individual human development of children. In this section, examples of the strategies implemented by each level of government will be explored.

**Federal Government**

The Federal Government implements a range of strategies and programs to promote the health and individual human development of children in Australia. Examples include Australia's Physical Activity and Sedentary Behaviour Guidelines, The Dietary Guidelines for Australians, National Diabetes Support Scheme, Asthma Child and Adolescent Program, and National Immunisation Program.

**Australia’s Physical Activity and Sedentary Behaviour Guidelines**

There are five sets of guidelines as part of Australia’s Physical Activity and Sedentary Behaviour Guidelines. The following two focus on children:

- National Physical Activity Recommendations for Children 0–5 years — ‘Move and Play Every Day’
- Australia’s Physical Activity and Sedentary Behaviour Guidelines for Children 5–12 years.

The National Physical Activity Guidelines for Australians were developed to assist parents and guardians in promoting the health and individual human development of children. These guidelines recommend the amount of physical activity required daily to promote health and individual human development of children while also highlighting the importance of limiting the amount of time during which children from 5 to 12 years of age are sedentary.

The benefits of daily physical activity for children include the following:

- assists in achieving and maintaining a healthy weight
- builds strong bones and muscles
- improves balance, motor control and co-ordination
- promotes the development of social skills
- supports brain development
- promotes self-confidence and independence.

As discussed earlier, regular physical activity is very important for children who have type 1 diabetes or juvenile arthritis.
National physical activity recommendations for children 0–5 years — ‘move and play every day’

Recommendation

Infants (Birth to 1 year)

For healthy development in infants, physical activity — particularly supervised floor-based play in safe environments — should be encouraged from birth.

Before walking and crawling, infants actively reach, pull and grasp items. Infants should be provided with opportunities to move their head, body and limbs. Once they begin to walk, infants should be encouraged to be as active as possible in a safe environment.

Recommendation

Toddlers (1 to 3 years) & pre-schoolers (3 to 5 years)

Toddlers and pre-schoolers should be physically active every day for at least three hours, spread throughout the day.

Three hours of physical activity for toddlers and pre-schoolers does not have to be done all at once. Activity time can be accumulated throughout the day.

Recommendations

Children aged 2 to 5 years

For children 2 to 5 years of age, sitting and watching television and the use of other electronic media (DVDs, computer and other electronic games) should be limited to less than one hour per day.

Children aged less than 2 years

Children younger than 2 years of age should not spend any time watching television or using other electronic media (DVDs, computer and other electronic games).

Recommendation

All children (Birth to 5 years)

Infants, toddlers and pre-schoolers should not be sedentary, restrained, or kept inactive, for more than one hour at a time, with the exception of sleeping.
Sedentary behaviour, or ‘physical inactivity’, for long periods can have a negative impact on the health and individual human development of children.

**National physical activity recommendations for children 5–12 years**

**Recommendations regarding physical activity**

- For health benefits, children aged 5–12 years should accumulate at least 60 minutes of moderate to vigorous intensity physical activity every day.
- Children’s physical activity should include a variety of aerobic activities, including some vigorous intensity activity.
- On at least three days per week, children should engage in activities that strengthen muscle and bone.
- To achieve additional health benefits, children should engage in more activity — up to several hours per day.

**Recommendations regarding sedentary behaviour**

- To reduce health risks, children aged 5–12 years should minimise the time they spend being sedentary every day. To achieve this:
  - The use of electronic media for entertainment should be restricted to no more than two hours per day.
  - Long periods of sitting should be broken up with periods of physical activity.

**The National Diabetes Services Scheme (NDSS)**

The National Diabetes Services Scheme (NDSS) is an initiative of the Federal Government administered by Diabetes Australia Ltd. Through federal government funding, Diabetes Australia is able to provide over one million Australians diagnosed with diabetes, including children with juvenile diabetes, with practical assistance, information and subsidised products through the NDSS.

People who are registered with the NDSS have access to a range of subsidised government-approved products such as testing strips for checking blood glucose levels, free insulin syringes and insulin pump consumables (or supplies).

