

Pre-school immunisations

A guide to vaccinations
for 3- to 5-year-olds



The complete routine childhood immunisation programme

These booklets describe the immunisations offered to your child during the first 18 years of their life.



1 A guide to immunisations up to 13 months of age

Covers all the immunisations up to 13 months but describes in detail those at 2, 3 and 4 months.

2 Immunisations at 12 and 13 months of age

A reminder leaflet to get your child immunised at 12 and 13 months.

3 Pre-school immunisations – a guide to vaccinations for 3- to 5-year-olds

Details of the immunisations for your child at 3 to 5 years of age before they start school.

4 Teenage immunisations – your questions answered

Describes the teenage immunisations at 13 to 18 years.

The complete routine immunisation programme is shown in detail on the back cover of this leaflet.

Copies of these booklets are available from your clinic or doctor's surgery. See also www.immunisation.nhs.uk

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Routine childhood immunisation programme – a quick reference guide to your child's immunisations



Introduction

This guide is for parents or guardians of children aged three to five years old. It provides information on the routine immunisations that are given to children before they start school 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 pre-school immunisation.

If you have more questions or you want more information, talk to your doctor, practice nurse or health visitor.

You can also visit www.immunisation.nhs.uk or call NHS Direct on 0845 4647.



Timetable of pre-school immunisations

These immunisations are due about three years after your child has completed the immunisations they had when they were two, three and four months old. You will receive an appointment for you to bring your child for their pre-school immunisations.

The table below shows the pre-school immunisations your child will be offered. These immunisations will make sure that your child has the best protection against serious childhood diseases as they grow up.

Vaccine	How it is given	Comments
Diphtheria, tetanus, pertussis (whooping cough) and polio (dTaP/IPV or DTaP/IPV)	One injection	This is a booster dose of the vaccine your child had as a baby, but without the Hib part.
Measles, mumps and rubella (MMR)	One injection	This is a second dose of the MMR vaccine. (If your child has not had the first dose yet, it should be given now and they should have their second dose in three months' time.)

Common questions about pre-school immunisations

Why does my child need to be immunised at this age?

Protection (immunity) against diphtheria, tetanus, whooping cough and polio can fade over time. Also, immunity to measles, mumps and rubella may not develop after a single dose of the MMR vaccine. The pre-school immunisations – often called pre-school boosters – will top up your child’s level of antibodies (the substances our bodies produce to fight off disease and infection) and help to keep them protected.

When you take your child for their pre-school immunisations, you will have the chance to make sure their other immunisations are up to date.

How do vaccines work?

Vaccines contain a small part of the bacterium or virus that causes a disease, or tiny amounts of the chemicals the bacterium produces. Vaccines work by causing the body’s immune system to make antibodies. 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 polio have disappeared from this country.

If your child missed any of their immunisations as a baby or toddler, this is a good time to ask the surgery or clinic about catch-up doses. It is never too late to have your child immunised. You don't have to start the course of immunisations from the beginning again but you can catch up on them and make sure your child is fully protected.

How do we know that vaccines are safe?

Before a vaccine is allowed to be used, its safety and effectiveness have to be thoroughly tested. After they have been licensed, the safety of vaccines continues to be monitored. Any rare side effects that are discovered can then be assessed further. All medicines can cause side effects, but vaccines are among the very safest. Research from around the world shows that immunisation is the safest way to protect your child's health.



Do these vaccines contain thiomersal?

No. These pre-school vaccines do not contain thiomersal. Thiomersal is a mercury-based preservative (see the glossary on page 27).

We don't hear about most of these diseases any more, so are these immunisations really necessary?

Since immunisation was introduced in the UK, the number of children catching these diseases is low. But if children do not continue to be immunised, the diseases will come back, as seen with the recent high numbers of measles and mumps cases. The diseases are still around in Europe and parts of the world and, as people travel more, and more people come to visit this country, there is always a risk that the diseases will be brought into the country and your child will catch them.

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 get a fever. You can treat the fever by giving your child 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. If your child's temperature is still high after they have had a second dose, speak to your doctor or call **NHS Direct on 0845 4647**.

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

I'm worried that my son may have allergies. Can he have the vaccine?

Yes. Asthma, eczema, hay fever, food intolerances and allergies do not prevent your child having any vaccine in the routine childhood immunisation programme. If you have any questions, speak to your doctor, practice nurse or health visitor.

