NHS SCOTLAND

A guide to childhood immunisations

up to 5 years of age

2014 Edition

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SCOTTISH GOVERNMENT

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Contents

This guide is for parents and carers of children up to the age of 5. It provides information on the routine immunisations that are offered to protect them from serious childhood diseases. It describes these diseases and explains why young children need protection against them. It also answers some of the most common questions about immunisations.

Summary of immunisations

Immunisation is the safest and most effective way of protecting your child against serious diseases. By having your child immunised at the recommended times (see the back cover of this booklet), you are protecting them through early childhood against such diseases as:

- diphtheria
- tetanus
- pertussis (whooping cough)
- Hib (Haemophilus influenzae type b)
- polio
- MenC (meningococcal group C)
- pneumococcal infection
- rotavirus
- measles
- rubella (German measles)
- mumps
- flu.

These diseases can be very serious. Immunising your child not only protects them but also prevents the diseases spreading. It also protects other children who cannot be immunised because they have serious medical conditions.

If you have any questions or want more information, talk to your GP, practice nurse or health visitor, or call the NHS inform helpline on **0800 22 44 88** (textphone 18001 0800 22 44 88) for more information. The helpline is open every day 8 am to 10 pm and also provides an interpreting service.

This information is also available at **www.immunisationscotland.org.uk**

Common questions about immunisation

What is immunisation?

Immunisation is a way of protecting against serious diseases. Once we have been immunised, our bodies are better able to fight these diseases if we come into contact with them.

This guide uses both vaccine and immunisation to describe the way in which you can protect your child against certain diseases and infections – both words mean the same thing.

How do vaccines work?

Vaccines contain either a greatly weakened form of the bacterium or virus that causes a disease, or a small part of it. Vaccines work by causing the body's immune system to make antibodies (substances that fight off infection and disease). If your child comes into contact with the infection, the antibodies will recognise it and be ready to protect him or her. Because vaccines have been used so successfully in the UK, diseases such as diphtheria have almost disappeared from this country.

When should my child be immunised?

It is important that your child has their immunisations at the right age – the first ones are offered at 2 months old. They will be offered further doses of these immunisations at 3 months, 4 months and 12 months old, as well as a further dose from 3 years 4 months old. They will then be offered a final dose in their teenage years. Your child will also be offered flu immunisation every year from age 2, or from 6 months if they have an underlying medical condition. (Please see the table on the back cover of this leaflet.)

Why are babies immunised so early?

Diseases can be particularly serious in young babies. It is important to make sure babies are protected as early as possible to prevent them from catching these diseases.

Why does my baby need more than one dose of the vaccine?

Most immunisations have to be given more than once to boost your child's immunity. For example, three doses of DTaP/IPV/Hib vaccine (protects against diphtheria, tetanus, pertussis (whooping cough), polio and Haemophilus influenzae b (Hib), see glossary on page 48) are needed to provide protection in babies. Booster doses are then offered later in life to provide longer-term protection.

How will I know when immunisations are due?

You will be sent an appointment to bring your child in for their immunisations. Most surgeries and health centres run special immunisation or baby clinics. If you can't get to the clinic, contact the surgery to make another appointment.

All routine childhood immunisations are free.

What happens at the appointment?

The doctor or nurse will explain the immunisation process to you and answer any questions you may have. Each vaccine is injected into the muscle of the thigh or upper arm, except rotavirus, which is a liquid given by mouth (orally) and flu, which is given as a nasal (nose) spray for children aged 2 and over.

What if my child is ill on the day of the appointment?

If your child has a minor illness without a fever, such as a cold, they should have their immunisations as normal.

If your child is ill with a fever, delay the immunisations until they have recovered. This is to avoid the fever being wrongly associated with the vaccine, or the vaccine increasing the fever your child already has.

What if I miss the appointment?

If you miss the appointment or have to delay the immunisation, make a new appointment. The immunisation programme can be continued from where it stopped without having to start again. However, the first dose of the rotavirus vaccine must be given before 15 weeks of age and babies should have the second dose before 24 weeks of age (see page 18).

If some diseases have disappeared from this country, why do we need to immunise against them?

In the UK, these diseases are kept at bay by high immunisation rates. Around the world, more than 2 million deaths are avoided each year by immunisation. As more people travel abroad and come to visit this country, there is a risk that they will bring these diseases into the UK. The diseases may spread to people who haven't been immunised, so your baby is at greater risk if he or she has not been immunised. Immunisation doesn't just protect your child, it also helps to protect your family and the whole community, especially those children who, for medical reasons, can't be immunised.

Remember, it's never too late to have your child immunised. Even if your child has missed an immunisation and is older than the recommended ages, talk to your GP, practice nurse or health visitor to arrange for your child to be immunised. However, the first dose of the rotavirus vaccine must be given before 15 weeks of age and babies should have the second dose before 24 weeks of age (see page 18).

How do we know that vaccines are safe?

Before they are allowed to be used, all medicines (including vaccines) are tested for safety and effectiveness. Once they are in use the safety of vaccines continues to be monitored. All medicines can cause side effects, but vaccines are among the very safest. Any rare side effects that are discovered can be assessed further. Research from around the world shows that immunisation is the safest way to protect your child's health.

I am worried that my child will be upset by having an injection.

Your child may cry and be upset for a few minutes, but they will usually settle down after a cuddle.

Will there be any side effects from the vaccines?

There may be side effects, but they are usually mild. Your child may get a little redness, swelling, or tenderness where the injection was given. This will disappear on its own. Some children may develop a fever, be a bit irritable or feel unwell. If your child has a fever and appears uncomfortable or unwell they can be given infant paracetamol or ibuprofen liquid. Read the instructions on the bottle carefully and give your child the correct dose for their age. If necessary, give them a second dose four to six hours later. (For information on side effects after MMR vaccination please see page 31).

What is a fever?

A fever is a body temperature over 37.5ºC. Fevers are quite common in young children, but are usually mild. If your child's face feels hot to touch and they look red or flushed, he or she may have a fever. You can check their temperature with a thermometer.

How to treat a fever

If your child has a fever:

- make sure that they don't have too many layers of clothes or blankets on (take layers off)
- switch down the house heating
- give them plenty of cool drinks (if you are breastfeeding, your child may feed more frequently)
- **do not** put them in a bath, sponge them down or put a fan on them (there is no evidence that this will lower your child's fever).

A dose of infant paracetamol or ibuprofen liquid may help reduce your child's fever. Read the instructions on the bottle very carefully. You may need to give a second dose four to six hours later. **Remember**, never give medicines that contain aspirin to children under 16.

What are fits?

Fits are also called seizures or convulsions. Some are associated with fever and some are not.