The Federal Government also funds the Type 1 Diabetes Insulin Pump Program which subsidises up to 80 per cent of the price of a clinically recommended insulin pump for children under the age of 18 years with type 1 diabetes. An insulin pump is a small computerised device that provides a continuous amount of insulin to the individual throughout the day or can be used to provide a greater amount of insulin at particular times of the day, such as during meal times. The pump is carried on the individual and a tiny tube is connected to the skin through which the insulin is delivered to the body.
The Australian Dietary Guidelines

The Australian Dietary Guidelines were released in 2013 to assist Australians in consuming a healthy diet and reduce the burden of disease associated with cardiovascular disease, obesity, some cancers and type 2 diabetes.

The guidelines include information relating to the different food groups and the number of serves that should be consumed from each food group to promote optimal health. Specific advice for children is contained within the guidelines.

The Australian Dietary Guidelines that relate to children are:

**GUIDELINE 1:**
To achieve and maintain a healthy weight, be physically active and choose amounts of nutritious food and drinks to meet your energy needs.

Children and adolescents should eat sufficient nutritious foods to grow and develop normally. They should be physically active every day and their growth should be checked regularly.

**GUIDELINE 2:**
Enjoy a wide variety of nutritious foods from these five food groups every day.
- Plenty of vegetables of different types and colours, and legumes/beans
- Fruit
- Grain (cereal) foods, mostly wholegrain and/or high cereal fibre varieties, such as breads, cereals, rice, pasta, noodles, polenta, couscous, oats, quinoa and barley
- Lean meats and poultry, fish, eggs, tofu, nuts and seeds, and legumes/beans
- Milk, yoghurt, cheese and/or their alternatives, mostly reduced fat (reduced fat milks are not suitable for children under two years of age).
- And drink plenty of water.

**GUIDELINE 3:**
Limit intake of foods containing saturated fat, added salt, added sugars and alcohol.

a. Limit intake of foods high in saturated fat such as many biscuits, cakes, pastries, pies, processed meats, commercial burgers, pizza, fried foods, potato chips, crisps and other savoury snacks.
   - Replace high fat foods which contain predominately saturated fats such as butter, cream, cooking margarine, and coconut and palm oil with foods which contain predominately polyunsaturated and monounsaturated fats such as oils, spreads, nut butters/pastes and avocado.
   - Low fat diets are not suitable for children under two years of age.

b. Limit intake of foods and drinks containing added salt.
   - Read labels to choose lower sodium options among similar foods.
   - Do not add salt to foods in cooking or at the table.

c. Limit intake of foods and drinks containing added sugars such as confectionery, sugar-sweetened soft drinks and cordials, fruit drinks, vitamin waters, and energy and sports drinks.

**GUIDELINE 4:**
Encourage, support and promote breastfeeding.

**GUIDELINE 5:**
Care for your food; prepare and store it safely.

Advice is also offered regarding the intake of ‘discretionary’ foods. These are foods that are not a necessary or essential part of a child’s dietary intake. These foods are high in kilojoules, saturated fat, sugars, salt or alcohol. Examples include cakes, biscuits, potato chips, processed meats and sausages, meat pies and other pastries and sugar-sweetened cordials, soft drinks and sports drinks.

It is also important to remember that children under the age of three years are at an increased risk of choking on hard foods. Adults should sit with young children whilst they eat and they should not be given food such as popcorn, nuts, hard confectionary or potato chips. Hard fruit and vegetables should be grated or cooked to make them easier for the child to consume and all bones should be carefully removed from meat and fish to prevent choking.

**FIGURE 9.53** It is important for children to eat sufficient nutritious food to grow and develop normally.

Source: National Health and Medical Research Council, ‘Healthy Eating for Children Poster’
9.20 Government, community and personal strategies and programs designed to promote the health and individual human development of children

Asthma Child and Adolescent Program
The Asthma Child and Adolescent Program (ACAP) is a nationally funded program by the Commonwealth Department of Health. This program provides school and preschool staff, parents and carers with access to free information regarding the management of asthma in an education setting. Through this program, free one hour asthma education sessions are made available to school and children’s services staff throughout Victoria. Free asthma management information sessions are also made available to school students, parents and carers (Asthma Foundation Victoria, www.asthma.org.au/Programs/AsthmaChildandAdolescentProgram.aspx).

