



Australian Government  
Department of Health

**i M M U N I S E**  
A U S T R A L I A P R O G R A M

A joint Australian, State and  
Territory Government initiative

# Understanding childhood immunisation



i M M U N I S A T I O N

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Department of Health



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# Understanding childhood immunisation

Understanding Childhood Immunisation

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IMMUNISATION

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**Immunisation is a simple, safe and effective way of protecting children against certain diseases. The risks of these diseases are far greater than the very small risks of immunisation.**

**Immunisation is still the safest and most effective way to prevent disease worldwide. In fact, it's estimated that vaccination currently saves approximately three million lives each year.**

**Parents understandably want to do whatever they can to stop their child getting sick. This booklet will help you make an informed decision on immunisation based on the best available information.**

**If you have any questions about the information in this booklet, please discuss with your General Practitioner or immunisation provider.**



## Section 1

# What is immunisation?

Immunisation protects people against harmful infections before they come into contact with them in the community. Immunisation uses the body's natural defence mechanism — the immune response — to build resistance to specific infections and helps children (and adults) stay healthy by preventing serious infections. It copies the body's protective response to diseases, helping the immune system detect and destroy the infection when it is encountered in the future — before significant symptoms or complications can occur.

This booklet focuses on the vaccines for young children funded under the National Immunisation Program.

The routine childhood immunisations given through this program currently provide protection against 13 diseases:

- diphtheria;
- haemophilus influenzae type b (Hib);
- hepatitis B;
- measles;
- meningococcal C;
- mumps;
- whooping cough (pertussis);
- pneumococcal;
- polio (poliomyelitis);
- rotavirus;
- rubella (German measles);
- tetanus; and
- chickenpox (varicella).

## Section 1: What is immunisation?

Most of these diseases can cause serious complications and sometimes death. Most vaccines used in the program are given by injection; the rotavirus vaccine is given orally (by mouth).

It is also recommended that children at risk receive the seasonal influenza vaccination.

### Immunisation and vaccination — what's the difference?

Technically, 'vaccination' is the term used for giving a vaccine — that is, actually getting an injection or oral dose. 'Immunisation' is the term used for the process of both getting the vaccine and becoming immune to the disease as a result of the vaccine. Most people use the terms 'vaccination' and 'immunisation' interchangeably but their meanings are not exactly the same because immunity follows vaccination in most, but not all, cases. For the purposes of this booklet, we have always used the term 'immunisation' because this is the expression most commonly used in the community.

### Why should I have my child immunised?

There are two main reasons for immunising every child in Australia:

1. Immunisation is the safest and most effective way of giving protection against a disease. After immunisation, your child is far less likely to catch the disease if there are cases in the community. The benefit of protection against the disease far outweighs the very small risks of the side effects associated with immunisation.
2. If enough people in the community are immunised, the infection can no longer be spread from person to person and the disease might die out altogether. This is how smallpox was eliminated from the world, and how polio has disappeared from many countries. This is known as 'herd immunity'.

### Fact

All vaccines available in Australia have been thoroughly tested for safety and efficacy and receive ongoing monitoring and evaluation.



## Section 2

# Immunisation: The Basics

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### What is in vaccines?

Depending on their purpose and specific composition, vaccines can contain a very small dose of a live, but weakened virus, killed viruses, killed bacteria or small parts of bacteria, or a small dose of a modified toxin produced by bacteria. Vaccines may also contain either a small amount of preservative or a small amount of an antibiotic to preserve the vaccine. Some vaccines may also contain a small amount of an aluminum salt which helps produce a better immune response.

Some vaccines, such as influenza, may contain traces of egg protein and should be given with caution to people with a known egg allergy.

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### What are the side effects of immunisation?

Common side effects of immunisation are redness and soreness where the child has been injected, and mild fever. While these symptoms may concern you and upset your child at the time, the benefit of immunisation is protection from the disease. More serious reactions to immunisation are very rare. You may consider using pain relief to help ease the fever and soreness. Other side

effects are very rare but if they do occur, consult a doctor immediately. Side effects of specific vaccines are described in Section 3 - The vaccines and the diseases they prevent (page 9).

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### How long do immunisations take to work?

In general, the normal immune response takes approximately two weeks. This means protection from an infection will not occur immediately after the vaccine is received.

Most immunisations need to be given more than once to build long lasting protection. For example, a child who has been given only one or two doses of diphtheria-tetanus-acellular pertussis vaccine (DTPa) is only partially protected against diphtheria, tetanus and pertussis (whooping cough), and may still become sick if exposed to these diseases. However, some vaccines provide long lasting immunity after only one dose.



## Section 2: Immunisation: The Basics

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### How long do immunisations last?

The protective effect of immunisation is not always life-long. Some, like tetanus vaccine, can last up to 30 years, after which time a booster dose may be given. Some, such as whooping cough, give protection for about five years after a full course.

Seasonal influenza vaccinations need to be given every year.

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### Is everyone protected from disease by immunisation?

Even when all the doses of a vaccine have been given, not everyone is protected against the disease. For example, measles, mumps, rubella, tetanus, polio and hib vaccines protect more than 95 per cent of children who have completed the course.

Three doses of whooping cough (pertussis) vaccine protects about 85 per cent of children who have been immunised, and will reduce the severity of the disease in the other 15 per cent, if they do catch whooping cough.

Booster doses are needed because immunity decreases over time. However, the more people vaccinated against a particular disease the less likely it is that the disease can be transmitted in the community.

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### Are all immunisations free?

Vaccines that are routinely recommended for your child under the National Immunisation Program are funded by the Australian Government and are provided free of charge if your child is eligible for Medicare. Your doctor may charge you for a consultation fee. These vaccines protect against a number of diseases including:

- hepatitis B;
- diphtheria, tetanus and whooping cough;
- haemophilus influenzae type b;
- meningococcal C;
- polio;
- pneumococcal;
- rotavirus; and
- measles, mumps, rubella and chickenpox (varicella).

Some additional vaccines are also provided free of charge for:

- Children with specific medical conditions (see page 16) ; and
- Aboriginal and Torres Strait Islander children in the Northern Territory, Western Australia, South Australia and Queensland. See Section 4, page 15, for more details.

It is important that your child receives all vaccines when they are due to ensure they have the best protection possible. In addition, some vaccines such as rotavirus can only be given within specific age limits.