In the first five years of a child's life, the most common type of fit is caused by fever. This may be called a 'febrile seizure' or 'febrile convulsion'. Sometimes immunisations are followed by a fever that may cause a febrile seizure. Most children who have febrile seizures recover fully.

When a seizure occurs within a short time after immunisation, it might not have been caused by the vaccine or the fever. It could be due to an underlying medical condition.

If your child has a fit after an immunisation, contact your GP. He or she may refer you to a specialist for advice about further investigation and future immunisations.

If you are worried about your child, trust your instincts.

Speak to your GP or call NHS 24 on **111**. Call your GP immediately if, at any time, your child has a temperature of 39°C or above, or has a fit. If the surgery is closed and you can't contact your GP, trust your instincts and go to the emergency department of your nearest hospital.

Even more rarely children can have a severe reaction within a few minutes of the immunisation, which causes breathing difficulties and can cause the child to collapse. This is called an anaphylactic reaction. A recent study has shown that only one **anaphylactic reaction** occurs in about a million immunisations. The people who give immunisations are trained to deal with anaphylactic reactions and children recover completely with treatment.

You can report suspected side effects of vaccines and medicines through the Yellow Card Scheme.

This can be done online by visiting **www.yellowcard.gov.uk** or by calling the Yellow Card hotline on 0808 100 3352 (available Monday to Friday – 10 am to 2 pm).

I'm worried that my child may have allergies. Can he or she have the vaccines?

Asthma, eczema, hay fever, food intolerances and all other allergies do not prevent your child having most of the vaccines in the Routine Childhood Immunisation Programme (see the back cover of this leaflet). There are some exceptions, such as the flu nasal (nose) spray vaccine, but an alternative injection may be suitable for children who cannot have the nasal spray. If you have any questions, speak to your GP, practice nurse or health visitor.

Are some children allergic to the vaccines?

Very rarely children can have an allergic reaction soon after the immunisation. This reaction may be a rash or itching affecting part or all of the body. The nurse will be able to advise on this. This does not mean that your child should stop having immunisations.

Are there any reasons why my child should not be immunised?

There are very few reasons why children cannot be immunised. The vaccines should not be given to children who have had:

- a confirmed anaphylactic reaction (see page 10 and glossary on page 48) to a previous dose of the vaccine, or
- a confirmed anaphylactic reaction to neomycin, (see glossary on page 49) streptomycin (see glossary on page 50) or polymyxin B (antibiotics that may be added to vaccines in very tiny amounts, see glossary on page 50).

Certain rare, long-term conditions that will be known to your GP, for example, Severe Combined Immunodeficiency (SCID) disorder may also mean that your baby should not have the rotavirus vaccine.

Children who have some other conditions should not have the nasal (nose) spray vaccine for flu. An alternative form of the flu vaccine may be suitable for children who cannot have the nasal spray vaccine. These children will be offered a flu vaccine as an injection in the upper arm. For more information, see *Protect your child against flu: Information for parents of children aged 2–5 years old* or visit **www.immunisationscotland.org.uk/childflu**

My baby was born early. When should premature babies have their first immunisation?

Premature babies may be at greater risk of infection. They should be immunised according to the recommended schedule from 2 months after birth, no matter how premature they were.

How long do I have to wait before I can take my baby swimming?

You can take your baby swimming at any age, both before and after their immunisation. It doesn't matter if they haven't completed their course of immunisations yet.

Are there any other ways to immunise my child?

There is no other proven, effective way to immunise your child. The Faculty of Homeopathy (the registered organisation for doctors qualified in homeopathy) follows the Department of Health guidelines and advises parents to have their children immunised with standard vaccines, unless there are medical contraindications (medical reasons why they cannot be given the vaccines).

Diseases that are prevented by routine immunisation

This section provides information about diseases and infections that your child is protected against by the Routine Childhood Immunisation Programme.

These are:

Diphtheria

Diphtheria is a serious disease that usually begins with a sore throat and can quickly cause breathing problems. It can damage the heart and nervous system and, in severe cases, can kill. Before the diphtheria vaccine was introduced in the UK, there were up to 70,000 cases of diphtheria a year, causing around 5,000 deaths a year. Diphtheria can be spread from person to person through close contact.

Tetanus

Tetanus is a disease affecting the nervous system which can lead to muscle spasms, can cause breathing problems and can kill. It is caused when germs that are found in soil and manure get into the body through open cuts or burns. Tetanus cannot be passed from person to person.

Pertussis (whooping cough)

Whooping cough is a disease that can cause long bouts of coughing and choking, making it hard to breathe. Whooping cough can last for up to 10 weeks. Babies under 1 year of age are most at risk from whooping cough.

For these babies, the disease is very serious and can kill. It is not usually as serious in older children. Before the pertussis vaccine was introduced, the average number of cases of whooping cough reported each year in the UK was 120,000. In the year before the vaccine was introduced, 92 children died. Children usually catch whooping cough by breathing in tiny droplets that are released into the air by other people's coughs and sneezes.

Polio

Polio is a virus that attacks the nervous system and can cause permanent paralysis of the muscles. If it affects the chest muscles or the brain, it can kill. Before the polio vaccine was introduced, there were as many as 8,000 cases of polio in the UK in epidemic years. Because of the continued success of the polio immunisation, there have been no cases of natural polio infection in the UK for over 25 years (the last case was in 1984). Polio is spread primarily from ingesting material which contains the virus.

Hib

Haemophilus influenzae type b (Hib) is an infection caused by bacteria. It can lead to a number of major illnesses such as blood poisoning (septicaemia), pneumonia and meningitis. The Hib vaccine only protects your baby against the type of meningitis caused by the Haemophilus influenzae type b bacteria – it does not protect against any other type of meningitis. The illnesses caused by Hib can kill if they are not treated quickly. Before the Hib vaccine was introduced, there were about 800 cases of Hib in young children every year in the UK. Since the vaccine was introduced, the number of children under 5 years of age with Hib has fallen by 99%.

Hib can be transmitted through the mucus or droplets from the nose and throat of someone who is infected.

There are several types of bacteria that can cause meningitis (see the section on meningitis and septicaemia on page 39).

Pneumococcal infection

Pneumococcal (pronounced new-mo-cock-al) infection is one of the most common causes of meningitis (an infection of the lining of the brain). It also causes ear infections (*otitis media*), pneumonia (infection of the lungs) and some other serious illnesses.

Up to 60% of children carry pneumococcal bacteria in the back of their nose and throat. They constantly pass these bacteria around by coughing, sneezing and close contact.

Measles

Measles is caused by a very infectious virus. Nearly everyone who catches it will have a high fever and a rash, and will generally be unwell. Children often have to spend about five days in bed and could be off school for 10 days.

