Childhood vaccines

Read this leaflet for trusted information about vaccines offered as part of the routine immunisation programme in Scotland.

Protect your child from serious diseases

Public Health Scotland

Healthier Scotland
Scottish Government

NHS SCOTLAND

Did you know?

All vaccines in the immunisation programme are provided free in Scotland by the NHS.

- **You will receive a letter from the NHS inviting your child to each vaccination.**
- **It's important to bring your child to every appointment to help protect them from serious diseases.**
- **We talk about your 'health professional' throughout this leaflet – this can be a midwife, health visitor, vaccinator, nurse, GP or any other specialist involved in your child's healthcare.**

You might find it helpful to keep this leaflet with your child's Red Book.

Vaccines have been trusted around the world for over 50 years.

Since 1974, vaccines have saved 154 million lives and have reduced infant deaths by 40%. More children now live to see their first birthday and beyond than at any other time in human history.

Vaccines are available to prevent more than 30 life-threatening diseases, helping people live longer, healthier lives. They reduce the risk of getting a disease by working with your body's natural defences to build protection.

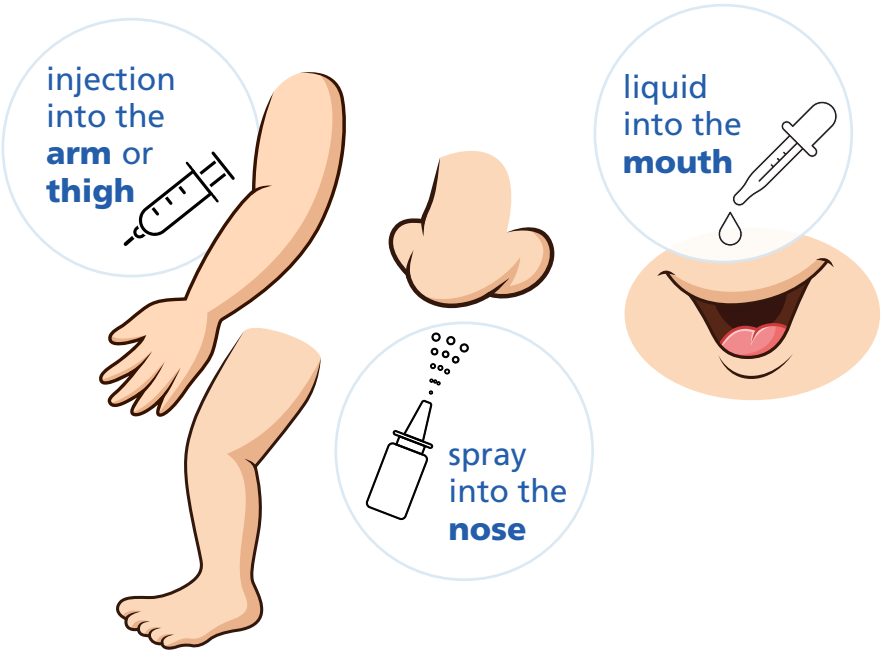
How vaccines work

Vaccines work by helping the body's immune system to make **antibodies**. If your child comes into contact with the infection, the antibodies recognise the infection and help protect your child.

Antibodies: substances that fight off infection.

Vaccines contain either a very weak form of the bacterium (another word for germ) or virus that causes a disease, or a small part of it.

Vaccines are given in different ways – usually by injection (a jab or jag) into the arm or thigh, but some are given as a nasal (nose) spray or as an oral liquid (by mouth).



Vaccine doses

A dose means each time the vaccine is given. It's important that your child gets all the recommended doses for each vaccine.

Most vaccines have to be given more than once to increase your child's immunity and provide longer-term protection against serious diseases.

Vaccine safety

All medicines (including vaccines) are tested for safety and **efficacy** before they're allowed to be used. Once they're in use, the safety and **effectiveness** of vaccines continues to be carefully monitored.

Efficacy: how well a vaccine prevents illness during testing.

Effectiveness: how well a vaccine prevents illness once it's being used within a population.

Look for the Vaccine Safety Net logo, which means information on vaccine safety is reliable and part of a global network of websites, checked by the World Health Organization.

Can every child be vaccinated?

There are very few reasons why children cannot be vaccinated.