There are some differences in the way government-funded immunisation programs are administered in each state and territory. Speak to your General Practitioner or immunisation provider about what your child can receive under these programs. Alternatively, contact your state or territory health department. Contact numbers can be found at the end of this booklet.

There are other vaccines available that are not funded by the National Immunisation Program. These are usually recommended in special circumstances, such as international travel or for people engaged in certain occupations. If you choose to immunise your child with a vaccine that is not funded by the Program, you should speak to your local GP or immunisation provider for further information.

**If you are unsure which vaccines are free, refer to the National Immunisation Program Schedule available at [immunise.health.gov.au](http://immunise.health.gov.au), check with your doctor, immunisation clinic, or telephone the Immunise Australia Information Line on 1800 671 811.**

## Section 3

# The vaccines and the diseases they prevent

Vaccines are listed by the age of the child at which they are first administered. Most post-vaccine discomfort or side effects can be readily managed with pain relief.

### At birth

#### Hepatitis B

**Disease: Hepatitis B**

Contagious virus spread mainly by blood, sexual contact or from mother to newborn baby. Causes acute hepatitis or chronic carriage.

**Effects of the disease:**

About one in four chronic carriers will develop cirrhosis or liver cancer.

**How to immunise and when:**

Several doses of hepatitis B vaccine are required to provide full protection against the disease. For babies, the first dose is given soon after birth, the second is due at 2 months of age (but can be given as early as 6 weeks of age), the third at 4 months of age and the final at 6 months of age. The last three doses are combined with other vaccines, such as DTPa (diphtheria-tetanus-acellular pertussis).

**Side effects of immunisation:**

About one in 15 has pain at the site of injection and one in 100 people experiences fever. Anaphylaxis (a sudden and severe allergic reaction which results in a serious fall in blood pressure) occurs in about one in 600,000.

For more information on hepatitis B immunisation visit the Immunise Australia website [immunise.health.gov.au](http://immunise.health.gov.au)

### Starting at 2 months

#### Diphtheria, tetanus and whooping cough (pertussis)

**Disease: Diphtheria**

Contagious bacteria spread by droplets; causes severe breathing difficulties.

**Effects of the disease:**

About one in 15 patients dies. The bacterium releases a toxin, which can produce nerve paralysis and heart failure.

No vaccinated person has died from diphtheria in Australia in the last 20 years.

## Section 3: The vaccines and the diseases they prevent

### Disease: Tetanus

Caused by toxin of bacteria from soil. Causes painful muscle spasms, convulsions and lockjaw.

#### Effects of the disease:

About three in 100 patients die. The risk is greatest for the very young or old.

### Disease: Whooping cough

Contagious bacteria spread by droplets. Causes uncontrolled coughing and vomiting lasting up to three months.

#### Effects of the disease:

About one in 200 whooping cough patients under the age of 6 months dies from pneumonia or brain damage.

#### How to immunise and when:

Immunisation with a DTPa-containing (diphtheria, tetanus and whooping cough) vaccine is the best way to prevent diphtheria, tetanus and whooping cough. DTPa-containing vaccine is given at 2, 4 and 6 months of age (but can be given from 6 weeks) with a booster dose at four years of age, that can be given from 3 years 6 months of age.

As the protective effect of the childhood vaccine can wear off, a booster dose of diphtheria-tetanus-acellular pertussis vaccine is also given to teenagers.

#### Side effects of immunisation:

About one in 10 has local inflammation at the site of injection or fever. Serious adverse events are very rare.

For more information on diphtheria, tetanus and whooping cough (pertussis) and DTPa immunisation visit the Immunise Australia website [immunise.health.gov.au](http://immunise.health.gov.au)

### Haemophilus influenzae type b

#### Disease: Haemophilus influenzae type b (Hib)

Contagious bacteria spread by droplets; causes meningitis, epiglottitis (respiratory obstruction), septicaemia, osteomyelitis (infection of the bones).

#### Effects of the disease:

About one in 20 meningitis patients dies and one in four survivors has permanent brain or nerve damage. About one in 100 epiglottitis patients die.

#### How to immunise and when:

Several doses of Hib vaccine are required to protect a child against Hib disease. Doses are given at 2, 4, 6 and 12 months of age. The early doses are given in a combination vaccine with DTPa, polio and hep B.

#### Side effects of immunisation:

About one in 20 has discomfort or local inflammation. About one in 50 has a fever.

For more information on Haemophilus influenzae type b (Hib) visit the Immunise Australia website [immunise.health.gov.au](http://immunise.health.gov.au)

### Poliomyelitis (Polio)

#### Disease: Poliomyelitis (Polio)

Contagious virus spread by faeces and saliva; causes fever, headache, vomiting and may progress to paralysis.

#### Effects of the disease:

About one in 20 hospitalised patients dies and one in two patients who survive is permanently paralysed.

#### How to immunise and when:

In the past, oral poliovaccine (OPV) was used routinely in the immunisation schedule. Since 2005, OPV has been replaced by inactivated poliomyelitis vaccine (IPV) which is given by injection. Three doses are required at 2, 4 and 6 months of age. The two month vaccine can be given from 6 weeks of age.

## Section 3: The vaccines and the diseases they prevent

IPV is given as part of a combined vaccine with DTPa, hep B and Hib (for babies). IPV is combined with DTPa and due at 4 years of age but can be given from 3 years 6 months.

### Side effects of immunisation:

About one in three experiences local redness; one in seven has pain; one in 10 has fever, decreased appetite and may cry excessively.

For more information on polio immunisation visit the Immunise Australia website [immunise.health.gov.au](http://immunise.health.gov.au)

## Pneumococcal

### Disease: Pneumococcal

Bacteria spread by droplets; causes fever, pneumonia, septicaemia and meningitis.

### Effects of the disease:

About one in 10 meningitis patients dies.

### How to immunise and when:

There are two types of pneumococcal vaccine – the conjugate vaccine and the polysaccharide vaccine. The conjugate vaccine works well in babies and young children and covers the 13 types of pneumococcal bacteria that most commonly cause disease in children. The polysaccharide vaccine covers 23 different types of pneumococcal bacteria but it does not work well in young children. It is mainly used for vaccination of adults and is also given as a booster vaccination after a course of conjugate vaccine for older children with specific medical conditions who require additional protection.

The type of vaccine and the number of doses required to provide adequate protection varies depending on the age of the child when the course of pneumococcal vaccination is started and whether the child has a medical condition that puts them at a higher risk. For babies, the first dose of pneumococcal conjugate vaccine is recommended at 2 months of age but can be given from 6 weeks of age, with subsequent doses at 4 and 6 months of age. Aboriginal and Torres Strait Islander children and children with specific medical conditions may need further doses.