Are some children allergic to vaccines?

Very rarely, children can have an allergic reaction soon after immunisation. This may be a rash or itching affecting part or all of the body. The doctor or nurse giving the vaccine will know how to treat this. It is not a reason to withhold further immunisations.

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.

An anaphylactic reaction is a severe and immediate allergic reaction that needs urgent medical attention.

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

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

- a confirmed anaphylactic reaction to a previous dose of the vaccine, or
- a confirmed anaphylactic reaction to neomycin, streptomycin, or polymyxin B (antibiotics that may be added to vaccines in very tiny amounts).

There are no other medical reasons why these vaccines should not be given. If you are worried, talk to your health visitor, practice nurse or doctor.

What about the MMR vaccine? Are there any other reasons why my child should not receive this vaccine?

MMR is a live attenuated vaccine (that is, it contains live viruses that have been weakened). 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, or
- who have any condition which affects the immune system, such as severe primary immunodeficiency.

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

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, put off the immunisation until the child has recovered. This is to avoid the fever being associated with the vaccine, or the vaccine increasing the fever your child already has.

If your child:

- has a bleeding disorder, or
- has had a fit not associated with fever

Speak to your doctor, practice nurse or health visitor before your child has any immunisation.



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 commonest type of fit is caused by fever (this may be called a febrile seizure or febrile convulsion). Sometimes immunisation is 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 doctor who may refer you to a specialist for advice about further investigations and future immunisations.

If the surgery is closed or if you can't contact your doctor, go straight to the emergency department of your nearest hospital.

Immunisations for pre-school children

dTaP/IPV or DTaP/IPV vaccine

Booster given at 3 years 4 months or soon after

This vaccine boosts the immunisations that were given to your child at two, three and four months of age. It protects against diphtheria, tetanus, pertussis (whooping cough) and polio.

What is diphtheria?

Diphtheria is a serious disease that usually begins with a sore throat and can quickly develop to cause breathing problems. It can damage the heart and nervous system and, in severe cases, it can kill.

What is tetanus?

Tetanus is a disease affecting the nervous system which can lead to muscle spasms, 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.

What is 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 ten weeks. It is not usually so serious in older children, but it can be very serious and it can kill babies under one year old.

What is polio?

Polio is a virus that attacks the nervous system which can cause permanent paralysis of the muscles. If it affects the chest muscles or the brain, polio can kill.

How effective are these pre-school vaccines?

Studies have shown that the vaccines are very effective. The booster will not only protect your child, it will also prevent the infections from being passed on to babies who are too young to have had all of their immunisations.

Are there any side effects from these vaccines?

Your child may have some redness, swelling or tenderness where they had the injection, but this will usually disappear in a few days. A hard lump may appear in the same place but this will also go, usually over a few weeks. Occasionally, children may be unwell and irritable and develop a temperature, headache, sickness and swollen glands.

What is 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 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 available for use in the pre-school 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, so it doesn't matter which one your child has for their pre-school booster.

MMR vaccine

Second dose given pre-school

The MMR vaccine protects against measles, mumps and rubella.

What is measles?

Measles is caused by a very infectious virus. Nearly everyone who catches it will have a high fever, a rash and generally be unwell. Children often have to spend about five days in bed and may be off school for ten 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 one in every 15 children. The complications include chest infections, fits, diarrhoea, encephalitis (infection of the brain), and brain damage. Measles can kill.

How is it spread?

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's so infectious, the chances are your child will get measles if he or she is not protected.



What is 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. Rarely, it causes painful swelling of the testicles in males and the ovaries in females. Mumps lasts about seven to ten days.

How is it spread?

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

What is 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 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 up to nine out of ten cases. In many of the cases, pregnant women caught rubella from their own, or their friends', children.

How is it spread?

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

How effective is the MMR vaccine?

Before the MMR vaccine was introduced, mumps was the most common cause of viral meningitis in children under 15. It led to 1200 people going into hospital each year. If children aren't immunised with the MMR vaccine, they are at risk of getting mumps.

In each of the five years before the MMR vaccine was introduced, there were around 43 cases of congenital rubella syndrome. In recent years, there has been an average of fewer than two cases every year. All but one of these cases was caught abroad. The one case caught in the UK was linked to an outbreak of rubella that began in this country after someone caught the disease abroad. It is important that all children (boys and girls) are protected against rubella to prevent the number of cases increasing.