Certain vaccines should not be given to children who have had a confirmed anaphylactic reaction (see page 30) to a previous dose or to any ingredients of a vaccine.

Generally, any child with a weakened immune system should not have live vaccines, such as MMR and, in rare cases, the rotavirus vaccine. Children's immune systems can be weakened by:

- treatment for serious conditions, such as a transplant or cancer
- having a condition that affects the immune system, such as severe primary immunodeficiency
- taking treatment that weakens the immune system.

Let your health professional know if your child has had a previous anaphylactic reaction to a vaccine or any vaccine ingredients, or has a weakened immune system. They'll be able to help you.

Allergies

Asthma, eczema, hay fever, food intolerances and most other allergies should not prevent your child having most of the vaccines in the immunisation programme.

Having a mild allergic reaction to a vaccine does not mean your child should stop having vaccinations.

Let your health professional know if your child has had a severe reaction to anything.

Use trusted sources

After reading this leaflet, you may have questions or feel you need more information. Finding information that's reliable and accurate can sometimes be tricky, but there are trusted sources available.

- Talk to a health professional (for example your doctor or nurse) or get in contact with your local NHS immunisation team. You can find their details at **www.nhsinform.scot/gettingvaccinations**
- For trusted online information, NHS inform has up-to-date information on vaccines at **www.nhsinform.scot/immunisation**

Your child's **vaccination j**

8 weeks	12 weeks	16 weeks
Six-in-one	Six-in-one	Six-in-one
Rotavirus	Rotavirus	Pneumococcal
MenB	MenB	