It is recommended that the pneumococcal vaccine be given at the same time as other scheduled vaccines (see Can more than one immunisation be given at the same time? Section 6, page 18).

Aboriginal and Torres Strait Islander children living in Queensland, the Northern Territory, Western Australia and South Australia are eligible for an additional booster at 12-18 months of age. Children with certain medical conditions are also considered to be at high risk and may need a booster, usually around age 4-5. You should discuss this with your immunisation provider if you think your child is in a specific high risk group.

Medical conditions that predispose children to high incidence or high severity of pneumococcal infection are:

- congenital immune deficiency;
- poor functioning spleen due to conditions such as sickle cell anemia or surgical removal of the spleen;
- HIV infection, before and after development of AIDS;
- kidney failure, or relapsing or persistent nephrotic syndrome;
- Down syndrome;
- heart disease associated with cyanosis or cardiac failure;
- cystic fibrosis;
- insulin-dependent diabetes mellitus;
- cerebrospinal fluid leak;
- intracranial shunts and cochlear implants;
- immunosuppressive therapy (such as cancer treatment or large doses of steroids);
- all premature infants with chronic lung disease; and
- all infants born at less than 28 weeks gestation.

### Side effects of immunisation:

Polysaccharide vaccine: one in two has pain or local reaction at the site of injection. Conjugate vaccine: About one in 10 has a local reaction at the site of injection or fever.

For more information on pneumococcal immunisation visit the Immunise Australia website [immunise.health.gov.au](http://immunise.health.gov.au)

## Section 3: The vaccines and the diseases they prevent

### Rotavirus

#### Disease: Rotavirus

Contagious virus spread by faeces and saliva; causes severe gastroenteritis and fever.

#### Effects of the disease:

About eight in 100 are taken to an emergency department; four in 100 are hospitalised.

#### How to immunise and when:

Rotavirus vaccine is the best way to protect children against rotavirus disease. The vaccine will not prevent diarrhoea and vomiting caused by other infectious agents.

Rotavirus vaccine is given in two or three doses, depending on the vaccine brand used. The vaccine is given orally, at the same time as other vaccines at 2, 4 and 6\* months of age.

\*depending on the brand used.

There is an upper age limit for the administration of rotavirus vaccine.

It is very important to give each dose on time, as late doses cannot be given. The safety of the vaccine has not been tested in older babies or children. It is important, therefore, to ensure that your child receives this vaccine as close to the recommended age as possible.

#### Side effects of immunisation:

Up to three in 100 develop diarrhoea or vomiting. There is a slightly increased risk of intussusception, a rare form of bowel blockage, associated with the rotavirus vaccine. However, the risks of rotavirus are many times greater than the very small risk of immunisation.

For more information on rotavirus and rotavirus immunisation visit the Immunise Australia website [immunise.health.gov.au](http://immunise.health.gov.au)

### Starting at 12 months

#### Meningococcal disease

#### Disease: Meningococcal C

Bacteria spread by respiratory droplets; causes sepsis (infection of the blood stream) and meningitis (infection of the tissues surrounding the brain).

#### Effects of the disease:

About one in 10 patients dies. Of those that survive, one in 30 has severe skin scarring or loss of limbs, and one in 30 has severe brain damage.

#### How to immunise and when:

The combination meningococcal C and *haemophilus influenzae* type b vaccine is given at 12 months of age. This vaccine can be given at the same time as other vaccines that are due at 12 months of age.

#### Side effects of immunisation:

About one in 10 has local inflammation at the site of injection, fever, irritability, temporary loss of appetite or headaches.

For more information on Meningococcal disease (Hib-MenC) visit the Immunise Australia website [immunise.health.gov.au](http://immunise.health.gov.au)

## Section 3: The vaccines and the diseases they prevent

### Measles, mumps and rubella

#### Disease: Measles

Highly infectious virus spread by droplets; causes fever, cough and rash.

#### Effects of the disease:

One in 15 children with measles develops pneumonia and one in 1,000 develops encephalitis (brain inflammation).

For every 10 children who develop encephalitis, one dies and up to four have permanent brain damage. About one in 100,000 develops brain degeneration, which is always fatal.

#### Disease: Mumps

Contagious virus spread by saliva; causes swollen neck glands, fever.

#### Effects of the disease:

One in 200 children develops encephalitis (brain inflammation). One in five males past puberty develops inflammation of the testicles. Occasionally mumps causes infertility or deafness.

#### Disease: Rubella

Contagious virus spread by droplets; causes rash, fever and swollen glands and may cause severe malformations to babies of infected pregnant women.

#### Effects of the disease:

About five in 10 patients develop a rash and painful swollen glands; five in 10 adolescents and adults have painful joints; one in 3,000 develops thrombocytopenia (bruising or bleeding); one in 6,000 develops inflammation of the brain; nine in 10 babies infected during the first 10 weeks after conception will have a major congenital abnormality (such as deafness, blindness, brain damage or heart defects).

#### How to immunise and when:

The combination measles, mumps and rubella (MMR) vaccine provides protection against all three diseases and is given at 12 months of age.

#### Side effects of immunisation:

Reactions to MMR immunisation are much less frequent than the complications of natural measles. The most common reaction is feeling unwell and having a low grade fever, possibly with a rash, occurring 7-10 days after immunisation and lasting approximately two to three days.

More serious reactions are rare. Thrombocytopenia (bleeding or bruising) is very rarely associated with the measles, mumps, rubella vaccine, occurring in three to five per 100 000 doses of vaccine administered.

For more information on measles, mumps and rubella immunisation visit the Immunise Australia website [immunise.health.gov.au](http://immunise.health.gov.au)

## Starting at 18 months

### Varicella (chickenpox)

#### Disease: Varicella (chickenpox)

Caused by highly contagious virus; causes low grade fever and vesicular rash

#### Effects of the disease:

One in 100,000 patients develops encephalitis (brain inflammation). About three in 100,000 patients die. Infection during pregnancy can result in congenital malformations in the baby. Onset of chickenpox infection in the mother in the period five days before to two days after delivery results in severe infection in the newborn baby in up to one-third of cases.