National Immunisation Program
The Federal Government provides funding for the Immunise Australia Program which implements the National Immunisation Program. This program currently includes vaccines against 16 diseases. The Federal Government funding enables state and territory governments to obtain vaccines listed on the National Immunisation Program. Funds are also provided for Medicare Australia to implement the Australian Childhood Immunisation Register which keeps a record of the immunisation history of Australian children and adolescents.

State and territory government
State and territory governments create laws/legislation that assist in promoting the health and individual human development of children. Health promotion campaigns and programs are also developed and implemented by state and territory governments which play an important role in promoting the health and individual human development of children. In Victoria, examples include Child Protection Services, Family Services, and Maternal and Child Health Services.

Legislation
State and territory governments implement laws/legislation that aim to promote the health and individual human development of children. Examples of these include:
• Child protection: mandatory reporting legislation requires professionals such as doctors, nurses, police and school teachers to report suspected child abuse.
• Driving: laws relating to speed limits, speed cameras, seatbelts, probationary drivers, drink driving laws and car safety standards are designed to protect all people, including children. By law, the driver of a vehicle is responsible for ensuring that all passengers are restrained correctly. The road rules in Victoria require a child aged:
  – under 6 months of age must travel in a rearward facing child restraint
  – 6 months to under 4 years must travel in either a rearward facing or forward facing child restraint
  – 4 years to under 7 years must travel in a forward facing approved child restraint with an inbuilt harness or a booster seat
  – 7 years to under 16 years must travel in either a booster seat or an adult seatbelt (VicRoads).
• Smoking: laws prevent adults from smoking in motor vehicles with children under the age of 18 years. It is illegal to sell or supply cigarettes to children under the age of 18 years.
• Alcohol: it is illegal to sell alcohol to children under 18 years of age. It is also against the law to serve alcohol in a private home to a child under 18 years of age unless parents have given permission.
• Child employment: these laws outline the age at which children can be legally employed. Generally, children can work a limited number of hours from the age of 13 years. Children under 13 years of age can work in the entertainment industry; however, particular conditions apply, depending on the age of the child. There are specific limits to the number of hours a child can work and the work cannot be harmful to their health or safety, nor can it prevent the child from attending school (Business Victoria, www.business.vic.gov.au/operating-a-business/employing-and-managing-people/employing-children/child-employment-laws-and-requirements).

Victorian Child Protection Service

The Department of Human Services Victoria is a state government department that provides a range of services designed to promote the health and individual human development of children, families and young people. One of these services is the Victorian Child Protection Service, which assists in ensuring the safety of children. When adults caring for children do not provide the appropriate level of care or are abusive towards the children, the child protection system takes action. The main functions of the Victorian Child Protection Service are to:

• investigate matters where it is alleged that a child is at risk of harm
• refer children and families to services that assist in providing the ongoing safety and wellbeing of children
• take matters before the Children’s Court if the child’s safety cannot be ensured within the family
• supervise children on legal orders granted by the Children’s Court

Family Services

Family Services is another important area within the Department of Human Services Victoria that provides a range of services to assist families in caring for their children, thereby promoting health and individual human development.

Family Services provides family and early parenting support to assist families in developing an action plan in caring for the children. Early parenting services support parents from pregnancy until the child is four years old. Specialist support, counselling and advice services are available which may include education and skills development programs. Services offered by Family Services include:

• early parenting centres: provide experienced parenting support
• day stay services: provide an intensive day program to support parents in the early parenting phase
• residential services: provide a centre-based intensive parenting program where the parents stay at the centre for five days to build parenting skills
• home-based services: skilled staff visit the parent/s in the home and work one-on-one with them in parenting skills and education
• group services: incorporate group-based programs where the parent/s attends sessions with other parents and children. These are designed to improve relationships and interaction between the parents and the child.
Maternal and Child Health Service

The state and territory governments are also responsible for the provision of maternal and child health Services. In Victoria, these services are the responsibility of the Department of Education and Early Childhood Development and are often operated by local councils. The Maternal and Child Health Service supports families in the provision of parenting and the promotion of health and individual human development of children. It is through this service that families are provided with referrals to other professionals and are linked with other families in the local community. Parents have regular appointments from birth until the child reaches school age. All appointments are provided free of charge.