ourney

12–13 months

- MenB
- Pneumococcal
- MMR

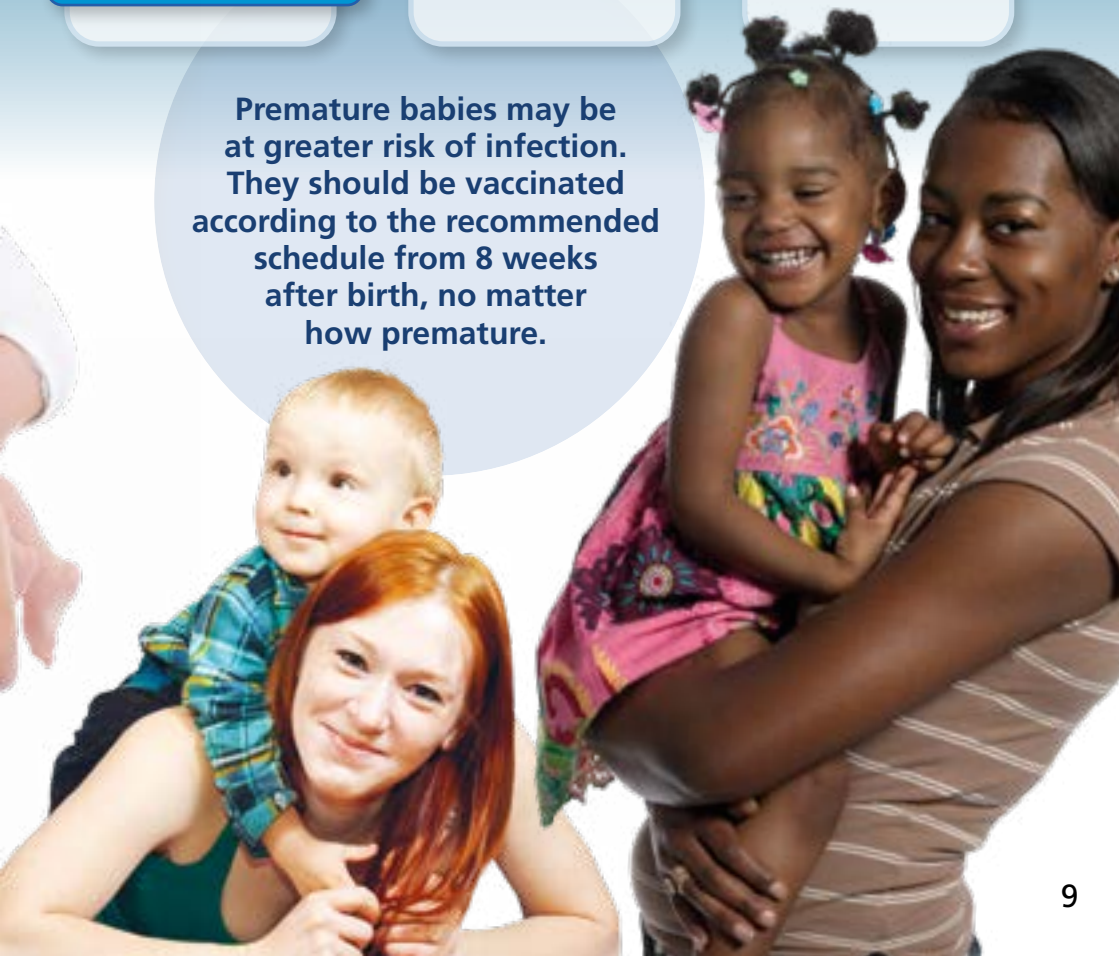
18 months

- Six-in-one
- MMR

3 years 4 months

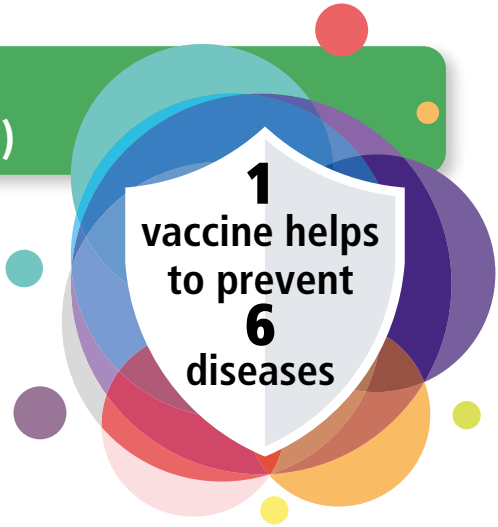
- Four-in-one

Premature babies may be at greater risk of infection. They should be vaccinated according to the recommended schedule from 8 weeks after birth, no matter how premature.



Vaccines and the diseases

The six-in-one (DTaP/IPV/Hib/HepB)



This vaccine is given as an injection and is usually offered to babies at 8, 12 and 16 weeks of age, and again at 18 months.

This vaccine protects your baby against the following six diseases:

Diphtheria begins with a sore throat and can quickly cause breathing problems. It can damage the heart and nervous system and, in severe cases, can be life threatening. Diphtheria germs are spread from person to person through coughs, sneezes and close contact.

Tetanus affects the nervous system, leading to muscle spasms and breathing problems. It can also be life threatening. It's caused when germs found in soil and manure get into the body through open cuts or burns. Tetanus cannot be passed from person to person.

s they **protect against**

Pertussis (whooping cough) can cause long periods of coughing and choking, making it hard to breathe. It can last up to 3 months. Young babies under 6 months of age are at an increased risk of life-threatening complications from this disease. Whooping cough is spread through the air when people with the disease cough or sneeze.

You may have had the whooping cough vaccine in pregnancy. This protects your baby in the first weeks of life, but they need their own vaccine at 8 weeks to continue their protection.

Polio is caused by a virus that attacks the nervous system. It can permanently paralyse muscles and can be life threatening if it affects the chest muscles or brain. The polio virus is spread from person to person through coughing and sneezing, through contact with poo from someone with the infection, or by swallowing contaminated food or water.

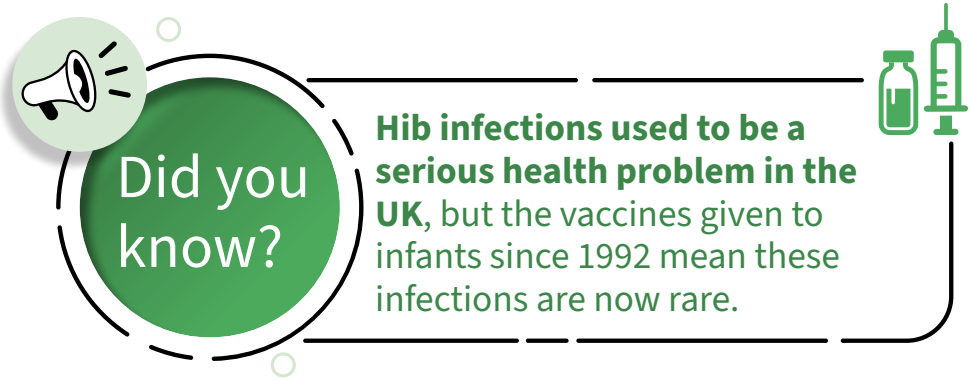
Did you know?