#### How to immunise and when:

The combination measles, mumps, rubella and varicella (MMRV) vaccine is given at 18 months of age. This vaccine replaced the second dose of measles, mumps, rubella (MMR) vaccine previously given at 4 years of age and the varicella vaccine at 18 months of age.

## Section 3: The vaccines and the diseases they prevent

### Side effects of immunisation:

One in 100 recipients may develop swelling of the salivary glands. One in three million recipients develops mild encephalitis (inflammation of the brain).

The vaccine should not be given to children with severe immune deficiency diseases, including HIV/AIDS, or to any child taking high doses of immune suppressing medication. The vaccine should not be given to pregnant women, but it is safe to vaccinate children who are in contact with pregnant women.

Febrile convulsions are a relatively common response to fever of any cause in young children. Febrile convulsions are rare following immunisation. In young children, having a MMR vaccine slightly increases the risk of a febrile convulsion occurring in the seven to 12 days following the first vaccine dose.

To reduce fever after vaccination you can use pain and fever relief medicines, such as paracetamol, but only as directed. These medications will make your child feel better from the fever and provide regular pain relief but do not prevent febrile convulsions from occurring.

For more information on varicella (chicken pox) immunisation visit the Immunise Australia website [immunise.health.gov.au](http://immunise.health.gov.au)

### In early childhood

#### What about the flu shot?

Free influenza vaccine is available for all Australians aged 6 months of age and over with medical conditions that can lead to severe influenza including:

- cardiac disease;
- chronic respiratory conditions (such as asthma);
- chronic neurological conditions;
- immuno-compromising conditions (such as HIV or cancer);
- diabetes and other metabolic disorders;

- renal disease;
- haematological disorders; and
- long-term aspirin therapy in children aged 6 months to 10 years.

### Disease: Influenza

Contagious virus spread by respiratory droplets, causes tiredness, high fever, chills, headache, cough, sneezing, running nose, poor appetite and muscle aches.

#### Effects of the disease:

Influenza (in medically at-risk children); 10-20 in every 100 could become sick with high fever, muscle aches and tiredness, one in 200 could be hospitalised.

#### How to immunise and when:

The influenza vaccine is made of small parts of three strains of the influenza virus and, depending on the brand, may contain traces of egg protein, formaldehyde and antibiotics (neomycin, polymixin or gentamicin).

Children aged 9 years and under require two doses, at least four weeks apart, in the first year they receive the vaccine. One dose of influenza vaccine is required for subsequent years and for children aged 10 years and over.

Children with severe egg allergy should not receive the vaccine. Talk to your doctor or immunisation provider about options available to you.

#### Side effects of immunisation:

One in 10 may have a fever.

For more information on influenza immunisation visit the Immunise Australia website [immunise.health.gov.au](http://immunise.health.gov.au)

### Fact

The risks from childhood disease are much higher than the risks of immunisation.



## Section 4

# Special immunisation requirements for Aboriginal and Torres Strait Islander children

Aboriginal and Torres Strait Islander children living in Queensland, the Northern Territory, Western Australia and South Australia should receive all the routine vaccines given to other children with the following additions:

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### **Pneumococcal vaccination**

An additional booster dose of pneumococcal vaccine is required between 12 and 18 months. This is required because Aboriginal and Torres Strait Islander children living in these areas continue to be at risk of pneumococcal disease for a longer period than other children.

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### **Hepatitis A**

This vaccination is given because hepatitis A is more common among Aboriginal and Torres Strait Islander children living in Queensland, the Northern Territory, Western Australia and South Australia than it is among other children. Two doses of vaccine are given 6 months apart starting over the age of 12 months.

The age at which hepatitis A and pneumococcal vaccines are given varies among the four states and territories.

Each of these vaccines is available free to your child if he or she is an Aboriginal or Torres Strait Islander living in one of these areas. For further information, contact your usual immunisation provider or your state or territory health department using the numbers included in the contacts section of this booklet.

## Section 5

# Common questions for children who are medically at risk

### **What if my child has allergies or has asthma? What precautions are required for highly allergic or egg sensitive children?**

Some vaccines, such as influenza, may contain traces of egg protein and should be given with caution to people with a known egg allergy.

If your child has allergies or asthma speak to your GP or immunisation provider.

### **What if my child has had a fit or has epilepsy?**

These children should still be immunised if their condition is stable. Some children have convulsions (fits) when they have a high temperature. These children should be given pain relief before and for 48 hours after immunisation to reduce the chance of fever. It is important to follow directions on the pain relief packaging (see page 22 for more detail).

Remember, the fever following MMR and MMRV vaccine occurs 7-12 days after the immunisation. There is a slight increased risk of febrile convulsions following MMRV immunisation. A family history of fits or epilepsy is not a reason to avoid immunisation.

### **What if my child has a chronic disease?**

In general, children with chronic diseases should be immunised as a matter of priority because they are often more at risk of complications from the diseases. Care is needed, however, in situations where the child's illness, or treatment, may result in lower immunity.

### **Fact**

Immunisation is still the safest and most effective way to prevent the spread of disease worldwide.



## Section 6

# Common questions on getting immunised

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### Where can my child get immunised?

Immunisations can be provided at immunisation clinics, general practices, some hospitals, local councils and Aboriginal Community Controlled Health Services.

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### Are immunisations compulsory?

Immunisation is not compulsory in Australia but is highly recommended for all children. Some states and territories require a record of a child's immunisation status to be presented when the child attends day care or starts school. This is so the day care centre or school knows which children are not immunised if there is an outbreak. Children who are not immunised may be asked to stay home to prevent them catching and spreading the disease.

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### Does my child have to start the schedule again if they miss a vaccination?

To get full protection, a child needs to have all the recommended vaccine doses, preferably on time. For most vaccines, if you have fallen behind it is easy to catch up. There is no need to repeat the doses already received and there is no need to get extra doses. The vaccine schedule can safely and effectively be continued as if there had been no delay. The usual intervals between the vaccine doses are maintained or may be reduced, if needed, depending on the age of the child.

Funded vaccines are usually for specified age groups, for example rotavirus cannot be given beyond an upper age limit. A significant delay could mean that your child will not be eligible for free vaccine. To protect your child and avoid unnecessary costs, it is best to immunise your child on time. Any catch up programs should be administered in consultation with your immunisation provider.



## Section 6: Common questions on getting immunised

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### Can more than one immunisation be given at the same time?

Yes. The vaccines recommended for routine use in babies and children can safely be administered at a single visit. The introduction of combination vaccines has enabled children to be immunised against more diseases with fewer injections.

