

## **WHAT IS IMMUNISATION?**

Immunisation protects children (and adults) 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. Nine diseases can be prevented by routine childhood immunisation - diphtheria, tetanus, whooping cough, poliomyelitis (polio), measles, mumps, rubella, Haemophilus influenzae type b (Hib) and hepatitis B. All of these diseases can cause serious complications and sometimes death.

Immunisation is given as an injection or, in the case of polio vaccine, taken as drops by mouth. Immunisation helps children stay healthy by preventing serious infections.

## **Immunisation and vaccination**

Technically 'vaccination' is the term used for giving a vaccine - that is, actually getting the injection or swallowing the drops. '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 book, we have always used the term 'immunisation' because this is the expression most commonly used in the community.

## **How does immunisation work?**

All forms of immunisation work in the same way. When someone is injected with, or swallows, a vaccine, their body produces an immune response in the same way it would following exposure to a disease but without the person getting the disease. If the person comes in contact with the disease in the future, the body is able to make an immune response fast enough to prevent the person getting sick.

## **What is in vaccines?**

Some vaccines contain a very small dose of a live, but weakened form of a virus. Some vaccines contain a very small dose of killed bacteria or small parts of bacteria, and other vaccines contain 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 aluminium salt which helps produce a better immune response.

## **How long do immunisations take to work?**

In general, the normal immune response takes several weeks to work. This means protection from an infection will not occur immediately after immunisation. Most immunisations need to be given several times to build long lasting protection. A child who has been given only one or two doses of diphtheria-tetanus-pertussis vaccine (DTPa) is only partially protected against diphtheria, pertussis (whooping cough) and tetanus, and may become sick if exposed to these diseases. How long do immunisations last? The protective effect of immunisations is not always life-long. Some, like tetanus vaccine, can last up to 30 years, after this time a booster dose may be given. Some immunisations, such as whooping cough, give protection for about five years after a full course.

## **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. Measles, mumps, rubella, tetanus, polio and Hib vaccines protect more than 95% of children who have completed the course. Three doses of whooping cough vaccine protects about 85% of children who have been immunised, and will reduce the severity of the disease in the other 15% of children (who have also been immunised), if they do catch whooping cough. Booster doses are needed because immunity decreases over time. Three doses of hepatitis B vaccine protects over 95% of children.

## **Why do children get so many immunisations?**

A number of immunisations are required in the first few years of a child's life to protect the child against the most serious infections of childhood. The immune system in young children does

not work as well as the immune system in older children and adults, because it is still immature. Therefore more doses of the vaccine are needed. In the first months of life, a baby is protected from most infections by antibodies from her or his mother which are transferred to the baby during pregnancy. When these antibodies wear off, the baby is at risk of serious infections and so the first immunisations are given before these antibodies have gone.

#### **What are the side effects of immunisation?**

Common side effects of immunisation are redness and soreness at the site of injections 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. Paracetamol might be required to help ease the fever and soreness. For more information, refer to Common side effects of immunisation and what to do about them. Other side effects are very rare but if they do occur, a doctor should be consulted immediately.

#### **Why should I have my child immunised?**

There are two reasons for immunising everyone in Australia:

Immunisation is the safest and most effective way of giving protection against the 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 immunisation. If enough people in the community are immunised, the infection can no longer be spread from person to person and the disease dies out altogether. This is how smallpox was eliminated from the world, and polio has disappeared from many countries.

#### **Why do we need immunisation?**

Our bodies have a natural defence system against disease. This is called the immune system. The immune system produces substances called antibodies, which fight off disease and infection. There are some diseases that can kill children or cause lasting damage to their health, and sometimes your child's immune system needs help to fight those diseases. Immunisation provides that help.

#### **When to have your child immunised**

Your child should have their first immunisations at two months old. They will be given further doses of these immunisations when they are three months old and four months old. Other immunisations are given at around 13 months old, then between three and five years old (before your child starts school), and in their teenage years.

Some immunisations have to be given more than once to build up your child's immunity (protection). This top-up dose is sometimes called a booster.

You will be sent an appointment inviting you to bring your child for their immunisations.

Most doctors' surgeries and health centres run special immunisation or baby clinics. You can often drop in at other times if you can't get to the clinic during the day.

It is important that your child has their immunisations at the right age. This will help keep the risk of your child catching these diseases as low as possible. The risk of side effects from some vaccines may increase if you delay them.