Polio has been largely wiped out in most parts of the world due to the success of routine vaccination programmes.

Haemophilus influenzae type b (Hib) can lead to septicaemia (blood poisoning), pneumonia (infection of the lungs) and meningitis (infection of the lining of the brain). These conditions can kill if not treated quickly.

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

The Hib vaccine helps protect your baby against meningitis caused by Hib. It does not protect against any other types of meningitis.



Hepatitis B (HepB) virus infects the liver. Many people with HepB infection have no signs and do not know they're infected. Others have flu-like symptoms and yellowing of the skin (jaundice). HepB in children can continue to affect them for years and may cause serious liver damage over time.

HepB is spread when bodily fluids infected with the HepB virus enter the body of a person who is not infected.

For more information, visit www.nhsinform.scot/6in1

The pneumococcal vaccine

This vaccine is given as an injection and is offered at 16 weeks, and between 12 and 13 months of age.

Pneumococcal infection is a common cause of meningitis. It can also lead to ear infections, pneumonia and other serious illnesses.

At any time, around 50% of children are carrying pneumococcal germs in their nose and throat, constantly passing them round by coughing, sneezing and having close contact.

The pneumococcal vaccine provides protection against meningitis caused by pneumococcal infection. It does not protect against any other types of meningitis.

Some children with a health condition may need another pneumococcal vaccine when they're over 2 years of age. Your health professional will be able to explain this.

Vaccines work

Studies show that the pneumococcal vaccine is very effective at protecting babies against one of the most common causes of meningitis, and against conditions such as severe ear infections and pneumonia.

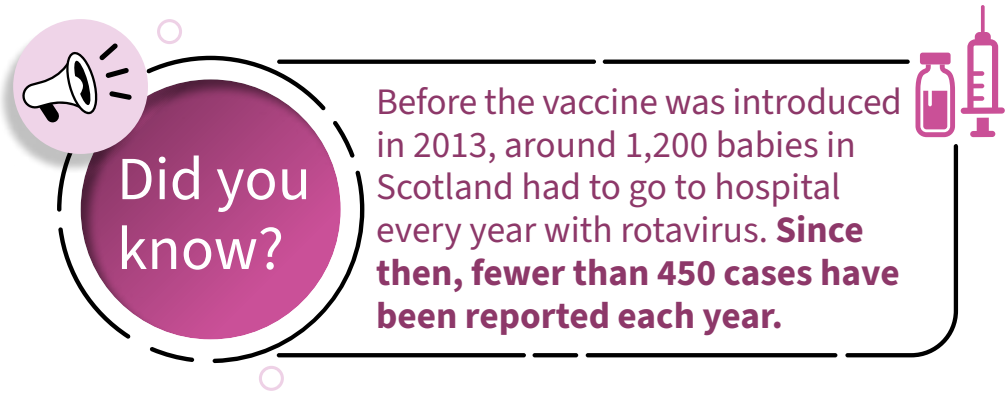
For more information, visit
www.nhsinform.scot/pneumococcalforchildren

The rotavirus vaccine

This vaccine is given by mouth as a liquid and is a live vaccine. To get the best protection, your baby should get two rotavirus vaccinations, 4 weeks apart. The first is offered when your baby is 8 weeks and the second at 12 weeks of age.

Rotavirus infects the gut (tummy), causing severe diarrhoea (watery poo) and sickness which can lead to dehydration (loss of water from the body). Dehydration can be very dangerous for babies and young children and some may need hospital treatment. For more information, visit **www.nhsinform.scot/dehydration**

The virus spreads easily by hand-to-mouth contact and can be picked up from surfaces with the virus on them. Rotavirus can also be spread through tiny droplets in the air from coughing.



People whose immune systems are severely weakened because of a health condition or treatment should be extra careful when they come into close contact with a baby for 2 weeks after the rotavirus vaccine was given.