For example, Infanrix Hexa and a pneumococcal vaccine are given at 2, 4 and 6 months of age. The Infanrix Hexa vaccine provides protection against six diseases, which means your baby is protected against seven diseases by having two injections with one visit. This is completely safe and will not overload the immune system (see Can immunisations overload the immune system? page 20). If you have any concerns, you should discuss them with your doctor or immunisation clinic.

There is a need to wait four weeks between giving live vaccines if they are not given on the same day.

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### What if my baby was born premature?

Premature babies especially need the protection of immunisation because they are more prone to certain infections. In general, babies born prematurely receive the same immunisations as other babies. However, very low birth weight babies may have a lower response to hepatitis B and may need an extra dose of the vaccine. The baby may need to have their antibody response checked after immunisation, or an extra dose of the hepatitis B vaccine. Also, premature babies born at less than 28 weeks gestation require an extra dose of pneumococcal vaccine at 12 months of age. The immunisation requirements of a very low birth weight baby should be discussed with your doctor.

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### If my child has a cough or cold, should immunisations be delayed?

Babies with minor coughs and colds without fever, or those receiving antibiotics in the recovery phase of an acute illness, can be immunised safely and effectively. Immunisation should only be postponed if a child is very unwell with a high fever (over 38.5 degrees Celsius).

Immunisation should be arranged for when the baby is well again (a week or two later). If in any doubt, ask your doctor or health clinic staff before delaying immunisation.

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### Should children be immunised while their mother is pregnant?

There is no problem with giving routine immunisations to a child whose mother is pregnant.

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### What if someone else in the family has had a reaction to an immunisation?

Immunisations should not be missed if another family member has had any reaction to a vaccine as these reactions are not hereditary.

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### What if my child has a reaction after receiving a vaccination?

Reporting adverse events following immunisation is important as it provides a better understanding of the safety issues around vaccines.

Parents and guardians can report adverse events following immunisation to the Therapeutic Goods Administration (TGA) or to their relevant state/territory health department. For information on how to report an adverse event following immunisation contact the Immunise Australia Program Infoline on 1800 671 811 or via the TGA website at [tga.gov.au/safety/index.htm](http://tga.gov.au/safety/index.htm)

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### What if my child is due to have an operation?

Immunisations should not be postponed if a child is due to have an operation.

## Section 6: Common questions on getting immunised

### Are there any reasons for delaying immunisation?

There are very few medical reasons for delaying immunisation. If a child is sick with a high temperature (over 38.5 degrees Celsius), immunisation should be postponed until the child is recovering. A child who has a runny nose, but is not ill, can be immunised, as can a child who is on antibiotics and obviously recovering from an illness. Children who have had a serious allergic reaction, with breathing difficulty, to a previous dose of vaccine should not be given the same vaccine again, but this needs to be discussed with your doctor. In some instances, children with cancer, an immune deficiency disorder or who are on medications which may interfere with their ability to fight infection, should not be immunised with vaccines that contain live viruses such as MMR and chickenpox vaccines. Immunisation for these children should be discussed with your doctor. Children who have had a blood transfusion or immunoglobulin should not have their MMR or chickenpox vaccine until up to six months after the transfusion. If you are in doubt about whether your child is fit for immunisation, discuss the circumstances with your doctor or nurse before postponing immunisation.

### Where should immunisations be recorded?

Every time a child is immunised, the information should be recorded in the Personal Health Record given to parents in the hospital or birth centre after a baby is born. It is important to keep these records as a reminder of when immunisations are due and to assist in checking which children in the family are immunised if there is an outbreak of disease. You may also need to show these records when your child starts school. The Personal Health Record and clinic records are completed by the doctor, nurse or health worker giving the immunisation.

### How else can I keep track of my child's immunisations?

The Australian Childhood Immunisation Register (ACIR or Immunisation Register) records information about immunisations given to Australian children.

Children under 7 years of age enrolled in Medicare are automatically included on the Immunisation Register. If your child is not enrolled in Medicare, they can be added when your doctor or immunisation provider sends the details of their immunisation to the Immunisation Register.

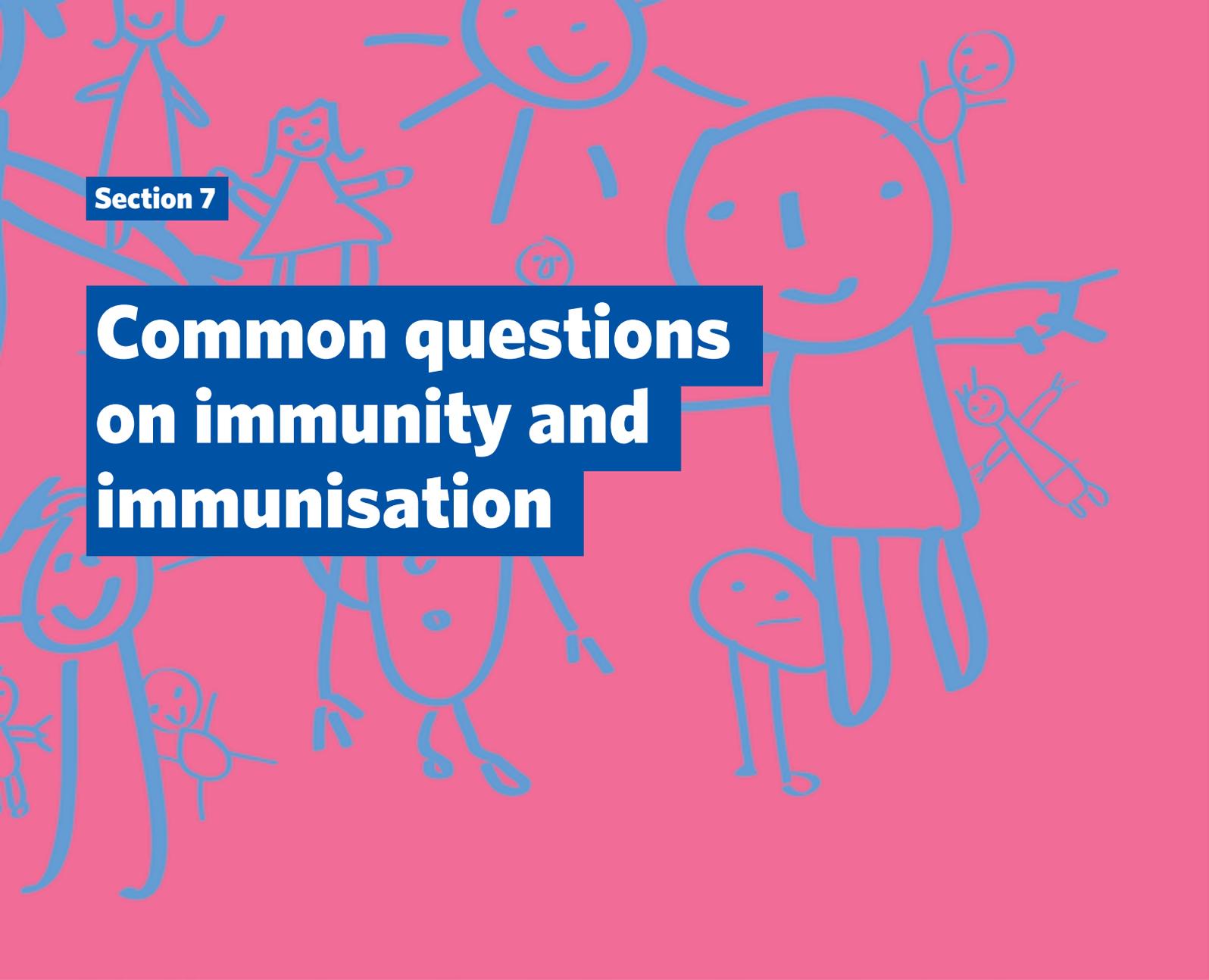
A statement of your child's immunisation history is made available when your child turns 18 months and between 4 and 5 years of age. This provides a simple way of keeping track of your child's immunisation history. The statement may also be used to prove your child's immunisation status for certain family assistance payments and as proof of immunisation for childcare and school enrolments.