Even though measles and mumps were uncommon in the UK, children who were not immunised were 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 circulate. However, immunisation levels 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.

If your child has not had an MMR vaccination before, they should have the first dose now and the second dose after three months.

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 side effects from the second (pre-school) dose of the MMR vaccine?

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

The three different viruses in the vaccine act at different times and can produce the following side effects.

- Six to ten days after the immunisation, about one in ten children may develop a mild fever and some develop a measles-like rash and go off their food. This can happen when the measles part of the vaccine starts to work, and is normal.
- About one in every 1000 immunised children may have a fit caused by a fever. This is called a 'febrile convulsion', and can be caused by any fever. However, if a child who has not been immunised gets measles, they are five times more likely to have a fit.
- 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 vaccination. This is usually caused by the measles or rubella parts of the vaccine. If you see spots like these, take your child to the doctor 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 MMR vaccine, although there is very little evidence that it is caused by the vaccine. However, if a child catches measles, the chance of developing encephalitis is about one in 1000.

Your doctor or practice nurse will be able to discuss these issues in more detail.

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 had a severe allergy (anaphylactic reaction) to egg. If you have any concerns, talk to your practice nurse, health visitor or doctor.

A few years ago, some people said that the MMR vaccine could cause autism and bowel disease. How do I know that MMR is truly safe?

There have been many stories in the media suggesting a link between the MMR vaccine and autism and bowel disease. Independent experts from around the world looked very carefully at this possibility and there is no credible scientific evidence of a link between MMR and autism or bowel disease – and there is a lot of research that shows there is no link. The MMR vaccine has been used in over 100 countries and it has an excellent safety record. If you want more information, ask your health visitor, practice nurse or doctor for a copy of the MMR leaflet or look on the website www.nhs.uk/mmr.

Wouldn't it be better for my child to have MMR in separate vaccines?

No. The World Health Organization advises against giving separate vaccines. No country in the world recommends single vaccines when MMR is available. Giving the vaccines separately leaves children at risk of catching measles, mumps or rubella between the three injections. There is no evidence that single immunisations are safer than the MMR vaccine.

Pre-school immunisations give your child the best protection before they start school. If your child has missed any immunisations, they can have them now. Talk to your doctor, practice nurse or health visitor.

Remember, these will be the last routine immunisations your child will receive before the final set of booster immunisations given to them as teenagers.



Watch out for meningitis and septicaemia

What are meningitis and septicaemia?

Meningitis is infection of the lining of the brain. The same germs that cause meningitis may cause septicaemia (blood poisoning). Both meningitis and septicaemia are very serious in young children and the signs can come on quickly. If you suspect meningitis or septicaemia get help urgently.

Although your child was immunised as a baby against Hib, meningitis C and some forms of pneumococcal bacteria, all of which cause meningitis and septicaemia, these vaccines will not protect them against other types of meningitis and septicaemia. So it's important to know the signs and symptoms.

What are the signs and symptoms of meningitis and septicaemia?

Early symptoms of meningitis and septicaemia are mild and they are similar to the symptoms of flu (for example, a fever, vomiting, being irritable and pain in the back or joints). But the most important signs of **meningitis** to look out for in children are:

- a stiff neck (check that your child can kiss their knee, or touch their forehead with their knees)
- a very bad headache (this alone is not a reason to get medical help)
- a dislike of bright lights
- vomiting
- a fever
- drowsy, less responsive and confused, and
- a rash.

The main signs of **septicaemia** are:

- sleepiness, less responsive, vacant or confused (a late sign)
- severe pains and aches in the arms, legs and joints
- very cold hands and feet
- shivering
- rapid breathing
- red or purple spots that don't fade when you press them (**do the glass test** explained below)
- vomiting
- a fever, and
- diarrhoea and stomach cramps.

What should I do?

If your child develops one or more of the symptoms described above, get medical help urgently. If you can't get in touch with your doctor, or are still worried after getting advice, trust your instincts and take your child to the emergency department of your nearest hospital.

The 'glass' test

Press the side of a drinking glass firmly against the rash so you can see if the rash fades and loses colour under pressure. If it doesn't change colour, contact your doctor immediately.



Where can I get more information?

The Meningitis Research Foundation and the Meningitis Trust both provide information on meningitis.