The Maternal and Child Health Service offers 10 key ages and stages consultations for the parents and their child, including an initial home visit and consultations at two, four and eight weeks; four, eight, 12 and 18 months; and two and 3.5 years of age. At each consultation, parents are able to discuss any concerns, discuss their parenting experiences and learn how to improve their child's health and individual human development.

When a baby is born, its parents receive a book called *My Health and Development Record* where a record can be kept of the child's health, growth, development and immunisation. The book allows parents and maternal and child health staff to keep details of the development of the child at each of the consultations.

Maternal and child health centres are located within local communities, enabling parents to have easy access to the service (Department of Education and Early Childhood Development).

Local government

Local governments implement a range of strategies and programs to promote the health and development of children including:

- providing access to recreation facilities such as walking and cycling paths, parks, gardens and public swimming pools
- implementing community health plans that aim to address the needs of the local community and promote healthy lifestyles by encouraging healthy eating, exercise and social interaction
- the implementation of immunisation programs within the local community as part of the National Immunisation Program (refer to table 9.14)
- ensuring that communities have access to facilities and services that provide UV protection
- the provision of long day care which is a centre-based form of child-care service. Long day care services provide all day or part-time care for children of working families and the general community. Local councils may run these services. Long day care services may also provide care for school children before and after school and during school holidays.
- maternal and child health services: locally based maternal and child health nurses provide parents with support, information and access to professional advice on a range of health-related concerns from child behaviour and nutrition to breastfeeding and family planning. The service is jointly funded by the Victorian government and local councils and is usually operated by local councils.
The provision of playgroups for infants, toddlers and preschoolers and their parents or caregivers. Adults stay with their children at playgroup, which gives them the chance to meet other people going through similar experiences while also learning about the community, health and support services available within the local community.

**TABLE 9.14** The implementation of the National Immunisation Program is the responsibility of local councils.

<table>
<thead>
<tr>
<th>Age/school year</th>
<th>Disease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birth</td>
<td>• Hepatitis B</td>
</tr>
<tr>
<td>2 months</td>
<td>• Diphtheria, tetanus, pertussis, hepatitis B, poliomyelitis,</td>
</tr>
<tr>
<td></td>
<td>Haemophilus influenzae type b</td>
</tr>
<tr>
<td></td>
<td>• Pneumococcal</td>
</tr>
<tr>
<td></td>
<td>• Rotavirus</td>
</tr>
<tr>
<td>4 months</td>
<td>• Diphtheria, tetanus, pertussis, hepatitis B, poliomyelitis,</td>
</tr>
<tr>
<td></td>
<td>Haemophilus influenzae type b</td>
</tr>
<tr>
<td></td>
<td>• Pneumococcal</td>
</tr>
<tr>
<td></td>
<td>• Rotavirus</td>
</tr>
<tr>
<td>6 months</td>
<td>• Diphtheria, tetanus, pertussis, hepatitis B, poliomyelitis,</td>
</tr>
<tr>
<td></td>
<td>Haemophilus influenzae type b</td>
</tr>
<tr>
<td></td>
<td>• Pneumococcal</td>
</tr>
<tr>
<td></td>
<td>• Rotavirus</td>
</tr>
<tr>
<td>12 months</td>
<td>• Measles, mumps, rubella, meningococcal C</td>
</tr>
<tr>
<td>18 months</td>
<td>• Measles, mumps, rubella, chickenpox</td>
</tr>
<tr>
<td>4 years</td>
<td>• Diphtheria, tetanus, pertussis, polio</td>
</tr>
<tr>
<td></td>
<td>• Measles, mumps, rubella</td>
</tr>
<tr>
<td>12–13 years or year 7</td>
<td>• Chickenpox</td>
</tr>
<tr>
<td>Secondary school</td>
<td>• Human papillomavirus</td>
</tr>
</tbody>
</table>

**TEST your knowledge**

1 Briefly explain two programs or strategies developed by each level of government to promote the health and individual human development of children in Australia.