You can request a statement at any time by visiting Medicare Online Services at the Immunisation Register website ([humanservices.gov.au](http://humanservices.gov.au)), your local Department of Human Services Service Centre or by calling the register on 1800 653 809 (free call).

Your doctor or immunisation provider can also get information about your child's vaccinations. This may be useful if your child has not been to that doctor or immunisation provider before, as the information will inform them which vaccinations are due.

### Fact

Children are exposed to many foreign particles daily through activities such as eating, drinking and playing. Vaccines only contain a small number of these, in comparison to what children encounter in their everyday environment.



## Section 7

# Common questions on immunity and immunisation

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### **Are immunisations necessary in these days of good hospital care, good hygiene and clean water supplies?**

Yes. Many diseases prevented by immunisation are spread directly from person to person, so good food, water and hygiene do not stop infection. Despite excellent hospital care, significant illness and death still occur from diseases which can be prevented by immunisation. For example, since Hib vaccines were first available in Australia in 1993, cases of Hib disease in children under 5 years have declined dramatically, with no change in living standards. There were 502 Hib cases reported in 1992 before Hib immunisation with approximately 15 cases per year currently reported in Australia.

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### **Can immunisations overload the immune system?**

No. Children and adults come into contact with many antigens (substances that provoke a reaction from the immune system) each day, and the immune system responds to each of the antigens in various ways to protect the body. Without a vaccine, a child can only become immune to a disease by being exposed to infection, with the risk of severe illness. Immunisations provide protection (immunity) to diseases in the same way as the natural immunity that occurs when a person catches the disease. However, while the risks associated with the diseases are high, the risks associated with vaccination are low.

## Section 7: Common questions on immunity and immunisation

### Homeopathy and vaccination

The safety and efficacy of homeopathic preparations in preventing childhood diseases such as whooping cough and measles is unknown.

Homeopathic preparations consist of a number of different oral preparations which claim to reduce the incidence or severity of the above childhood diseases, however there is no evidence to support these claims.

Both the British Homeopathic Association and the Australian Register of Homeopaths recommend that people should receive conventional immunisation and that homeopathic preparations “should not be recommended as a substitute for [conventional] immunisation”.

### Do some children get the disease despite being immunised?

Yes, it is possible, since no vaccine is 100 per cent effective. A small proportion of those who are immunised will remain susceptible to the disease. However, in the cases in which illness does occur in immunised children, it is usually much less severe than in those who were not immunised. The protection levels provided by vaccines differ. For example, if 100 children are vaccinated with two MMR-containing vaccines, 5 of these children might still catch measles, mumps or rubella (although the disease will often be milder in immunised children). However, if you do not immunise 100 children with MMR vaccine, and the children are exposed to measles, most of them will catch the disease with a high risk of complications like lung infection (pneumonia) or inflammation of the brain (encephalitis).

### Should breastfed children still get immunisations?

Breastfed children should be immunised with vaccines that are currently provided free under the National Immunisation Program. Breast milk contains small amounts of antibodies, but breastfed babies need vaccines because breast milk does not provide permanent protection.

### Do vaccines cause cancer, chronic fatigue syndrome, multiple sclerosis, allergies, or auto-immune disease?

No. After millions of vaccinations over many decades, there is no evidence to suggest that immunisations cause such diseases and conditions. In fact, hepatitis B immunisation greatly reduces the risk of cancer of the liver.

### Does MMR vaccine cause inflammatory bowel disease or autism?

There is no validated scientific evidence to support the suggestion that MMR vaccine causes inflammatory bowel disease or autism.

### Fact

Over 90% of children are vaccinated in Australia.

The background of the top half of the page is a solid blue color. Overlaid on this are several white, hand-drawn style illustrations. At the top center is a large sun with a smiling face and radiating lines. To the right is a girl with long hair, wearing a dress and boots, holding a smaller child. In the center and left are various other children of different shapes and sizes, some holding hands, some with their arms raised. The overall theme is a happy, diverse group of children.

## Section 8

# Pain relief for children to reduce side effects

**Speak with your doctor, pharmacist or nurse regarding the use of pain relief if you are concerned about side effects like fever and your child being unsettled.**

In certain circumstances, it may be advisable to give pain relief; if a fever occurs you can give pain relief as directed. When MMR or MMRV is given a fever may occur about 7-10 days later, and pain relief may be given to lower the fever. Children who have had a fit in the past or have epilepsy should be given pain relief before and for 48 hours after immunisation to reduce

the chance of fever. Make sure you refer to the product information and follow the directions on the packaging. Pain relief for children comes in different strengths and you should check the strength on the label.