Adults are likely to be ill for longer. It is not possible to tell who will be seriously affected by measles. The complications of measles affect 1 in every 15 children, and include chest infections, fits, encephalitis (inflammation of the brain) and brain damage. In very serious cases, measles can kill. In 1988, before the MMR vaccine led to a big decrease in disease, 86,000 children caught measles in the UK and 16 died.

Measles is one of the most infectious diseases known. A cough or a sneeze can spread the measles virus over a wide area. Because it is so infectious, there is a high chance that your child will get measles if he or she is not protected.

MenC

MenC (meningococcal group C bacteria) can cause meningitis (an infection of the lining of the brain) and septicaemia (blood poisoning). Before the MenC vaccine was introduced, this disease caused about 1,500 cases and 150 deaths each year in the UK.

The MenC vaccine protects against meningitis and septicaemia caused by MenC, but does not protect against meningitis caused by other bacteria or viruses. See page 24 for more information about the MenC vaccine.

See page 39 for more information about meningitis and septicaemia and the signs and symptoms of these serious diseases.

Mumps

Mumps is caused by a virus which can lead to fever, headache and painful, swollen glands in the face, neck and jaw. It can result in permanent deafness, viral meningitis (infection of the lining of the brain) and encephalitis (inflammation of the brain). It can also cause painful swelling of the testicles in males and the ovaries in females.

Mumps lasts for about 7 to 10 days. Before the MMR vaccine was introduced, about 1,200 people a year in the UK went into hospital because of mumps.

Mumps is spread in the same way as measles. It is about as infectious as flu.

Rotavirus

Rotavirus is a virus that infects the gut (tummy), causing severe diarrhoea and vomiting. Most babies get sick (vomit) or have diarrhoea at some time and recover fully after a few days. However, sickness and diarrhoea caused by the rotavirus can lead to dehydration (loss of body fluids). Dehydration can be very dangerous for babies and young children and can require hospital treatment.

The virus spreads easily by hand-to-mouth contact. It can be picked up from surfaces, such as toys, food, kitchen utensils, door handles or dirty nappies (the virus is in the faeces/poo). Your baby can then swallow the virus when they put their hand in their mouth. The rotavirus can also be spread through tiny droplets in the air from coughs.

In Scotland, around 1200 babies have to go to hospital every year with rotavirus. Since the vaccine was introduced in 2013, the number of laboratory confirmed cases in infants has fallen by more than 80%.

Rubella

Rubella (German measles) is a disease caused by a virus. In children it is usually mild and can go unnoticed. It causes a short-lived rash, swollen glands and a sore throat. Rubella is, however, very serious for unborn babies. It can seriously damage their sight, hearing, heart and brain. This condition is called congenital rubella syndrome (CRS). Rubella infection in the first three months of pregnancy causes damage to the unborn baby in 9 out of 10 cases. Before the MMR vaccine, in many cases pregnant women caught rubella from their own or their friends' children.

In the five years before the MMR vaccine was introduced, about 43 babies a year were born in the UK with congenital rubella syndrome.

Rubella is spread in the same way as measles and mumps. It is about as infectious as flu.

Influenza (flu)

Children get the same flu symptoms as adults. These symptoms are worse than a normal cold and include a fever, chills, aching muscles and joints, headaches and extreme tiredness. Flu can also cause a stuffy nose, dry cough, sore throat and very high temperature. These symptoms can last between two and seven days.

Complications arising from flu can include bronchitis, pneumonia, painful middle ear infection, vomiting and

diarrhoea. For children with certain medical conditions, getting flu can be even more serious as it's likely to make their medical condition much worse. In severe cases, which are very rare, flu can lead to disability and even death.

- Even healthy children can become seriously ill from flu and can spread it to family, friends and others.
- In Scotland, thousands of children under the age of 14 visit their GP each year with flu or its complications. Some of these children will be hospitalised for treatment.
- Very young children are more vulnerable to flu, particularly as they are less likely to have built up any protection from previous infections.

The Routine Childhood Immunisation Programme

This section gives information to parents about which immunisations are offered, when they should be given and what diseases they prevent.

Immunisations at 2, 3 and 4 months of age

You will be offered DTaP/IPV/Hib, MenC, PCV and rotavirus vaccines for your baby during the first 4 months of their life – see the table below. The vaccines are described in the following pages, together with the diseases they protect against. Each immunisation is given as a single injection into the muscle of the thigh, except rotavirus, which is a liquid given by mouth (orally).

When to immunise	Diseases protected against	Vaccine given
2 months old	• Diphtheria, tetanus, pertussis (whooping cough), polio and Haemophilus influenzae type b (Hib)	• DTaP/IPV/Hib
	• Pneumococcal infection	• Pneumococcal conjugate vaccine (PCV)
	• Rotavirus	• Rotavirus vaccine
3 months old	• Diphtheria, tetanus, pertussis (whooping cough), polio and Haemophilus influenzae type b (Hib)	• DTaP/IPV/Hib
	• Meningococcal C (MenC)	• MenC
	• Rotavirus	• Rotavirus vaccine
4 months old	• Diphtheria, tetanus, pertussis (whooping cough), polio and Haemophilus influenzae type b (Hib)	• DTaP/IPV/Hib
	• Pneumococcal infection	• PCV

DTaP/IPV/Hib vaccine

Your baby will be offered the DTaP/IPV/Hib vaccine when they are 2, 3 and 4 months old.

The DTaP/IPV/Hib vaccine protects against five different diseases – diphtheria, tetanus, pertussis (whooping cough), polio and Haemophilus influenzae type b (Hib).

How effective is the DTaP/IPV/Hib vaccine?

Studies have shown that DTaP/IPV/Hib vaccine is very effective in protecting your baby against these five serious diseases. Further doses are needed to extend this protection as your child grows up.

Pneumococcal vaccine (PCV)

Your baby will be offered the pneumococcal vaccine when they are 2 and 4 months old.

PCV provides some protection against one of the most common causes of meningitis, and against other conditions such as severe ear infections and pneumonia caused by pneumococcal bacteria. This vaccine does not, however, protect against meningitis caused by other bacteria or viruses (see page 39).

For more information about possible side effects that children may develop after an immunisation, please see the questions about side effects on page 8.

MenC vaccine

Your baby will be offered the MenC vaccine (see glossary on page 49) when they are 3 months old.

This vaccine protects against meningitis and septicaemia (blood poisoning) caused by meningococcal group C bacteria. Before the vaccine was introduced, this disease caused about 1,500 cases and 150 deaths each year in the UK. The MenC vaccine does not protect against meningitis caused by other bacteria or by viruses (see page 39).

How effective is the MenC vaccine?

Since the vaccine was introduced, the number of babies under the age of 1 year with the group C disease has fallen by about 99% across the UK. Booster doses of MenC between 12 and 13 months of age and during the early teenage years are needed to provide long-term protection against both meningitis and septicaemia, which are very serious. See page 39 for descriptions of the diseases, their signs and symptoms, as well as what to do about them.