**APPLY your knowledge**

2 (a) Outline the two sets of physical activity and sedentary behaviour guidelines that are specific to children.
   (b) What are the benefits of daily physical activity to children?
   (c) Why would recommendations also be made regarding the sedentary behaviour of children?

3 Discuss how each of the dietary guidelines could promote the health and individual human development of children.

4 (a) Outline the National Diabetes Services Scheme (NDSS).
   (b) Explain how the NDSS promotes the health and individual human development of children.

5 Select two types of legislation relevant to promoting the health and individual human development of children. Conduct research to answer the following:
   (a) Who is responsible for enforcing the legislation?
   (b) Explain how community members are made aware of the legislation.
   (c) How does the legislation aim to promote the health and individual human development of children?

6 Research your own local government and produce a fact file/brochure outlining the ways that they work to promote the health and individual human development of children.
KEY CONCEPT Understanding community and personal strategies and programs designed to promote the health and individual human development of children

Community strategies and programs

Many community strategies and programs designed to promote the health and individual human development of children are implemented by non-government organisations. Examples of these programs include the Diabetes Camps Victoria, Kidsafe and Asthma Friendly Schools.

Diabetes Camps Victoria

Diabetes Camps Victoria (DCV) is a partnership of Diabetes Australia — Victoria, Monash Health and the Royal Children’s Hospital. Each year, DCV runs seven camps for children aged four to 17 years with type 1 diabetes. The goal of the camps is for young people to learn how to manage their diabetes in an environment that is fun, safe and supportive while also promoting a culture of independence through adventure. The camps promote peer support and positive role modelling from other children and volunteers with diabetes through providing opportunities to meet other young people and adults with type 1 diabetes.

Health professionals and volunteers attend the camps to supervise, educate and provide information to the children in a relaxed setting. Children can increase their skills and awareness in managing their condition (www.diabetesvic.org.au/type-1-diabetes/about-camps/campers).

FIGURE 9.56 Diabetes Camps Victoria provide opportunities for children with type 1 diabetes to connect with others with the condition.
**Kidsafe**

Kidsafe was first established in 1979 as the Child Accident Prevention Foundation of Australia (CAPFA). In 1993, the name Kidsafe was adopted nationally. Kidsafe is a non-government, not-for-profit organisation that aims to prevent child deaths from unintentional injury and reduce the severity of injuries in children aged less than 15 years. Kidsafe’s mission is “To make a safer world for kids by leading the promotion of action to highlight and to minimise the unacceptable level of risk and consequence of injury to children in our adult-focused world” (Kidsafe, www.kidsafe.com.au/about.html).

Kidsafe takes responsibility for disseminating information regarding ways in which to promote the safety of children. Parents can download a range of information from the Kidsafe website such as ‘Safe sleeping for infants’, ‘A parent’s guide to Kidsafe homes’ and ‘A parent’s guide to Kidsafe roads’.

Kidsafe, along with Neuroscience Research Australia, developed the National Guidelines for the Safe Restraint of Children Travelling in Motor Vehicles which provide best practice recommendations for keeping children safe when travelling in motor vehicles.

**Asthma Friendly Schools Program**

The Asthma Friendly Schools Program was developed by the Asthma Foundation Victoria in 2001. The strategy aims to develop safe, healthy and inclusive school environments for students with asthma. Asthma Friendly Schools adopts the strategies designed to support the whole school community in understanding and managing asthma.

To be recognised as an Asthma Friendly School, a school must meet the following criteria:

1. The school has developed an asthma policy based on the recommendations and advice provided by the Department of Education and Early Childhood Development.
2. At least 75 per cent of school staff have completed a minimum one hour asthma training session provided by The Asthma Foundation of Victoria.
3. The school has a minimum of two asthma emergency kits that contain reliever medication, two spacers, a record sheet and instructions for use.
4. Asthma action plans for each student with asthma are kept in a central location and asthma first aid incidents are recorded, reviewed and reported to the student’s parents/carers.
5. Asthma first aid posters are displayed around the school and asthma information is included in the curriculum and is made available to parents.
6. Parents/carers are contacted when a student experiences asthma symptoms, uses their asthma medication or has an asthma incident at school.
7. Students are encouraged to have prompt and easy access to their asthma medication in order to self-manage their symptoms at school and on excursions.
8. Safe medication practices are implemented such as asthma medicine being clearly labelled and stored in a cool location that is easily accessible.
9. Measures are taken to minimise the impact of potential asthma triggers such as mowing outside of school hours, and ensuring that carpets, curtains and air-conditioning vents are cleaned regularly to minimise dust.