**Please note, the prolonged use of pain relief without medical supervision could be harmful.**

### Fact

**Immunisation protects against harmful infections before your child comes into contact with them.**

The background of the top half of the page is a vibrant red color. It is decorated with numerous yellow line-art drawings of children and suns. The children are depicted in various poses, some with their arms raised, and the suns have simple faces with rays. The overall style is playful and child-friendly.

## Section 9

# Immunisation and your eligibility for some Government benefits

To help increase Australia's immunisation rates, a number of government family assistance payments require children to meet the immunisation requirements by being up to date with immunisation or having an exemption.

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### **Strengthening immunisation for children**

To be eligible to receive the Family Tax Benefit Part A Supplement, your family needs to meet income and residency tests, and your child needs to be fully immunised during the financial years that a child turns 1, 2 and 5 years old. The three age checkpoints make sure that important early vaccinations are received at the medically recommended times to ensure your child is fully immunised before they start school.

Child Care Benefit helps with child care costs such as Long Day Care, Family Day Care or Occasional Care and Outside School Hour Care (including Vacation Care) and In Home Care.

## Section 9: Immunisation and your eligibility for some Government benefits

Child Care Rebate covers 50 per cent of out-of-pocket child care expenses, up to the annual cap. For the 2013-2014 income year, the annual cap is \$7,500 per child per year. Out-of-pocket expenses are total child care fees less your Child Care Benefit and Jobs, Education and Training Child Care Fee Assistance (if applicable).

To meet the immunisation requirements for the above family assistance payments, your child will need to be fully immunised, be on a recognised immunisation catch up schedule or have an approved exemption.

You do not have to pay for any vaccines in order to be eligible for family assistance payments. You need only show that your child is fully immunised with vaccines that are currently provided free under the National Immunisation Program schedule.

For further information regarding Child Care Benefit, Child Care Rebate and Strengthening Immunisation for Children, visit [humanservices.gov.au/immunisation](http://humanservices.gov.au/immunisation) or visit a Centrelink or Medicare Service Centre.

### What are the exemptions?

Your child may have an exemption from the immunisation requirements if:

<b>A recognised immunisation provider (e.g. your doctor) signs a letter or form saying that:</b>	they have told you about the benefits and risks of immunising your child and you choose not to immunise your child (your provider should complete a Health Insurance Commission Immu-12 form);
	immunising your child with a particular vaccine is medically contraindicated (your provider should use the Health Insurance Commission Immu-11 form); or
	you are a member of the Church of Christ, Scientist and can provide a letter from an official of the church stating you and/or your partner are practising members of this church.

Immunisation exemption forms and further details on exemptions are available from Medicare offices or online at [humanservices.gov.au](http://humanservices.gov.au)

### Fact

Skipping vaccinations puts your child at greater risk of contracting vaccine preventable diseases.



## Section 10

# Glossary

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### **Anaphylaxis**

A sudden and severe allergic reaction which results in a serious fall in blood pressure.

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### **Bacteria**

Organisms of microscopic size that are smaller than a blood cell, but bigger than a virus; examples of bacterial infections are diphtheria, tetanus, pertussis, Hib and tuberculosis.

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### **Conjugate vaccine**

Some bacterial vaccines (e.g. Hib, meningococcal and pneumococcal conjugate vaccines) are made from the chemical linking (conjugation) of a tiny amount of the 'sugar' (known as the polysaccharide) that makes up the cell coat of the bacteria with a protein molecule, in order to improve the immune response to the vaccine.

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### **Contraindication**

A reason why a vaccine or drug must not be given.

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### **Febrile**

Related to a fever, as in febrile illness and febrile convulsions.

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### **Homeopathic preparations**

Are made using the process known as 'potentiation' and 'succession' meaning that the disease, tissue or plant extract is diluted in water a number of times with vigorous shaking between each dilution to the point where none of the original material is contained within the preparation by the end of the process.

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### **Immunisation**

The process of inducing immunity to an infectious agent by administering a vaccine.

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### **Immunity**

The ability of the body to fight off certain infections; immunity can result from natural ('wild') infections or from vaccination.

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### **Infection**

An infection occurs when bacteria or viruses invade the body; if the body cannot fight the infection, it may cause an illness.

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### **Vaccination**

The administration of a vaccine; if vaccination is successful, it results in immunity.

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### **Vaccine**

A product often made from extracts of killed viruses or bacteria, or from live weakened strains of viruses or bacteria; the vaccine is capable of stimulating an immune response that protects against natural ('wild') infection.

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### **Virus**

A tiny living organism that can cause infections; measles, rubella, mumps, polio, influenza and hepatitis B are examples of viruses.

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### **Toxin**

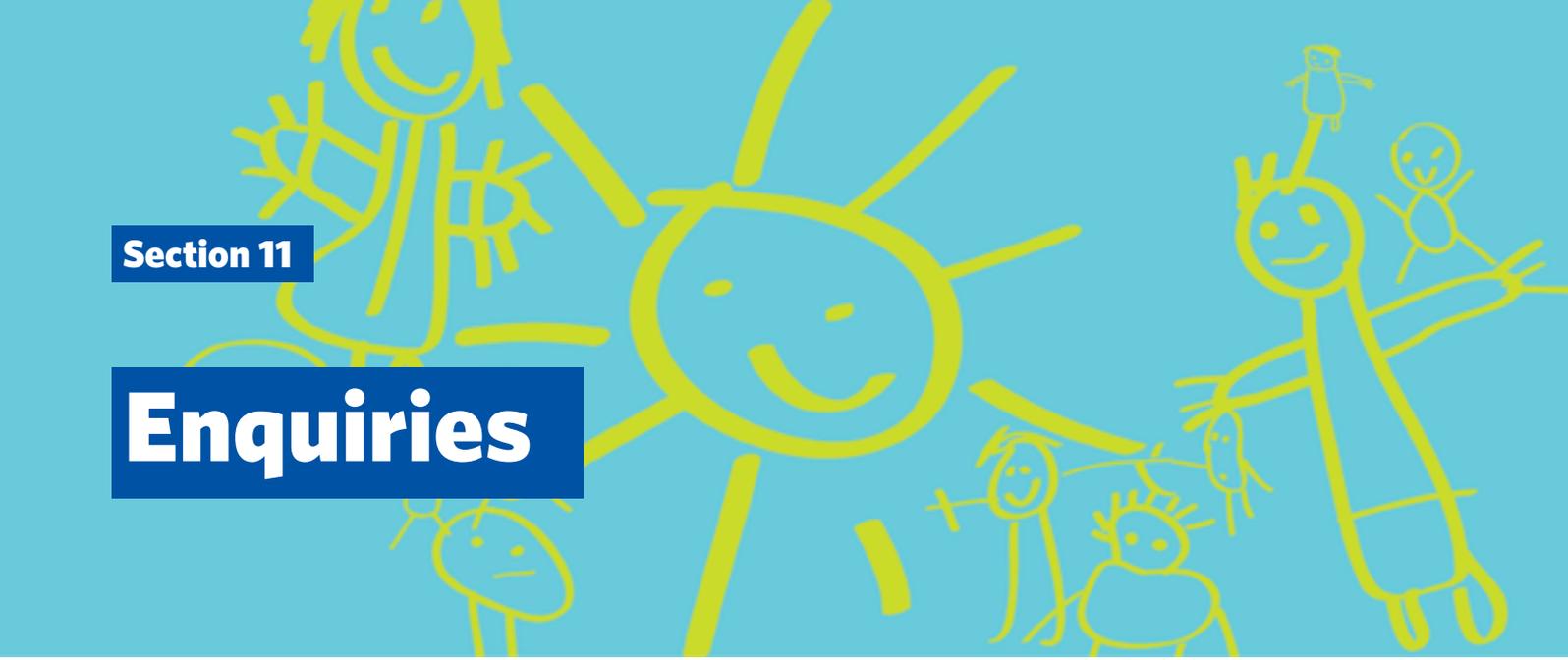
A poisonous substance of plant or animal origin which causes disease when present at low concentration in the body.