Rotavirus vaccine

The rotavirus immunisation is offered to all babies. Unlike most immunisations, rotavirus isn't given by injection. It is a liquid given by mouth (orally). To get the best protection, your baby should get two rotavirus immunisations one month apart.

Are there any side effects from the rotavirus vaccine?

Babies who have had the vaccine can sometimes become restless and tetchy, and some may even develop mild diarrhoea.

In very rare cases (about 2 in every 100,000 babies immunised), the vaccine can affect the baby's lower gut. They may develop pain in their tummy, vomiting, and sometimes they may pass what looks like red currant jelly in their nappies. To reduce this risk, the first dose of the vaccine will not be given to babies older than 15 weeks of age. Babies who receive the first dose before week 15 should have their second dose four weeks later, and before 24 weeks. The vaccine should not be given to babies older than 24 weeks of age.

Rotavirus is a live vaccine. Does this mean my child can pass the infection to other people?

The virus in the vaccine will pass through your baby's gut and may be picked up by whoever changes his or her nappy. This may mean that people with a severely weakened immune system could catch the virus from your baby. Therefore, people whose immune systems are severely compromised because of a medical condition or treatment should avoid this sort of close contact with babies who have had the rotavirus vaccine for 14 days.

Immunisations between 12 and 13 months of age – within a month of the first birthday – and from 3 years 4 months

Your child will be offered a dose of the combined Hib/MenC vaccine (see glossary on page 49) between 12 and 13 months of age to boost their protection against Haemophilus influenzae type b (Hib) and meningococcal C (MenC) infections. This booster will protect your child through early childhood.

Your child will also be offered their first dose of the MMR vaccine at this time to protect against measles, mumps and rubella, and the PCV booster to provide longer term protection against pneumococcal infections such as meningitis, pneumonia and otitis media – see the table below.

When to immunise	Diseases protected against	Vaccine given
Between 12 and 13 months – within a month of the first birthday	• Haemophilus influenzae type b (Hib) and meningococcal C (MenC) infection	• Hib/MenC
	• Measles, mumps and rubella (German measles)	• MMR
	• Pneumococcal infection	• PCV booster
2 to 11 years – annually	Influenza (flu)	Flu vaccine
From 3 years 4 months	• Diphtheria, tetanus, pertussis and polio	• dTaP/IPV or DTaP/IPV
	• Measles, mumps and rubella	• MMR

Your child will need a second dose of MMR vaccine, offered from age 3 years 4 months. Each immunisation is given as a single injection into the upper arm when over the age of 1 year.

Hib/MenC vaccine

Your baby will be offered their booster dose of Hib/MenC vaccine (see glossary on page 49) when they are between 12 and 13 months old at the same time as their PCV and MMR immunisations. This booster dose provides longer term protection against two of the causes of meningitis and septicaemia.

MMR vaccine

Your baby will be offered their first dose of MMR vaccine at between 12 and 13 months of age, at the same time as their PCV and Hib/MenC immunisations. MMR protects your child against measles, mumps and rubella (German measles).

What is the MMR vaccine?

The MMR vaccine contains weakened versions of live measles, mumps and rubella viruses. Because the viruses are weakened, people who have had the vaccine cannot infect other people.

How and when is the vaccine given?

The vaccine is injected into the muscle of the thigh or upper arm. It is given to a child between 12 and 13 months of age after the immunity the baby received from their mother wears off. A second dose is given from age 3 years 4 months.

How effective is the MMR vaccine?

The MMR vaccine has been responsible for almost wiping out the three diseases in young children since it was introduced in the UK in 1988.

In 1988 (the year before the MMR vaccine was introduced in the UK) around 86,000 cases of measles were reported in the UK, mostly in children. Sixteen of these cases resulted in death. In 2003, there were around 350 confirmed cases of measles. Since 1992, there have been three deaths in the UK from acute measles.

Before the MMR vaccine was introduced, mumps was the most common cause of viral meningitis in children under 15. It led to 1,200 people across the UK having to go into hospital each year. If children aren't immunised with the MMR vaccines, they are at risk of mumps.

In each of the five years before the MMR vaccine was introduced, there were around 43 cases of congenital rubella syndrome in the UK. In recent years, there has been on average fewer than two cases every year. Most of these cases were caught while abroad, but several have been caught in the UK. It is important that all children are protected against rubella to prevent the number of cases increasing.

For more information about possible side effects that children may develop after an immunisation, please see the questions about side effects on page 8.

Although all three diseases are now uncommon in young children in the UK, those children who are not immunised are still at risk of catching them. In order for everybody to be protected, over 95% of children need to be immunised with MMR so the diseases cannot spread. However, immunisation levels in many areas are currently below this and outbreaks of measles and mumps have occurred in children who have not been properly protected.

Immunising your child with two doses of the MMR vaccine will give them the best protection.

Why does my child need two doses of MMR vaccine?

Your child needs a second dose of MMR because it doesn't always work fully the first time. Some children who have only one dose of the vaccine might not be protected against one or more of the diseases.

Remember, it's never too late to have your child immunised. Even if your child has missed an immunisation and is older than the recommended ages, talk to your GP, practice nurse or health visitor to arrange for your child to be immunised. However, the first dose of the rotavirus vaccine must be given before 15 weeks of age and babies should have the second dose before 24 weeks of age.

Two doses of the MMR vaccine are routinely given across Europe, as well as in the US, Canada, Australia and New Zealand. By giving your child a second dose of the MMR vaccine, you can make sure they have the best possible protection for the future.

Are there any reasons why my child should not receive this vaccine?

Children who are 'immunosuppressed' should not, in general, receive live vaccines.

Children who are immunosuppressed include those:

- whose immune system is suppressed because they are undergoing treatment for a serious condition such as a transplant or cancer
- who have any condition which affects the immune system, such as severe primary immunodeficiency.

If this applies to your child, you must tell the doctor, practice nurse or health visitor before the immunisation. They can get specialist advice if needed.

It should be noted that pork gelatine is an ingredient in one of the MMR vaccines currently used in Scotland. Gelatine is an essential ingredient in many medicines, including some vaccines. If you have any concerns about this, please speak to your GP, practice nurse or health visitor as there are alternative MMR vaccines available which do not contain pork gelatine. Many faith groups, including Muslim and Jewish communities, have approved the use of gelatine-containing vaccines. It is, however, an individual choice whether or not to receive this vaccine and we recognise there will be different views held within different communities.

