Immunisation for pre-school children

three years and four months old

immunisation

the safest way to protect your child

Introduction

This leaflet contains the facts about the diphtheria, tetanus, pertussis and polio booster vaccine, and the second MMR vaccine given to children before they go to school. If you want to talk over this information, please contact your GP, health visitor or practice nurse. You may also find it helpful to visit: www.publichealth.hscni.net or https://www.nidirect.gov.uk/articles/childhood-immunisation-programme

The diphtheria, tetanus, pertussis and polio vaccine

This vaccine protects against diphtheria, tetanus, pertussis (whooping cough) and polio. The polio part is now given in the same injection rather than by mouth.

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

They will be given a further booster against diphtheria, tetanus and polio between the ages of 14 and 18.

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 5 for more on side effects.

I have heard there is thiomersal in vaccines

Thiomersal (mercury) is no longer used in vaccines in the routine childhood immunisation programme. A minuscule amount of mercury was used for over 60 years to help preserve vaccines. In all this time there was never any evidence that it did any harm. However, its use has now been phased out as part of the global goal to reduce exposure to mercury from avoidable sources.

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. Before the pertussis vaccine was introduced, up to 3,500 cases of pertussis were reported each year in Northern Ireland.

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 paralytic polio 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 page 14);
- 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 GP, practice nurse or health visitor.

Parents and carers can also report suspected side effects of vaccines and medicines through the Yellow Card Scheme. This can be done online by visiting www.mhra.gov.uk/yellowcard or by calling the Yellow Card hotline on freephone 0800 731 6789 (available Monday to Friday 9am to 5pm).

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 one case of anaphylaxis is reported in about every half a 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 14). If your child has a fit, call your doctor immediately. 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 MMR vaccine

MMR vaccine protects your child against measles (M), mumps (M) and rubella (R; German measles).

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

If your child has not had their first dose, they now need two doses one month apart.

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

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).

Measles, mumps and rubella can all have serious complications

Why does my child need two doses of MMR vaccine?

Even though measles and mumps are uncommon in the UK, children who are not protected are still at risk of catching the infections. The second dose of the MMR vaccine gives the best level of protection to the greatest number of people.

After the first dose, between 5% and 10% of children aren't protected against each of the diseases. This is because their immune system hasn't responded to the first dose. After 2 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 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 vaccine will give them the best protection.

Does MMR have any side effects?

As with all medicines, there are some side effects associated with vaccinations. Most of these are minor and last for only a short time, eg redness and swelling at the injection site.

MMR contains three separate vaccines in one injection. The vaccines work at different times. About a week to 10 days after the MMR 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. Your child may, very rarely, get a rash of small bruise-like spots due to the rubella part of the immunisation about two weeks after MMR. This usually gets better on its own but if you see spots like this, show them to your doctor. About three weeks after the injection, a child might occasionally get a mild form of mumps as the mumps part of MMR kicks in.

Occasionally, children do have a bad reaction to the MMR vaccine. About 1 in 1,000 will have a fit caused by a high temperature due to the measles part of the vaccine. (See page 15 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.

Vaccines can also cause allergic reactions, but as mentioned on page 6, they are very rare and treatment leads to a rapid and full recovery.

Encephalitis (inflammation of the brain) has been reported in about one case in every million immunisations. This is no higher than the chance of any child developing encephalitis without the vaccine. But the natural measles infection causes encephalitis in 1 in every 1,000 children.

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

Complications	**Rate after natural disease**	**Rate after 1st dose of MMR**
Fits (due to high temperature)	1 in 200	1 in 1,000
Meningitis/ inflammation of the brain (encephalitis)	1 in 200 to 1 in 1,000	1 in 1,000,000
Conditions affecting blood clotting	1 in 3,000	1 in 24,000
Death (depending on age)	1 in 2,500 to 1 in 5,000	None

These side effects are even more rare after the second dose of MMR.

Facts about the MMR vaccine

- MMR protects children against measles, mumps and rubella.
- 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 or rubella.
- While some MMR vaccines contain gelatine from pork, an alternative is available. Speak to your doctor, nurse or health visitor for information.
- Where MMR is available, no countries recommend giving all the vaccines separately.
- 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.

What about the reports of links between autism and MMR in the past?

Although autism is increasingly recognised now, the increases were going on long before MMR was introduced. Parents often first notice signs of autism in children after

their first birthday. MMR is usually given to children at about this age, but this doesn't mean that MMR causes autism.

Extensive research into the possibility of a link between the MMR vaccine and autism, involving hundreds of thousands of children, has been carried out in Denmark, Sweden, Finland, Canada, the USA and the UK. No link has been found.

Experts from around the world, including the World Health Organization, agree that there is no link between the MMR vaccine and autism.

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.

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

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

Giving the vaccines separately would mean six injections instead of two and would leave children exposed to two of the diseases for at least a year. These diseases can be serious and even fatal.

Giving three vaccines together does not overload children's immune systems. From birth, babies' immune systems protect them from thousands of viruses and bacteria that surround them.

The World Health Organization advises against using separate vaccines because they would leave children at risk for no benefit. No country in the world recommends MMR being given as three separate vaccines. There is no evidence that giving the vaccines separately is any safer, so doing this could cause harm without doing any good.

Are there any reasons why my child should not be immunised with the diphtheria, tetanus, pertussis and polio vaccine or MMR?

There are very few reasons why your child should not be immunised. You should let your health visitor, GP or practice nurse 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 treatment for cancer;
- has any illness that affects the immune system (eg leukaemia, HIV or AIDS);

- is taking any medicine that affects the immune system (eg 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 or ibuprofen (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 immunisation programme

When to immunise	Diseases vaccine protects against	How it is given
2 months old	Diphtheria, tetanus, pertussis (whooping cough), polio, Hib and hepatitis B (6 in 1)	One injection
	Rotavirus	Orally
	Meningococcal B infection	One injection
3 months old	Diphtheria, tetanus, pertussis, polio, Hib and hepatitis B (6 in 1)	One injection
	Pneumococcal infection	One injection
	Rotavirus	Orally
4 months old	Diphtheria, tetanus, pertussis, polio, Hib and hepatitis B (6 in 1)	One injection
	Meningococcal B infection	One injection
Just after the first birthday	Measles, mumps and rubella	One injection
	Pneumococcal infection	One injection
	Hib and meningococcal C infection	One injection
	Meningococcal B infection	One injection
Every year from 2 years old up to and including Y12	Influenza	Nasal spray or injection
3 years and 4 months old	Diphtheria, tetanus, pertussis and polio	One injection
	Measles, mumps and rubella	One injection
Girls and boys 12 to 13 years old	Conditions caused by human papillomavirus, including cervical cancer (in girls) and cancers of the mouth, throat, anus and genitals (in boys and girls) and genital warts.	One injection
14 to 18 years old	Tetanus, diphtheria and polio	One injection
	Meningococcal ACWY	One injection

HSC Public Health Agency

Public Health Agency
12-22 Linenhall Street, Belfast BT2 8BS.
Tel: 0300 555 0114 (local rate).
www.publichealth.hscni.net

Find us on:

If your child has missed out on any of these vaccines talk to your GP or health visitor.

If you would like further information about immunisation, visit www.publichealth.hscni.net or www.nhs.uk/vaccinations

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