**Source:** Asthma Foundation Victoria, www.asthma.org.au/Portals/0/form/AFS%20Recognition%20Checklist%20(Feb2013)%20.pdf
Personal strategies

Many of the personal strategies that can promote the health and individual human development of children require both parents and children to be aware of the determinants that can have an impact. Examples of personal strategies for children in Australia include:

- **Physical activity:** regular exercise assists in maintaining healthy body weight, which can reduce the risk of obesity. This reduces the impact on joints, which can assist in the management of juvenile arthritis.
- **Food intake:** by consuming a healthy food intake, children receive the nutrients they need for maintaining a healthy immune system and promoting growth. For children with type 1 diabetes, a well-balanced diet assists with the management of their condition.
- **Accessing health care:** taking children for regular health checks ensures that their health can be monitored and any health concerns can be addressed early. Regular visits to the doctor are important for assisting children with managing conditions such as type 1 diabetes and juvenile arthritis.
- **Not smoking:** tobacco smoke is a trigger for asthma symptoms. By not smoking and ensuring exposure to environmental tobacco smoke is reduced, the risk of having an asthma attack is reduced.
- **Maintaining a safe housing environment:** eliminating hazards in the home by clearing walkways, having secure locks on cupboards, storing chemicals and cleaning products out of the reach of children, and having fencing around pools are examples of ways in which the risk of injury and death can be reduced for children.
- **Improving education:** by accessing information relating to conditions such as juvenile arthritis, type 1 diabetes and asthma, parents and carers of children may be better informed regarding ways to promote the health and individual human development of children.

**TEST your knowledge**

1. (a) Briefly explain the Diabetes Camps Victoria program.
   (b) Identify the determinant/s of health targeted by this program.

2. (a) Briefly explain the role of Kidsafe.
   (b) Identify the determinant/s of health targeted by Kidsafe.

**APPLY your knowledge**

3. Access the Kidsafe Battery Controlled weblink in your eBookPlus to answer this question. Explain how the Battery Controlled campaign aims to promote the health and individual human development of children.

4. Discuss how the Asthma Friendly Schools program could promote the health of children in Australia.

5. Discuss the personal strategies that could be employed to address one of the following conditions that may impact on children:
   (a) type 1 diabetes
   (b) juvenile arthritis
   (c) asthma
   (d) falls and injuries
   (e) food allergies.

6. Create a multimedia presentation that aims to educate parents, carers and children about personal strategies that can be used to promote the health and individual human development of children.
KEY SKILLS Health issues facing Australia’s children

KEY SKILL Describe a specific health issue facing Australia’s children and draw informed conclusions about personal, community and government strategies and programs to optimise child health and development

The first part of this key skill is to develop an understanding of one health issue facing Australia’s children. In order to be able to adequately describe the issue, a number of aspects about it should be known, including:
• the name of the issue
• what the issue actually is
• why it is considered a health issue for children
• the biological, behavioural, physical environment and social determinants that act as risk and/or protective factors for the selected issue.

A summary table can be useful in collating this information.

In the following example, falls and injuries as a health issue impacting on children is described:

Unintentional child injuries are a major public health issue in Australia. Most can be prevented. Preventable injuries are higher amongst children compared with other age groups (ABS 2007).

In 2005–06, 22,865 children 0–4 years of age were admitted to hospital for injury across Australia. This was second only to admissions to hospital for respiratory conditions. Hospital isolation rates were higher for boys than girls. Hospitalisation rates for falls and poisonings were higher for children living in rural and remote communities, compared to children living in metropolitan areas (1.5 times greater for falls and 1.9 times greater for poisoning) (AIHW 2008).