After immunisation with MMR

The three different viruses in the vaccine act at different times and may produce the following side effects after the first dose:

- 6 to 10 days after the immunisation, as the measles part of the vaccine starts to work, about 1 in 10 children may develop a fever, and some develop a measles-like rash and go off their food. (For advice on treating a fever, see page 8.)
- About 1 in every 1,000 immunised children may have a fit caused by a fever. This is called a 'febrile convulsion' (see page 9). However, if a child who has not been immunised catches measles, they are five times more likely to have a fit than a child who has had the vaccine.
- Rarely, children may get mumps-like symptoms (fever and swollen glands) about three weeks after their immunisation, as the mumps part of the vaccine starts to work.
- Very rarely, children may get a rash of small bruise-like spots in the six weeks after the immunisation. This is usually caused by the measles or rubella parts of the vaccine. If you see spots like these, take your child to your GP to be checked. He or she will tell you how to deal with the rash.
- Fewer than one child in a million develops encephalitis (inflammation of the brain) after the MMR vaccine and there is very little evidence that it is caused by the vaccine. However, if a child catches measles, the chance of developing encephalitis (inflammation of the brain) is far greater.
- If your child experiences any of these reactions, he or she will not be infectious and can mix with other people as normal.

Are there any side effects from the second dose of the MMR vaccine?

It is even less common to have the side effects mentioned above after the second dose than after the first dose. When side effects do happen, they are usually milder.

If your child experiences any of these reactions, he or she will not be infectious and can mix with other people as normal.

MMR is a live vaccine. Does this mean my child can pass the infection to other people?

No, your child will not be infectious.

Egg allergies

The MMR vaccine can safely be given to children who have a severe allergy (an anaphylactic reaction, see glossary on page 48) to egg. If you have any concerns, talk to your GP, practice nurse or health visitor.

MMR and autism

Over 10 years ago, there were many stories in the media linking MMR with autism. Some parents delayed their child's MMR immunisation or didn't have it all – resulting in outbreaks of measles. However, independent experts from around the world have found no credible scientific evidence for such a link. There is now a large amount of evidence showing that there is no link.

The MMR vaccine has been used in over 100 countries and has an excellent safety record.

MMR is the safest way to protect your child against measles, mumps and rubella.

Pneumococcal vaccine (PCV)

Your child will be offered their booster dose of PCV between 12 and 13 months of age at the same time as their Hib/MenC and MMR immunisations.

This booster immunisation provides longer-term protection against pneumococcal infection.

Will multiple immunisations at the same time overload my child's immune system?

No. From birth, babies' immune systems protect them from the germs that surround them. Without this protection, babies would not be able to cope with the tens of thousands of bacteria and viruses that cover our skin, nose, throat and intestines at all times. This protection carries on throughout life.

In theory, a baby could respond effectively to around 10,000 vaccines at any time. A baby's immune system can and does cope with the MMR, PCV and Hib/MenC vaccines (see glossary on page 49) easily at the same time.

What's the difference between dTaP/IPV and DTaP/IPV and does the difference matter?

Diphtheria vaccines are produced in two strengths depending on how much diphtheria toxoid (the toxin produced by the diphtheria bacteria that has been inactivated) they contain. The two strengths are abbreviated to 'D' for the high strength and 'd' for the low strength. There are two vaccines that are available for use as a booster – one containing the high-strength diphtheria (DTaP/IPV) and the other containing low-strength diphtheria (dTaP/IPV). Both vaccines have been shown to provide good responses, and so it doesn't matter which one your child has for their booster.

Immunisation from 2 years of age

Flu vaccine

In 2014, flu immunisation will be offered to pre-school children aged 2–5 through their GP practice (children must be aged 2 or older on 1 September 2014 to be eligible). All primary school children will also be offered the vaccine this year at school. This is part of a major extension to the flu immunisation programme, aiming to help protect all children against flu. The flu vaccine will then be offered every year to continue to protect your child against flu viruses.

The flu nasal spray vaccine contains a small trace of pork gelatine. Many faith groups, including Muslim and Jewish communities, have approved the use of gelatine-containing vaccines. It is, however, an individual choice whether or not to receive this vaccine and we recognise there will be different views held within different communities. The nasal spray is a much more effective vaccine than the alternative flu vaccine given by injection. However, those who choose not to have the nasal spray vaccine for faith reasons may request the injectable alternative.

For more information on the nasal (nose) spray vaccine for flu, please read *Protect your child against flu: Information for parents of children aged 2–5 years old.*

This information is available at:
www.immunisationscotland.org.uk/childflu

Non-routine immunisations

This section provides information about vaccines that are not part of the Routine Childhood Immunisation Programme. These are not listed on the table at the back of this booklet.

These are:

- BCG (page 36)
- Hepatitis B (page 37)
- Influenza (flu, page 38)

At what age to immunise	Diseases protected against	Vaccine given
At birth (to babies who are more likely to come into contact with TB than the general population)	• Tuberculosis	• BCG
At birth (to babies whose mothers have hepatitis B)	• Hepatitis B	• Hep B

BCG vaccine

Protecting babies against tuberculosis (TB)

The BCG vaccine is not part of the Routine Childhood Immunisation Programme. The BCG vaccine is offered to babies who are more likely to come into close and prolonged contact with someone with TB, who have lived in an area with high rates of TB, or have parents or grandparents who come from a country with a high rate of TB. If the immunisation is offered, it can usually be given while you and your baby are still in hospital, but it can also be given later.

What is TB?

TB is an infection that usually affects the lungs. It can also affect other parts of the body, such as the lymph glands, bones, joints and kidneys. Most cases can be cured with treatment. TB can also cause a very serious form of meningitis.

For more information on tuberculosis, please read the leaflet *BCG and your baby: Protecting babies against TB*

This information is also available at: **www.immunisescotland.com/bcg**

Hepatitis B vaccine

Protecting babies against hepatitis B

The hepatitis B vaccine is not part of the Routine Childhood Immunisation Programme. The vaccine is currently given to babies whose mothers have been diagnosed with hepatitis B, and also others who are at risk of catching it, to prevent the babies developing the disease.

What is hepatitis?

Hepatitis is an infection of the liver caused by hepatitis viruses. The hepatitis B vaccine protects against the B type of hepatitis, but it does not protect against hepatitis caused by the other types of the virus.

The hepatitis B virus is passed through infected blood from mothers to their babies. Pregnant woman in the UK are offered a hepatitis B test during their antenatal care.