Phone the Meningitis Research Foundation's free 24-hour helpline on **080 8800 3344** or visit the website at **www.meningitis.org**

Phone the Meningitis Trust's 24-hour helpline on **0845 6000 800** or visit the website at **www.meningitis-trust.org**



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 doctor's surgery or a travel clinic well in advance for up-to-date information on the immunisations your child may need. Courses of most travel vaccines can be given over a four-week period, but more time will be needed if a 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 can 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 a vaccination certificate as proof, before they can enter some countries. The yellow fever vaccination certificate becomes valid and effective ten days after the vaccination is given.

Watch out for malaria

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

There isn't an immunisation against malaria, but your doctor 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 quite difficult to take but some are now made especially for children.

Avoiding mosquito bites

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 DH Publications order line on 08701 555 455, any time, quoting T7 Health advice for travellers.

You can also get further information on the Department of Health website at **www.dh.gov.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 the pertussis bacterial cells which can produce immunity in the person receiving the vaccine.

Anaphylactic reaction

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

Contraindication

Factors that indicate that a certain procedure or treatment should not be carried out.

dTaP/IPV and DTaP/IPV

Combined vaccines that protect against four different diseases – diphtheria, tetanus, pertussis (whooping cough) and polio. They contain acellular pertussis vaccine and inactivated polio vaccine. They are given to three- to five-year-olds as a pre-school immunisation.

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 acellular pertussis vaccine and inactivated polio vaccine. It is given to babies at two, three and four months of age.

Inactivated polio vaccine (IPV)

Polio vaccine made from viruses that have been killed.

Neomycin

An antibiotic put into vaccines to prevent contamination by bacteria.

Polymyxin B

An antibiotic put into vaccines to prevent contamination by bacteria.

Streptomycin

An antibiotic put into vaccines to prevent contamination by bacteria.

Td/IPV

A combined vaccine that protects against three different diseases – tetanus, diphtheria, and polio. It contains tetanus, low-dose diphtheria and inactivated polio vaccine. It is given to young people aged 13 to 18 years to give longer-term protection against the three diseases.

Thiomersal

Thiomersal is a mercury-based preservative that has been used in vaccines for more than 60 years. Thiomersal is not used in the vaccines used in the UK routine vaccination programme. For more information on thiomersal, see www.immunisation.nhs.uk

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 the person affected by the vaccinations, and their family. It covers all the vaccines described in this leaflet except hepatitis B vaccine. There are several conditions that need to be met before a payment can be made. If you need more information, please contact:

Vaccine Damage Payments Unit
Department for Work and Pensions
Palatine House
Lancaster Road
Preston
PR1 1HB.
Phone: 01772 899944
E-mail: CAU-VDPU@dwp.gsi.gov.uk

If you want advice on immunisation, speak to your doctor, practice nurse or health visitor, or call **NHS Direct** on **0845 4647**.

For more information visit www.immunisation.nhs.uk



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(8am to 6pm, Monday to Friday)



Routine childhood immunisation programme

Each vaccination is given as a single injection into the muscle of the child's thigh or upper arm

At what age to immunise	Diseases protected against	Vaccine given
Two months old	Diphtheria, tetanus, pertussis (whooping cough), polio and <i>Haemophilus influenzae</i> type b (Hib) Pneumococcal infection	DTaP/IPV/Hib and Pneumococcal conjugate vaccine (PCV)
Three months old	Diphtheria, tetanus, pertussis, polio and <i>Haemophilus influenzae</i> type b (Hib) Meningitis C (meningococcal group C)	DTaP/IPV/Hib and MenC
Four months old	Diphtheria, tetanus, pertussis, polio and <i>Haemophilus influenzae</i> type b (Hib) Meningitis C Pneumococcal infection	DTaP/IPV/Hib, MenC and PCV
Around 12 months old	<i>Haemophilus influenzae</i> type b (Hib) Meningitis C	Hib/MenC
Around 13 months old	Measles, mumps and rubella (German measles) Pneumococcal infection	MMR and PCV
Three years four months or soon after	Diphtheria, tetanus, pertussis and polio Measles, mumps and rubella	DTaP/IPV or dTaP/IPV and MMR
Girls aged 12 to 13 years	Cervical cancer caused by human papillomavirus types 16 to 18	HPV
13 to 18 years old	Tetanus, diphtheria and polio	Td/IPV

Non-routine immunisations for at-risk babies

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