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### **Polysaccharide**

Complex carbohydrates, made up of multiple sugar molecules. Examples of polysaccharides include cellulose and starch.

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## Section 11

# Enquiries

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### Australian Capital Territory

ACT Immunisation Information Line  
(02) 6205 2300

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### New South Wales

1300 066 055

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### Northern Territory

(08) 8922 8044

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### Queensland

Contact the local Public Health Units  
(look under 'Health' in the White Pages) or  
13 HEALTH (13 43 25 84) 24 hour health hotline

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### South Australia

Parent Helpline (Women's and Children's Health Network)  
1300 364 100

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### Tasmania

1800 671 738

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### Victoria

1300 882 008

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### Western Australia

(08) 9321 1312

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### The Australian Childhood Immunisation Register

1800 653 809 (free call – an interpreter service is also available to translate records).

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### Immunise Australia Information Line

1800 671 811

## Summary of Diseases and how they are spread

Disease	Description	Signs and Symptoms	Complications
Chickenpox	Caused by highly contagious virus; causes low grade fever and vesicular rash. Spread by respiratory secretions or fluid from open rash blisters.	Rash, fever, difficulty walking and balancing	Infection of lesions, pneumonia, brain infection, meningitis (inflammation of the membranes around the brain and spinal cord)
Diphtheria	Contagious bacteria spread by droplets; causes severe breathing difficulties.	Sore throat, mild fever, swollen neck	Nerve and heart damage, membrane in throat causing breathing difficulties
Hib Disease	Contagious bacteria spread by respiratory droplets; causes meningitis, epiglottitis (respiratory obstruction), septicaemia, osteomyelitis (infection of the bones).	Neck stiffness, sensitivity to light, drowsiness, loss of appetite, high fever	Meningitis, arthritis, pneumonia, death
Hepatitis A	Contagious virus spread by contact with faeces or saliva, contaminated food or water.	Fever, weakness, loss of appetite, vomiting, dark urine, pale faeces, jaundice, stomach pain	Liver infection and damage
Hepatitis B	Contagious virus spread mainly by blood, sexual contact or from mother to newborn baby. Causes acute hepatitis or chronic carriage.	Weakness, loss of appetite, headache, vomiting, stomach pain, muscle/ joint pain, dark urine, pale faeces, jaundice	Liver failure, liver cancer
Influenza	Contagious virus spread by respiratory droplets, causes tiredness, high fever, chills, headache, cough, sneezing, running nose, poor appetite and muscle aches.	Tiredness, fever, chills, loss of appetite, muscle aches, cough, sneezing, runny nose	Pneumonia, liver complications, death
Measles	Highly infectious virus spread by respiratory droplets; causes fever, cough and rash.	Rash, fever, cough, runny nose, eye inflammation	Ear, brain and lung infection, brain damage, death
Meningococcal C Disease	Bacteria spread by respiratory droplets; causes sepsis (infection of the blood stream) and meningitis (infection of the tissues surrounding the brain).	High fever, neck stiffness, vomiting, sensitivity to light, irritability, drowsiness	Meningitis, blood infection, pneumonia, arthritis, conjunctivitis

## Summary of Diseases and how they are spread

Disease	Description	Signs and Symptoms	Complications
Mumps	Contagious virus spread by saliva; causes swollen neck glands, fever.	Swelling under the jaw area, fever, headache, aching muscles	Infection of testicles, ovaries, pancreas, liver, brain and heart, hearing loss, brain inflammation, sterility in men
Polio	Contagious virus spread by faeces and saliva; causes fever, headache, vomiting and may progress to paralysis.	90 per cent of the time there are no symptoms but they can include vomiting, tiredness, muscle pain, paralysis	Meningitis, paralysis, death
Pneumococcal Disease	Bacteria spread by respiratory droplets; causes fever, pneumonia, septicaemia and meningitis.	High fever, headache, vomiting, sensitivity to light, neck stiffness, loss of appetite, irritability, drowsiness	Meningitis, pneumonia, blood infection, middle ear, sinus infection
Rotavirus	Contagious virus spread by faeces and saliva; causes severe gastroenteritis and fever.	Diarrhoea, vomiting, fever	Severe diarrhoea, dehydration or shock
Rubella	Contagious virus spread by respiratory droplets; causes rash, fever and swollen glands and may cause severe malformations to babies of infected pregnant women.	Rash, swollen lymph glands, joint pain	Brain infection
Tetanus	Toxin-producing bacteria in soil that can spread to humans through cuts in the skin.	Muscle spasms, lockjaw, breathing difficulties, abnormal heart rhythms	Breathing difficulties
Whooping Cough	Contagious bacteria spread by respiratory droplets. Causes a prolonged cough, for up to three months, occasionally accompanied by vomiting.	Coughing, runny nose, fever	Lung infection, lack of oxygen to the brain, brain damage, death