HSC Public Health Agency

Immunisation for pre-school children

three years and four months old

immunisation

the safest way to protect your child

From 2026

Introduction

This leaflet contains the facts about the vaccines given to children before they go to school. This includes a 4-in-1 vaccine to further protect against diphtheria, tetanus, pertussis and polio.

From 2026, varicella is being introduced to the childhood vaccine programme as a combined vaccine with MMR. For younger children, it will be offered at 12 and 18 months of age. Older children, who may have had an MMR vaccine previously, will be offered an MMRV vaccine at their 3 year 4 month appointment.

If your child was born between 1 September 2022 and 31 December 2024, they will be offered MMRV vaccine at their 3 year 4 month appointment. If you want to talk over this information, please contact your doctor, health visitor or practice nurse.

You may also find it helpful to visit: **pha.site/vaccinations** or **www.nidirect.gov.uk/childhood-immunisation**

The diphtheria, tetanus, pertussis and polio vaccine (4-in-1)

This vaccine protects against 4 different diseases: diphtheria, tetanus, pertussis (whooping cough) and polio.

Your child should have this dose at three years and four months old (before they start school).

They will be given a further dose against diphtheria, tetanus and polio between 14 and 18 years of age.

How do we know that this vaccine is safe and effective?

A vaccine has to go through many tests to check that it is safe and that it works before it is given to anyone. These checks continue even after a vaccine has been introduced. Only vaccines that pass all of the safety tests are used. 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. See page 6 for more on side effects.

What diseases will this vaccine prevent?

Diphtheria

Diphtheria is a serious disease that can quickly cause breathing problems. It can damage the heart and nervous system and, in severe cases, it can kill. Before the diphtheria vaccine was introduced, there were up to 1,500 cases of diphtheria a year in Northern Ireland.

Tetanus

Tetanus is a painful disease that affects the muscles and can cause breathing problems. It affects the nervous system and can kill. Tetanus is caused when germs that are found in soil and manure get into the body through open cuts or burns. It cannot be passed from person to person but is always present in the soil, even in this country.

Pertussis (whooping cough)

Whooping cough is a disease that can cause long bouts of coughing and choking that can make it hard to breathe. It can last for up to 10 weeks. It can be very serious for young children and can even kill babies under one year old. There were over 3,000 confirmed pertussis cases reported in Northern Ireland in 2024. This recent surge in cases highlights how important it is to make sure your child receives all their scheduled vaccines.

Polio

Polio is a virus that attacks the nervous system and can permanently paralyse the muscles. If it affects the chest muscles or the brain, polio can kill. Before the polio vaccine was introduced, as many as 1,500 cases of polio causing paralysis occurred each year in Northern Ireland.

Side effects of the vaccine

Most children will not have any side effects, but all children are different. Your child may get some of the following side effects, which are usually mild:

- irritability up to 48 hours after having the injection;
- a mild fever (see pages 16-17);
- a small lump at the site of the injection. This may last for a few weeks and will slowly disappear.

If you think your child has had any other reaction to the diphtheria, tetanus, pertussis and polio vaccine that you are concerned about, talk to your doctor, practice nurse or health visitor.

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

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This can be done by visiting **mhra.yellowcard.gov.uk** or by calling the Yellow Card hotline on **0800 731 6789**. You can also use the QR code or by downloading the Yellow Card app.

Very rarely, a vaccine may cause an allergic reaction, such as a rash or itching affecting some or all of the body. Even more rarely, children may have a severe reaction to the immunisation, causing difficulty breathing and possibly collapse. This is called anaphylaxis.

A recent study has shown that less than 1 case of anaphylaxis is reported in every million immunisations given. Although severe allergic (anaphylactic) reactions are worrying when they happen, the people who give immunisations are trained to deal with anaphylactic reactions, and treatment will lead to a rapid and full recovery.

Very rarely, children may have a fit a day or two after this vaccination. This is usually related to a very high temperature (see page 17). If your child has a fit, you should seek urgent medical advice. If your surgery is closed or if you can't contact your doctor, go straight to the nearest hospital emergency department. Children usually recover from fits quickly and completely.

Young children can have fits at any time, so having a fit after their vaccination may not necessarily be linked to the vaccine. Your doctor will decide whether your child can have more doses of the vaccine.

The MMRV vaccine

MMRV vaccine protects your child against measles (M), mumps (M), rubella (R; German measles) and Varicella (V; chickenpox).

MMR-containing vaccines were introduced here in 1988. Since then, the number of children catching these diseases has fallen to an all time low.

Why does my child now need the new MMRV vaccine?

For younger children, it will be offered at 12 and 18 months of age. Older children, who may have had an MMR vaccine previously, will be offered an MMRV vaccine at their 3 year 4 month appointment.

If your child was **born between 1 July 2024 and 31 December 2024**, and they received a dose of MMR vaccine just after their first birthday, they will be offered a dose of MMRV vaccine at each of their 18 month and 3 years 4 month appointments.