For more information on Hepatitis B, please read the leaflet *Hepatitis B immunisation: How to protect your baby*

This information is also available at: **www.immunisescotland.com/hepb**

Influenza vaccine

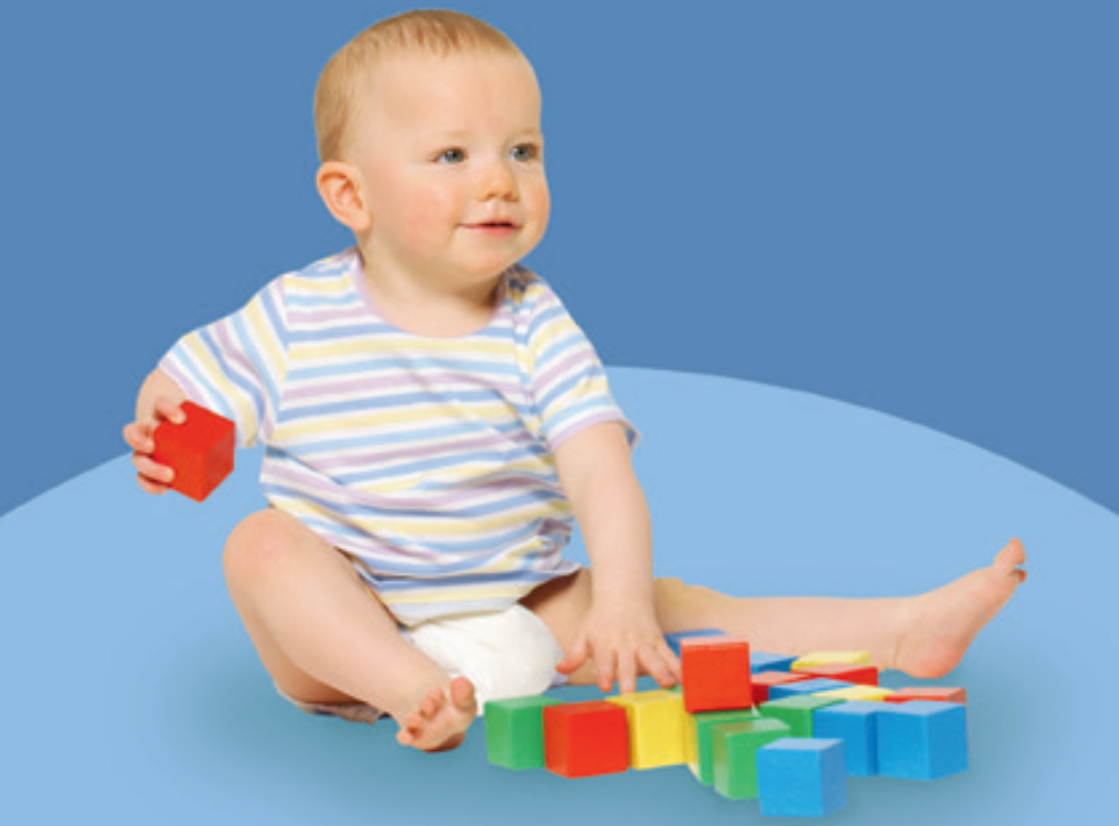
What is influenza (flu)?

Flu is a virus that can cause chills, fever and a sore throat. The virus can also cause headaches, coughing, sneezing and extreme tiredness. If your child has heart or lung problems, flu will hit them harder. Children with underlying medical conditions are offered an annual flu vaccine from 6 months of age. All children aged 2 and older are offered the nasal spray flu vaccine (see page 34). The nasal spray offered to all children from 2 years of age will not be offered to babies under 2 years of age because it is not licensed in this age group. An alternative injectable form of the vaccine will be offered to children between 6 months and 2 years of age with underlying medical conditions, except if they have a severe egg allergy as many of the injectable vaccines are not suitable for these children. If your baby falls into one of the following categories, they are eligible for a free flu immunisation every year from your GP:

- chronic respiratory disease
- chronic heart disease
- chronic kidney disease
- chronic liver disease
- chronic neurological disease
- diabetes
- immunosuppression

Even if your child had a flu vaccine last year, they will need another one this year. Flu viruses are constantly changing and a different vaccine has to be made as time goes on to continue to protect against the new viruses. So next year's vaccine may protect against different viruses from this year's vaccine. The yearly vaccine offers protection against the types of flu virus that are most likely to be circulating each winter.

Watch out for meningitis and septicaemia



Both meningitis and septicaemia are very serious. It is important that you recognise the signs and symptoms and know what to do when you see them. Early symptoms of meningitis and septicaemia may be similar to cold or flu (fever, vomiting, irritability and restlessness). However, individuals with meningitis or septicaemia can become seriously ill within hours, so it is important to know the signs and symptoms and get medical help urgently.

What is meningitis?

Meningitis is an infection of the lining of the brain. Meningitis can be caused by several types of bacteria or virus.

Infection with meningococcal bacteria can cause diseases such as meningitis, septicaemia (blood poisoning), pericarditis (inflammation of the lining of the sac that contains the heart) and arthritis (swelling of the joints). If you suspect meningitis, get help urgently.

What is septicaemia?

Septicaemia is a very serious condition in which the bloodstream becomes infected. The signs of cold hands and feet, pale skin, vomiting and being very sleepy or difficult to wake can come on quickly. If you develop septicaemia, get help urgently.

The signs and symptoms of meningitis and septicaemia are listed on pages 41 and 42. It is important to remember that not everyone will develop all the symptoms listed and they may appear in a different order. If an individual develops some of the symptoms listed, especially red or purple spots, get medical help urgently.

If you are still worried after getting advice from your GP or calling NHS 24 on **111**, trust your instincts and take your child to the emergency department of your nearest hospital.

In babies, the main symptoms of meningitis may include:

- a high-pitched moaning cry
- being irritable when picked up
- a bulging fontanelle (see glossary on page 49)
- feeling drowsy and not responding to you, or being difficult to wake
- being floppy and having no energy, or being stiff with jerky movements
- refusing feeds and vomiting
- skin that is pale, blotchy or turning blue
- a rash (see the 'glass test' explained on page 43)
- a fever.

In babies, the main symptoms of septicaemia may include:

- rapid or unusual patterns of breathing
- skin that is pale, blotchy or turning blue
- fever with cold hands or feet
- shivering
- vomiting and refusing feeds
- red or purple spots that do not fade under pressure (do the 'glass test' explained on page 43)
- pain or irritability from muscle aches or severe limb/joint pain
- floppiness
- severe sleepiness.

In older children, adolescents and adults, the main symptoms of meningitis may include:

- a stiff neck (check that they can touch their forehead with their knees)
- a very bad headache
- a dislike of bright lights
- vomiting
- a fever
- feeling drowsy, less responsive and confused
- a rash (see the 'glass test' explained on page 43).