For more information, visit www.nhsinform.scot/rotavirus

What to look out for after your child has the rotavirus vaccine

Some babies may have mild diarrhoea and may seem irritable. In very rare cases, it can affect the baby's lower gut. They may have tummy pain, be sick and pass what looks like redcurrant jelly in their nappies. You should call your GP or **NHS 24** free on **111** straight away if this happens.

The rotavirus vaccine should not be given to babies who have:

- had a serious allergic reaction (anaphylaxis) to a previous dose of the vaccine or an ingredient in the vaccine
- a rare condition that affects the immune system called severe combined immunodeficiency (SCID)
- had a bowel blockage (intussusception) in the past or have a problem with their gastrointestinal tract which may make them more likely to develop a bowel blockage
- rare conditions called fructose intolerance, glucose-galactose malabsorption or sucrase-isomaltase insufficiency.

Your baby must get the first dose of the vaccine before 15 weeks of age and the second dose before 24 weeks.

Speak to your health professional as soon as possible if your child misses either rotavirus vaccination appointment.

The meningococcal B (MenB) vaccine

This vaccine is given as an injection and is offered to all babies at 8 weeks, 12 weeks, and between 12 and 13 months of age.

MenB infection is the cause of most cases of bacterial meningitis (infection of the lining of the brain) and septicaemia (blood poisoning) in babies and young children in Scotland. These are both very serious conditions. MenB germs are spread through coughing, sneezing and close contact.

The vaccine can also help protect against other kinds of meningococcal disease not caused by MenB.

Be aware of symptoms

Early symptoms may be similar to a cold or flu, but children with meningitis or septicaemia can become seriously ill within hours.

Visit **www.meningitis.org** to use a symptom checker.

Get medical advice as soon as possible if you're concerned about symptoms. Contact your GP or call NHS 24 free on 111 out of hours, or go to the emergency department of your nearest hospital.

For more information, visit www.nhsinform.scot/meningitis

Before your child's MenB vaccine

Fever is more likely after the MenB vaccine is given at 8 and 12 weeks with the other vaccines.

It's important that a total of three doses of infant paracetamol are given to babies to reduce the chances of fever.

Paracetamol dose for an 8-week and 12-week-old baby

Dose 1
to be given just before or just after their immunisations

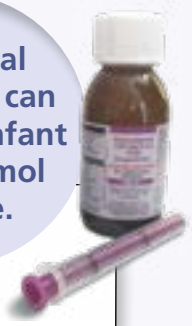
Dose 2
4–6 hours after dose 1

Dose 3
4–6 hours after dose 2

IMPORTANT

Read the instructions on the product packaging and patient information leaflet very carefully.

Your local pharmacy can give you infant paracetamol for free.



For very premature babies (born before 32 weeks) weighing less than 4 kg, a health professional should prescribe the paracetamol according to the baby's weight at the time of vaccination. Follow the instructions on the prescription.

For more information, visit www.nhsinform.scot/menb

The measles, mumps and rubella (MMR) vaccine

The MMR vaccine is given as an injection and is routinely offered to all children at 12 to 13 months. For children who are born on or after 1 July 2024, a second dose will be offered at 18 months. MMR is a live vaccine. It's important that your child gets the recommended two doses of the MMR vaccine when invited.

Some children require an additional MMR vaccine before 12 months of age due to travel or if they have been in contact with someone with measles. These children should still get both recommended doses when invited.

Measles is a very infectious virus that causes a fever, cold-like symptoms and a rash. It spreads easily through the air when people with the virus cough or sneeze and can cause serious complications, such as pneumonia and encephalitis (inflammation of the brain). In very serious cases, measles can be life threatening.

Did you know?

The MMR vaccine is highly effective and has been shown to be very safe. It's been protecting children, young people and adults in Scotland since 1988.

Mumps is caused by a virus and leads to fever, headache and painful, swollen glands at the side of the face, neck and jaw. The virus can cause permanent deafness, viral meningitis and encephalitis.

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

Rubella (German measles) is caused by a virus. It's usually mild in children and can go unnoticed, causing a short-lived rash, swollen glands and a sore throat.

For unborn babies, rubella is very serious. It can damage their sight, hearing, heart and brain in a condition called congenital rubella syndrome (CRS).

Most cases of rubella are now caught while abroad, but several have occurred in the UK. Rubella is spread in the same way as measles and mumps and is very infectious.