This is to provide better protection against varicella (chickenpox). Receiving 3 MMR-containing vaccines does not pose any safety concerns.

It is anticipated that with the new addition of the varicella component, cases of chickenpox seen in childhood will significantly reduce. The programme will reduce cases of severe chickenpox, associated complications and hospitalisation.

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. The complications of measles include chest infections, fits (seizures), encephalitis (inflammation and swelling of the brain) and brain damage. In very serious cases, measles can kill.

What is mumps?

Mumps is caused by a virus and can lead to fever, headache and painful, swollen glands in the face, neck and jaw. It can result in permanent deafness, viral meningitis and encephalitis (inflammation and swelling of the brain).

What is rubella?

Rubella (German measles) is a disease caused by a virus. In children it is usually mild and can go unnoticed. Rubella in pregnancy, however, is very serious for unborn babies. It can seriously damage their sight, hearing, heart and brain. This condition is called congenital rubella syndrome (CRS).

What is varicella (chickenpox)?

Chickenpox (varicella), is a very infectious disease caused by a virus. Varicella is very common and affects most children during childhood, although it can be caught for the first time at any age. It's transmitted through direct contact between

people, or indirectly through airborne droplets. Most varicella cases in children are relatively mild and the illness resolves without any need for treatment from a medical professional, though most children are unwell for several days and will miss five or more days from school or nursery. Parents may have to take time off work to care for them. However, some children will go on to develop complications from varicella including bacterial infection of skin lesions (spots) and, in rare cases, encephalitis (swelling of the brain), pneumonitis (lung infection) and stroke. These complications can result in hospitalisation and very rarely may result in death.

Measles, mumps, rubella and varicella can all have serious complications.

Why does my child need more than one dose of MMR-containing vaccine?

Even though measles and mumps are uncommon in the UK, children who are not protected are still at risk of catching the infections. Further doses of the vaccine will give the best level of protection to the greatest number of people.

After the first dose, between 5% and 10% of children are unprotected against each of the diseases. This is because their immune system hasn't responded to the first dose. After two doses of MMR, less than 1% of children are left unprotected against measles.

Thanks to immunisation, the number of cases of measles, mumps and rubella have been reduced. However, these diseases have not gone away and there have been outbreaks of measles in recent years across the world, including in the UK, Ireland and Europe. Two doses of the MMR combined vaccine are routinely given across Europe as well as in the US, Canada, Australia and New Zealand. Immunising your child with two doses of the MMR combined vaccine will give them the best protection.

Does MMRV have any side effects?

MMRV contains 4 separate vaccines in one injection. The vaccines work at different times. Around 5 to 11 days after immunisation, some children become feverish, develop a measles-like rash and go off their food as the measles part of the vaccine starts to work.

Rarely, a rash of small, bruise-like spots may appear within 6 weeks of the vaccine, usually caused by the measles or rubella part. If this appears, take your child to the doctor.

Rarely, about 3 weeks after the injection, a child might get mumps-like symptoms (fever and swollen glands) as the mumps part of MMRV starts to work.

A mild chickenpox-like rash may appear after vaccination near the injection site but can show up elsewhere. This rash does not need treatment and clears up on its own.

If your child does get a rash, as a precaution avoid close contact with people who are more vulnerable to chickenpox infection, such as those with weakened immune systems, pregnant women who have never had chickenpox and newborns whose mothers haven't had chickenpox. However, the chance of passing chickenpox from this rash after getting the MMRV vaccine is extremely low.

About 1 in 1,000 will have a fit caused by a high temperature (see page 17 for how to treat a fever). There is no evidence that this causes long-term problems. A child who has measles is five times more likely to have a fit as a result of the illness (5 in 1,000).

Vaccines can also cause allergic reactions. These are very rare, less than 1 in a million immunisations. Although severe allergic (anaphylactic) reactions are worrying when they happen, the people who give immunisations are trained to deal with anaphylactic reactions, and treatment will lead to a rapid and full recovery.

Rarely, children may develop encephalitis (swelling of the brain) after the MMRV vaccine. However, if an unvaccinated child catches measles, the chance of developing encephalitis is much higher.

Comparisons between the side effects of MMRV and the side effects of measles, mumps, rubella or varicella show that the vaccine is far safer than the diseases.

Facts about the MMRV vaccine

- MMRV protects children against measles, mumps, rubella and varicella.
- In over 40 years, more than 500 million doses of MMR have been given in around 100 countries. It has an excellent safety record.
- There is no evidence of any link between MMR and autism.
- Giving the vaccines separately may be harmful. It leaves children open to the risk of catching measles, mumps, rubella or varicella.
- Where MMRV combined vaccines are available, no countries recommend giving all the vaccines separately.
- While one MMRV vaccine contains porcine gelatine, an alternative is available. Speak to your doctor, nurse or health visitor for information.
- In the year before MMR was introduced in the UK, 86,000 children caught measles and 16 died. Due to low vaccine uptake, there have been recent outbreaks in the UK, Ireland and Europe and some children have died.