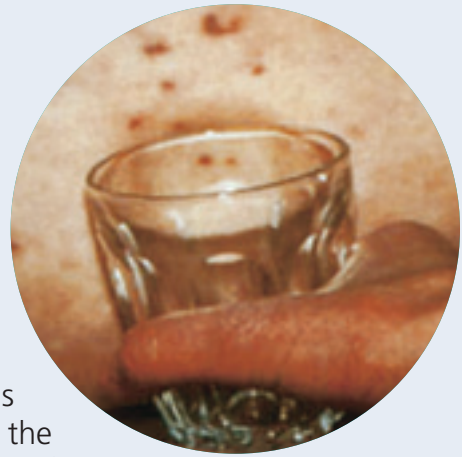
In older children, adolescents and adults the main symptoms of septicaemia may include:

- sleepiness, being less responsive, uninterested or confused (a late sign in septicaemia)
- severe aches and pains in the arms, legs and joints
- very cold hands and feet
- shivering
- rapid breathing
- red or purple spots that do not fade under pressure (do the 'glass test' explained on page 43)
- vomiting
- a fever
- diarrhoea and stomach cramps.

Where can I get more information?

If you have any questions or want more information, talk to your GP, practice nurse or health visitor, or call the NHS inform helpline on **0800 22 44 88** (textphone 18001 0800 22 44 88) for more information. The helpline is open every day 8 am to 10 pm and also provides an interpreting service.

The ‘glass test’



Firmly press the side of a clear drinking glass against the rash so that you can see if the rash fades and loses colour under pressure. If it doesn’t change colour, contact your GP immediately.

The spots and rash are more difficult to see on darker skin, so check paler areas such as the palms of the hands, soles of the feet and the area around the eyes. Any spots or rash might fade at first, so to be sure – keep checking.

Be aware, however, that the rash does not always appear.

If you suspect meningitis or septicaemia – get medical help urgently. Speak to your GP, call NHS 24 on **111** or take your child to the emergency department of your nearest hospital.

This information is also available at **www.immunisescotland.com/menc**

The following organisations also provide information on meningitis:

Meningitis Association of Scotland
Phone or fax: 0141 427 6698
www.menscot.org

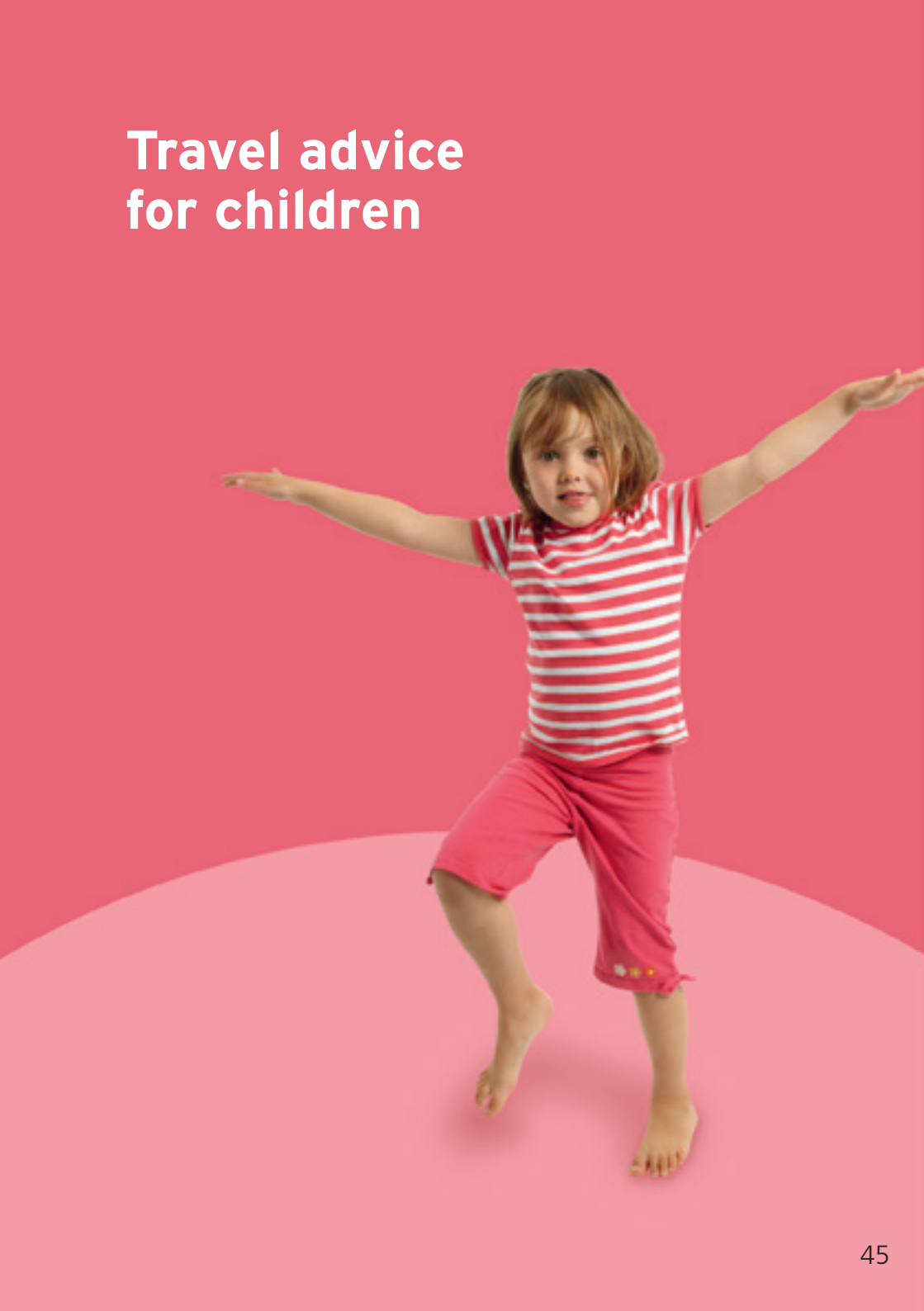
Meningitis Now
Free 24-hour helpline: 0808 80 10 388
www.meningitisnow.org

Meningitis Research Foundation
Free helpline: 080 8800 3344
Open 9 am to 10 pm Monday–Friday and
10 am to 8 pm on weekends and bank holidays.
www.meningitis.org

Trust your instincts.

If you are worried after getting advice, trust your instincts and take your child to the emergency department of the nearest hospital.

Travel advice for children



If your child is going abroad, make sure their routine immunisations are up to date. Your child may also need extra immunisations.

Contact your GP surgery or travel clinics well in advance (at least eight weeks) for up-to-date information on the immunisations your child may need. Information can also be found on the NHSScotland website, at **www.fitfortravel.nhs.uk**

Courses of most travel vaccines can be given over a four-week period, but more time will be needed if a primary (first) course of the DTaP/IPV/Hib vaccine has to be given. If you find that you have less time before departure, it is still worth attending a clinic to make sure you get as much protection as possible, as well as information about reducing the risks of ill health abroad.

Your child may need to be immunised against other diseases, such as yellow fever, and have an immunisation certificate as proof before they can enter some countries. The yellow fever immunisation certificate becomes valid and effective 10 days after the immunisation is given.