There are very few reasons why a child should not get the MMR vaccine. However, any child with a weakened immune system – or who is on medicine that could affect their immune system – should not get the vaccine. Speak to your health professional for further advice.

One of the MMR vaccines used in Scotland contains pork gelatine, which is used in a wide range of medicines. Pork gelatine is used in some vaccines to make sure the vaccine remains safe and effective during storage. Many faith groups, including Muslim and Jewish communities, have approved the use of vaccines containing gelatine.

If you do not accept the use of pork gelatine in medical products, speak to your health professional before you attend your child's vaccination appointment. Other MMR vaccines are available – the choice is yours.

What to look out for after the MMR vaccine is given

Like all medicines, the MMR vaccine can cause side effects. This is normal but not everyone gets them.

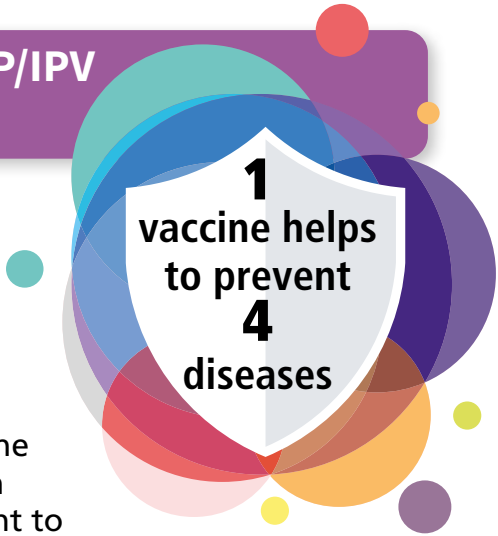
Your child may experience:

- a mild rash that develops 7 to 11 days after vaccination (this rash is not infectious)
- a fever that develops a week or two after the vaccine and lasts 1 to 3 days
- swollen glands around the neck, cheeks and jaw that develop 2 to 3 weeks later
- sore or stiff joints that develop 2 to 3 weeks later and can last from a couple of days to a few weeks.

A very small number of immunised children may have a fit caused by the fever called a 'febrile convulsion' or 'febrile seizure'. If your child has a fit, phone **999**.

For more information,
visit www.nhsinform.scot/MMR

The four-in-one (DTaP/IPV or dTaP/IPV) vaccine



This vaccine is given as an injection and offered to children aged from 3 years 4 months.

Diphtheria, tetanus, pertussis (whooping cough) and polio were covered in the six-in-one vaccine section on pages 10–13. You might want to look at these pages again to see what these diseases are, what risks they bring and how they're spread.

Did you know?

Before the diphtheria vaccine was introduced, there were up to 70,000 cases in the UK each year. Since 2021, there have been only three cases reported in Scotland.

For more information, visit www.nhsinform.scot/4in1

Vaccines for babies who need extra protection

The vaccines below are not part of the routine immunisation programme, but your child may need them in certain circumstances.

- The Bacillus Calmette-Guérin (BCG) vaccine helps protect against tuberculosis (TB).
- The hepatitis B vaccine helps protect against hepatitis B.
- The flu vaccine helps protect against flu.
- The COVID-19 vaccine helps protect against COVID-19.

For more information, and to find out if your child is eligible for these vaccines, please visit **www.nhsinform.scot/immunisation** or speak to your health professional.

Your child may also need vaccines if you plan to travel abroad. For more information, visit **www.fitfortravel.nhs.uk**

Before vaccination

Vaccination appointments

You will receive a letter from the NHS inviting you to bring your child for each vaccination. If you need to rearrange your child's appointment, call the number on their invitation letter or visit **www.nhsinform.scot/gettingvaccinations** for contact details of your local immunisation team.

If you move home, let your GP surgery know your new address in good time to make sure you receive your child's invitations.

If your child misses an appointment, you can arrange a new one. It is recommended that your child gets their vaccines as soon as possible, as some vaccines have an upper age limit, such as the rotavirus vaccine.

If you cannot attend your child's vaccination appointment, you can give permission for another adult to bring your child. There will be information about how to do this in your appointment letter. The vaccinator needs to be sure that you have given your consent for your child to be vaccinated.