Biological — body proportion: due to the cephalocaudal principle of development, a child’s head is large in relation to their body. This contributes to a higher centre of gravity and can increase the risk of falls.

Behavioural — some activities have a greater risk of injury than others. For example, bike riding is a much riskier activity than going for a walk. The types of activities a child engages in will impact on their risk of injury.

Physical environment — the type of physical environment a child lives and plays in has a significant impact on their risk of falls and injuries. Checking a house for hazards will greatly reduce the risk of falls and injuries.

Social — the activities that a child’s friends engages in greatly influences the types of activities the child will be involved in. If a child’s peer group tends to engage in risk-taking behaviour that increases the risk of falls and injuries, then the child is more likely to also engage in this type of behaviour.

The second part of this key skill is the ability to draw informed conclusions about personal, community and government strategies and programs that are implemented to optimise child health and individual human development.

In order to be able to draw conclusions about the program or strategy, a number of aspects relating to it must be known, including:
• the name of the strategy or program
• whether the program is implemented at a government, community or individual level
• the aims of the program
• the aspects of health and/or individual human development being addressed
• the determinants of health and development that are the focus of the strategy or program
• the advantages and/or disadvantages of the strategy or program
• the actual or perceived effectiveness of the program.
In the following example, Kidsafe home safety information sessions are discussed and conclusions about the effectiveness of Kidsafe are drawn.

Kidsafe Victoria collaborates with other organisations to provide injury prevention programs, media campaigns and educational resources. One of the programs that Kidsafe offers is the home safety information session. These sessions are presented to a wide range of groups including early childhood centres, community organisations and parent groups. The sessions aim to provide attendees with information regarding injury prevention in the home and to encourage people to implement prevention strategies in community organisations and homes.

Sessions contain information on common child injury topics such as:
- burns and scalds
- drownings and near drowning
- falls
- cuts and jamming fingers
- poisonings
- choking and suffocation
- dog bites and pet safety
- road safety.

Through educating parents, the safety of children can be promoted and preventative strategies are more likely to be implemented to reduce child injuries and fatalities. Children who are healthy and not suffering from injury are able to participate fully in activities, including schooling and sporting activities. Engaging in sporting activities will increase a child's physical fitness while also enhancing motor skill development. It is through engaging with other children that social skills such as communication can be further developed. Being able to fully participate with friends will also have a positive impact on a child's self-esteem, thereby promoting mental health. A child with positive self-esteem is more likely to engage fully in school, which will promote the development of intellectual skills.

Since Kidsafe’s establishment in 1979, the number of children in Australia killed by unintentional injury has been halved. This has been achieved through a range of strategies including injury prevention programs, media campaigns and educational resources which have led to increased awareness of child safety issues and injury prevention throughout the community.

PRACTISE the key skills

1. Describe a key health issue facing children in Australia. In your answer, make sure you include:
   (a) the name of the health issue
   (b) what the health issue actually is
   (c) why it is considered a health issue for children (include relevant statistical information)
   (d) the biological, behavioural, physical environment and social determinants that act as risk and/or protective factors for the selected health issue.

2. Explain a program or strategy implemented by a government and explain how it may impact on the health and/or individual human development of children.

3. Identify personal strategies that may reduce the risk of one health issue facing children in Australia.

4. For a community strategy, discuss the likely effectiveness in promoting child health and/or individual human development.
Chapter summary