Watch out for malaria

Malaria is a serious infection that you can catch from mosquito bites. It can be a major problem in tropical countries. If you are travelling to an area where there is malaria, your child will need protection.

There currently isn't an immunisation against malaria, but your GP will be able to give you advice on taking anti-malarial drugs.

Anti-malarial drugs do not provide complete protection but are important when travelling to some parts of the world. They can be difficult to take, but some are now made especially for children.

Avoiding mosquito bites

You should do all you can to prevent your child from getting bitten by mosquitoes.

- During the day and night, use clothes that cover the arms and legs.
- Use insect repellent on the skin and a mosquito net soaked in insecticide.

Use an insect repellent suitable for children. Ask your pharmacist for advice.

For more information

You can get *Health Advice for Travellers*, an information leaflet produced by the Department of Health, from the Post Office or by contacting the Department of Health publications order line on **08701 555 455** at any time, quoting 'T7.1 Health Advice for Travellers'.

You can also get further information on the NHSScotland website **www.fitfortravel.nhs.uk**

Glossary of terms

This glossary describes some of the terms relevant to your child's immunisations.

Acellular pertussis vaccine

Whooping cough vaccine containing only parts of pertussis bacterial cells that can produce immunity in the person receiving the vaccine.

Anaphylactic reaction

An immediate and severe allergic reaction, which needs urgent medical attention.

DTaP/IPV vaccine or dTaP/IPV vaccine

A combined vaccine that protects against four different diseases – diphtheria, tetanus, pertussis (whooping cough) and polio. It contains either high-dose diphtheria vaccine (DTaP/IPV) or low-dose diphtheria vaccine (dTaP/IPV), tetanus vaccine, acellular pertussis vaccine and inactivated polio vaccine. It is given to young children from age 3 years 4 months as a booster vaccine.

DTaP/IPV/Hib vaccine

A combined vaccine that protects against five different diseases – diphtheria, tetanus, pertussis (whooping cough), polio and Haemophilus influenzae type b (Hib). It contains diphtheria vaccine, inactivated polio vaccine and Haemophilus influenzae type b vaccine.

Fontanelle

Space between the bones at the top of the baby's skull.

Hib/MenC vaccine

A combined vaccine that protects against Haemophilus influenzae type b (Hib) infections and meningococcal C (MenC) infections.

Immunisation

Immunisation is the act of giving a vaccine, usually by injection, to encourage your body's immune system to produce antibodies that will fight off a virus or bacteria. It may also be referred to as vaccination.

Inactivated polio vaccine

Polio vaccine made from viruses that have been killed.

MenC vaccine

A vaccine that protects against meningococcal C infections.

Neomycin

An antibiotic put into vaccines to prevent contamination by bacteria.

Pneumococcal conjugate vaccine (PCV)

A vaccine that protects against infections caused by 13 types of pneumococcal bacteria.

Polymyxin B

An antibiotic put into vaccines to prevent contamination by bacteria.

Rotavirus vaccine

A vaccine that protects against the rotavirus infection.

Streptomycin

An antibiotic put into vaccines to prevent contamination by bacteria.

Td/IPV vaccine

A combined vaccine that protects against three different diseases – tetanus, diphtheria and polio. It contains tetanus vaccine, low-dose diphtheria vaccine and inactivated polio vaccine. It is given to young people aged 13 to 18 years to top up their levels of protection against these three diseases.

Toxoid

An inactivated bacterial toxin that stimulates an immune response when used in a vaccine.

Vaccine Damage Payment Scheme

Most immunisations are given without any trouble at all, but very rarely there may be problems. The Vaccine Damage Payment Scheme is designed to ease the present and future burdens of people affected by the immunisation and their family. It covers all the vaccines described in this booklet except hepatitis B vaccine. There are several conditions that need to be met before payment can be made. If you need more information, please contact:

Vaccine Damage Payment's Unit
Department for Work and Pensions
Palatine House
Preston PR1 1HB
Phone: 01772 899 944 (textphone 0845 604 5312)
Email: CAU-VDPU@dwp.gsi.gov.uk

Further advice

If you want more information on immunisation, speak to your GP, practice nurse or health visitor, or call the NHS inform helpline on **0800 22 44 88** (textphone 18001 0800 22 44 88). The helpline is open every day 8 am to 10 pm and also provides an interpreting service.

This information is also available at **www.immunisationscotland.org.uk**

This publication is available online at **www.healthscotland.com** or telephone **0131 314 5300**.

Traditional Chinese

您也可以登入 **www.healthscotland.com** 瀏覽本刊物，或撥打 **0131 314 5300** 查詢。

Polish

Ta publikacja jest dostępna online na stronie **www.healthscotland.com** lub pod numerem telefonu **0131 314 5300**, pod którym można także zgłaszać wszelkie zapytania.

Urdu

یہ اشاعت آن لائن **www.healthscotland.com** پر دستیاب ہے
یا کسی سوالات کے لیے **0131 314 5300** پر ٹیلی فون کریں۔

This resource is available in Urdu, Chinese and Polish, and in an Easy Read format. NHS Health Scotland is happy to consider requests for other languages and formats. Please contact **0131 314 5300** or email **nhs.healthscotland-alternativeformats@nhs.net**

Routine Childhood Immunisation Programme

All immunisations are given as a single injection into the muscle of the thigh or upper arm, except rotavirus, which is given by mouth (orally) and flu, which is given as a nasal spray.

When to immunise	Diseases protected against	Vaccine given
2 months old	• Diphtheria, tetanus, pertussis (whooping cough), polio and Haemophilus influenzae type b (Hib)	• DTaP/IPV/Hib
	• Pneumococcal disease	• PCV
	• Rotavirus	• Rotavirus vaccine
3 months old	• Diphtheria, tetanus, pertussis, polio and Hib	• DTaP/IPV/Hib
	• Meningococcal group C disease (MenC)	• MenC
	• Rotavirus	• Rotavirus vaccine
4 months old	• Diphtheria, tetanus, pertussis, polio and Hib	• DTaP/IPV/Hib
	• Pneumococcal disease	• PCV
Between 12 and 13 months old – within a month of the first birthday	• Hib/MenC	• Hib/MenC
	• Pneumococcal disease	• PCV
	• Measles, mumps and rubella (German measles)	• MMR
2 to 11 years – annually	Influenza (flu)	• Flu vaccine
3 years 4 months old or soon after	• Diphtheria, tetanus, pertussis and polio	• dTaP/IPV or DTaP/IPV
	• Measles, mumps and rubella	• MMR (check first dose has been given)
Girls aged 11 to 13 years old	• Cervical cancer caused by human papillomavirus (HPV) types 16 and 18	• HPV vaccine
Around 14 years old	• Tetanus, diphtheria and polio	• Td/IPV, and check MMR status
	• MenC	• MenC

www.immunisationscotland.org.uk

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