Have children been followed up long enough after MMR to know it's safe?

MMR has been given for over 40 years and over 500 million doses have been used. Its safety has been carefully

monitored in many countries and it has been shown to be a highly effective vaccine with an outstanding safety record.

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

Wouldn't it be better for children to have the MMRV vaccines separately?

No, giving the vaccines separately would mean eight injections instead of two and would leave children exposed to some of the diseases for longer. These diseases can be serious and even fatal.

Common questions

Is it safe to receive several different vaccines during one visit (combined vaccine)?

Yes, it is safe to receive several different vaccines during one visit. Combined vaccines are as safe and effective as individual vaccines. Receiving several vaccines or combined vaccines in one visit is important to protect children from various diseases as early as possible. This also makes it easier to complete the recommended doses on time.

Receiving multiple doses does not overwhelm the immune system. In theory, a child could respond effectively to around 10,000 vaccines at any one time. Our immune systems can and do easily cope with the number of vaccines given in the routine immunisation schedule.

Are there any reasons why my child should not be immunised with the diphtheria, tetanus, pertussis and polio (4-in-1) vaccine or MMRV?

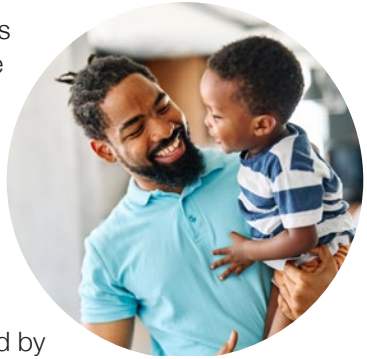
There are very few reasons why your child should not be immunised. You should let your doctor, practice nurse or health visitor know if your child:

- has a very high temperature or fever;
- has had a bad reaction to any immunisation;
- has a severe allergy to anything;
- has a bleeding disorder;
- has had convulsions or fits;
- has had or is currently having treatment for cancer;
- has any illness that affects the immune system (like leukaemia, HIV or AIDS);
- is taking any medicine that affects the immune system (for example high dose steroids or treatments given after organ transplant or for cancers);
- has any other serious illness.

These don't always mean that your child can't be immunised, but it helps the doctor or nurse decide which are the best immunisations for your child and whether they need to give you any other advice. A family history of illness is never a reason for a child not to be immunised.

What happens if my child gets a high temperature after immunisation?

Side effects from vaccines are uncommon, usually mild and disappear quickly. Some children may get a raised temperature or fever (over 37.5°C). If your child's face feels hot to the touch and they look red or flushed, they probably have a fever. You could check their temperature with a thermometer.



Fevers are fairly common in babies and children. They often get these with infections. Occasionally, a fever can cause a child to have a fit. Any fever can cause this, whether the fever is due to an infection or a vaccine. So it's important to know what to do if your child has a fever. Remember, fevers are more likely to be caused by the diseases than by the vaccines.

How to treat a fever

1. Keep your child cool by making sure:
   - they don't have too many layers of clothes or blankets on;
   - the room they are in isn't too hot (it shouldn't be cold either, just pleasantly cool).
2. Give them plenty of cool drinks.
3. Give them liquid paracetamol (ask for sugar-free). Read the instructions on the bottle carefully and give your child the correct dose for their age. You may need to give a second dose four to six hours later.

Remember, never give medicines containing aspirin to children under 16 years of age.

Call the doctor immediately if your child:

- has a very high temperature (39°C or above);
- has a fit.

If your child has a fit, lay them on their side in a safe place because their body may twitch or jerk.

Routine childhood vaccination schedule

This schedule will be slightly different for babies born before 31 December 2024. Scan the QR code or visit **nidirect.gov.uk/childhood-immunisation** for more information.

8 weeks old
- 6-in-1
- Rotavirus
- MenB

12 weeks old
- 6-in-1
- Rotavirus
- MenB

16 weeks old
- 6-in-1
- Pneumococcal

1 year old (just after their first birthday)
- MMRV
- MenB
- Pneumococcal

18 months
- 6-in-1
- MMRV

2+ years
- Children's flu vaccine (yearly)

3 years and 4 months
- 4-in-1

If your child has missed out on any of these vaccines, talk to your doctor, practice nurse or health visitor.
For further information on these vaccinations, visit **pha.site/vaccinations**

6-in-1 protects against diphtheria, tetanus, pertussis (whooping cough), polio, Hib and hepatitis B

4-in-1 protects against diphtheria, tetanus, pertussis (whooping cough) and polio

If you would like further information about immunisation, visit

pha.site/vaccinations

or

www.nidirect.gov.uk/childhood-immunisation

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