- A range of health issues affect children, including asthma, falls and injuries, food allergies, juvenile arthritis and type 1 diabetes. The biological, behavioural, physical environment and social determinants all play a role in these issues.
- Asthma is a common inflammatory condition of the airways resulting in wheezing, breathlessness and tightness of the chest.
- Asthma is one of the most common causes of hospital admissions and visits to medical centres for children. It is the most frequently reported long-term chronic condition, with approximately 10 per cent of Australian children aged 0–14 having asthma.
- Determinants that impact on asthma include:
  - biological: genetics, obesity, sex, respiratory infections
  - behavioural: dietary intake, physical activity, breastfeeding
  - physical environment: tobacco smoke in the home, air pollution, exposure to allergens
  - social: education, socioeconomic status.
- Falling is the most common cause of injury for children of all ages.
- Severe burns can result in the death of a child as their skin is thinner than the skin of an adult.
- Falls and injuries are a health issue for children as unintentional falls are the most common cause of injury hospitalisations for children aged 0–4, accounting for 42 per cent of the total for injury hospitalisations, followed by smoke, fire, heat and hot substances (8 per cent) and poisoning by drugs (6 per cent).
- In the 5–14 age group, falls were the most common cause of injury requiring hospitalisation (46 per cent), followed by transport accidents (16 per cent).
- Determinants that impact on falls and injuries in children include:
  - biological: body proportions, height, having thinner skin than adults, smaller body size
  - behavioural: physical activity, risk-taking behaviour
  - physical environment: playgrounds, home environment
  - social: lack of knowledge leading to risk-taking behaviour, natural inquisitiveness, peer pressure, lack of supervision.
- Food allergies are an adverse immune response to a food that has been consumed by an individual.
- A serious and potentially life threatening allergic reaction is known as anaphylaxis.
- Children can be allergic to a wide range of foods but the eight most common foods that cause allergic reactions are: milk, eggs, peanuts, soy, wheat, tree nuts (such as walnuts and cashews), fish and shellfish (such as prawns).
- Food allergies occur in approximately 1 in 20 children. Over the past decade, hospital admissions as a result of anaphylaxis have doubled in Australia.
- Food allergies and their management have been linked to a number of determinants, including:
  - biological: age, genetic predisposition, sex
  - behavioural: breastfeeding, early introduction of solid foods, accidental consumption of foods causing allergic responses
  - physical environment: availability of food causing allergic responses
  - social: education, family and access to health care.
- Juvenile arthritis is any form of auto-immune or inflammatory conditions that can occur in children under 16 years of age.
- Juvenile arthritis affects less than 1 per cent of children under the age of 16 in Australia.
• Research has found genetic factors that increase the susceptibility to juvenile arthritis; however, research into the impact of environmental factors has been less successful.

• Determinants that impact on juvenile arthritis include:
  – biological: genetics, age, sex
  – behavioural: regular physical activity, eating habits
  – physical environment: access to recreation facilities, housing environment
  – social: access to health care, parental education.

• Type 1 diabetes is an auto-immune condition where the immune system attacks the cells in the pancreas that are responsible for producing insulin.

• It is important to monitor the blood glucose levels of children with type 1 diabetes via a blood glucose monitor.

• There is no cure for type 1 diabetes so it is important that it is effectively managed by treatment, nutrition and exercise.

• Australia is ranked seventh in the world for prevalence of type 1 diabetes in children aged 0 to 14 years of age and sixth for incidence.

• The determinants that impact on type 1 diabetes include:
  – biological: genetic predisposition, age, viruses
  – behavioural: monitoring of blood glucose levels, eating habits, regularly taking insulin, physical activity
  – physical environment: access to recreational facilities
  – social: access to health care, parental education, parenting practices.

• Government, community and personal strategies and programs are designed to promote health and individual human development of children.

• Government strategies include:
  – state/territory: Diabetes Camps Victoria, Kidsafe and Asthma Friendly Schools
  – local: access to recreation facilities, community health plans, immunisation programs, long day care, facilities and services that provide UV protection, Maternal and Child Health Services, playgroups.

• Community strategies include Diabetes Camps Victoria, Kidsafe and Asthma Friendly Schools.

• Personal strategies relate to addressing determinants that are modifiable. These include: physical activity, food intake, accessing health care, not smoking, maintaining a safe house environment and improving education.

**TEST your knowledge**

1. Draw up a table that summarises the major contributors to burden of disease for children and the corresponding determinants that act as risk or protective factors, as well as at least one example of a government, community and personal strategy that is implemented to promote health.

**APPLY your knowledge**

2. Design a program or strategy that could be implemented to address a child health issue of your choice. Make sure you include:
   (a) the name of the program
   (b) who will implement it (government, community, individuals)
   (c) the aspects of children’s health and/or development that it is designed to address
   (d) which determinants of health it addresses
   (e) how it addresses the determinants of health.