On the day

What to do if your child is ill on the day of their appointment

If your child has a minor illness without a fever, like a cold, they should have the vaccination as normal.

If your child is ill with a fever, delay the vaccinations until they have recovered. Otherwise, the fever might wrongly be linked to a vaccine.

Dress your child in practical clothing that's easy to get off and on.

Helpful hints

- It's a good idea to feed your baby before the vaccination appointment if you can as this may help settle them.
- It might be useful to take your child's favourite toy or blanket with you.
- Make sure your child is wearing practical clothing that's easy to get off and on as most vaccinations are given to younger babies by injection in the thigh. Short sleeves are a good idea for older children as they usually get vaccines in their upper arm.
- If you have a fear of needles and feel anxious yourself, try to stay calm and show your child they have nothing to fear.

If your child is a little older, you can explain in simple words that vaccination is a good thing that will help them stay well and not become ill.

Side effects

As with all medicines, there may be side effects after vaccination, 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 can have a fever, be a bit irritable or feel unwell. You can give them infant paracetamol. Read the instructions on the packaging carefully and give your child the correct dose for their age. If necessary, give them a second dose 4 to 6 hours later.

Remember, never give medicines that contain aspirin to children under 16.

You can also read the leaflet **What to expect after immunisation: babies and children up to 5 years**, which you'll be given after your child's vaccination.

Fever after a vaccine

A baby or child is generally considered to have a fever if their temperature is 38°C or higher. Fevers are quite common in young children but are usually mild. If your child's face feels hot to touch and looks red or flushed, they may have a fever. You can check their temperature with a thermometer.

Sometimes, fever following vaccination can cause a febrile seizure or febrile convulsion (a fit). Most children recover fully. A fit that occurs a short time after vaccination might not have been caused by the vaccine or the fever. It could be due to a health condition.

If your child has a fit after a vaccination, call **999** immediately. You should also contact your GP, who may refer you to a specialist for advice about further tests and future immunisations.

If your child's side effects seem to get worse or if you're concerned, trust your instincts and call your GP or NHS 24 free on 111 and tell them about your child's vaccination. This is so they can assess your child properly.

Call if, at any time, your child has a temperature of:

38°C or above and is under 3 months of age

39°C or above and is over 3 months of age.

Vaccinations and allergic reactions

Rarely, children can have a mild allergic reaction – which could cause a rash or itch affecting part or all of the body – soon after the immunisation.

For every million children who get a vaccine, less than one will have an anaphylactic reaction.

Even more rarely, children can have a severe allergic reaction (anaphylaxis) within a few minutes of the vaccination, where they have breathing difficulties and collapse. Vaccinators are trained to deal with anaphylactic reactions and children recover completely with treatment.

If you have any questions or concerns, please speak to your health professional.

Reporting side effects

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

- visiting **www.mhra.gov.uk/yellowcard**
- using the Yellow Card app
- calling **0800 731 6789**.

When to immunise	Diseases protected against	Vaccine given
8 weeks old and 12 weeks old	• Diphtheria, tetanus, pertussis (whooping cough), polio, Haemophilus influenzae type b (Hib) and hepatitis B (HepB)	• Six-in-one
	• Rotavirus	• Rotavirus
	• Meningococcal group B (MenB)	• MenB
16 weeks old	• Diphtheria, tetanus, whooping cough, polio, Hib and HepB	• Six-in-one
	• Pneumococcal disease	• Pneumococcal
Between 12 and 13 months old – within a month of the first birthday	• Measles, mumps and rubella (German measles)	• MMR
	• Meningococcal group B (MenB)	• MenB
	• Pneumococcal disease	• Pneumococcal
18 months	• Diphtheria, tetanus, whooping cough, polio, Hib and HepB	• Six-in-one
	• Measles, mumps and rubella (German measles)	• MMR
3 years 4 months old or soon after	• Diphtheria, tetanus, whooping cough and polio	• Four-in-one

Correct at the time of printing, but subject to change. For the most up-to-date timetable visit: **www.nhsinform.scot/immunisation**


Translations


Easy read


BSL


Audio


Large print


Braille

For more information, including other formats and translation support:

www.nhsinform.scot/immunisation

phs.otherformats@phs.scot

Information correct at time of publication.
Please visit **www.nhsinform.scot/immunisation** for the most up-to-date information.

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