

# MMR

the facts



**i**mmunisation

the safest way to protect your child for life

# Measles, mumps, rubella and the MMR vaccine

## **Here are some facts about measles, mumps, rubella and the MMR vaccine.**

- The MMR programme started in Britain in 1988. By this time, children in the United States had been having the MMR vaccine for over 15 years with no safety problems.
- Worldwide, more than 500 million doses of the MMR vaccine have been given in over 100 countries.
- The World Health Organization says about the MMR vaccine, 'its safety record is exemplary'.
- In the year before the vaccine was introduced in the UK, 86,000 children caught measles and 16 died.
- Because of the MMR vaccine, no child has died from acute measles in the UK since 1992.
- Before the vaccine was introduced, mumps was the commonest cause of viral meningitis in children.
- Because of the MMR vaccine, we are now close to wiping out mumps in children.
- Before the MMR vaccine was introduced, rubella continued to cause terrible damage to some unborn babies.
- Because of the MMR vaccine, we are now close to wiping out rubella.
- There has never been a programme of giving single vaccines against measles, mumps and rubella in the UK.

## **We keep hearing that the MMR vaccine is linked with autism. Is this true?**

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■ No. This leaflet will give you the facts.

## **So why has MMR been linked with autism?**

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■ The speculation over a link between the MMR vaccine and autism started in 1998 when some scientists published a paper on 12 autistic children who also had bowel problems. Although the scientists stated clearly that there was no proven link between autism and the MMR vaccine, the resulting publicity gave the impression that there was a link.

■ The number of children being diagnosed with autistic spectrum disorders (conditions related to autism) has been increasing for many years. Some people took this as an indication that the increase was caused by the MMR vaccine.

■ Many parents of autistic children know that there is something different about their child very early on. But some babies may appear to develop signs of autism when they are older. This type of autism, called regressive autism, was known about long before the MMR vaccine was introduced. Symptoms of regressive autism often start around the same time that the first dose of the MMR vaccine is given. So it's understandable that parents worry about there being a connection between the two events.

## **How can we tell if there is a link?**

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■ If the MMR vaccine and autism were linked, regressive autism would be far more common in vaccinated children than in unvaccinated ones. But this is not the case.

- If the MMR vaccine caused autism, there would have been a sudden increase in cases when the vaccine was introduced into Britain. This didn't happen. You would also expect to see a fall in cases of autism if the MMR vaccine was withdrawn. In Japan, that didn't happen when they stopped using the MMR vaccine and used a single measles and a single rubella vaccine instead.
- 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, 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.

### **Was there a sudden increase in autism after the MMR vaccine was introduced?**

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No. There has been no sudden increase in autism in any country after the MMR vaccine was introduced. This wouldn't be the case if the MMR vaccine caused autism.

### **So what might be the real cause of autism?**

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Autistic spectrum disorders probably result from a range of causes. The strongest evidence to date points to there being a genetic link.

The chances of a child developing autism are no different if they have the combined MMR vaccine, single measles, single mumps and single rubella vaccines, or no vaccines at all.

All the latest research shows that there is no evidence to say that the MMR vaccine causes autism. Work continues to find out what the real causes are.

## **Why can't my child have single vaccines?**

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- All the evidence shows that the MMR vaccine is the safest way to protect your child against measles, mumps and rubella.
- In the time gaps between the three vaccines, children would not be protected against the diseases they had not yet been immunised against. So there would be an increase in measles, mumps and rubella leading to illness and possible death. Also, unprotected children can pass on these diseases to other at risk children and pregnant women.
- Choice is important, but the NHS cannot offer a choice of single vaccines that would put children at risk.
- Not everybody will be able to finish the course of six injections (initial dose and second dose) and so some children will be left unprotected.
- The World Health Organization advises against using separate vaccines because they would leave children at risk for no benefit. No other country in the world recommends that children should be immunised against measles, mumps and rubella in three separate vaccines, twice over.

## **But what about overloading my child's immune system with three viruses all at once?**

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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 their skin, nose, throat and intestines. This protection carries on throughout the child's life.

A baby could respond safely and effectively to around 10,000 vaccines at any one time. So the baby's immune system can and does easily cope with the MMR vaccine.

## Measles

### What is measles?

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Measles is caused by a very infectious virus. Nearly everyone who catches it will have a high fever, a rash and be unwell. Children 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. Complications include chest infections, fits, encephalitis (swelling of the brain) and brain damage. In very serious cases, measles kills.

### How is it spread?

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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.

## Mumps

### What is mumps?

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Mumps is caused by a virus which causes a fever, a headache, and painful, swollen glands in the face, neck and jaw. It can result in permanent deafness, viral meningitis (inflammation 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?

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

# Rubella

## What is rubella?

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Rubella (German measles) is a disease caused by a virus. In children it is usually mild and may 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. Rubella infection in the first three months of pregnancy causes damage to the unborn baby in up to nine out of ten cases. This condition is called congenital rubella syndrome (CRS). In many cases, pregnant women catch rubella from their own, or their friends', children.

## How is it spread?

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

# The vaccine

## **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 recently 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 soon after their first birthday, when the natural immunity the baby got from their mother fades. It is given again when children are aged three to five.

## **How effective is the MMR vaccine?**

■ The MMR vaccine is highly effective and it has been responsible for almost wiping out the three diseases since it was introduced in 1988, as the graphs opposite show.

## **What are the side effects of the vaccine?**

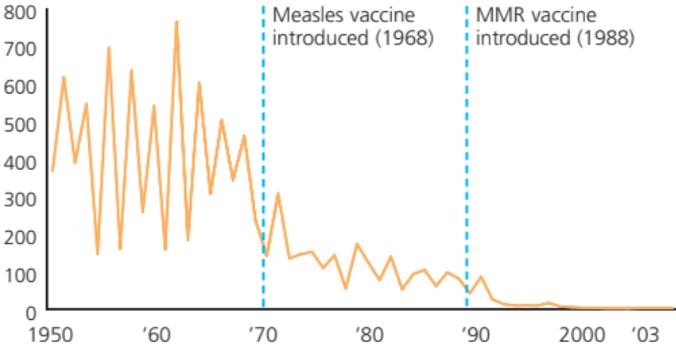
The three different viruses in the vaccine act at different times and may produce the following side effects.

- Six to ten days after the immunisation, some children may become feverish (this happens to about one in ten children). Some develop a measles-like rash and go off their food as the measles part of the vaccine starts to work.
- About one in every 1000 immunised children may have a fit caused by the fever. This is called a 'febrile convulsion'. However, if a child has not been immunised and gets measles, they are five times more likely to have a fit.

Before the MMR vaccine was introduced in 1988, there were frequent epidemics of measles, mumps and rubella.

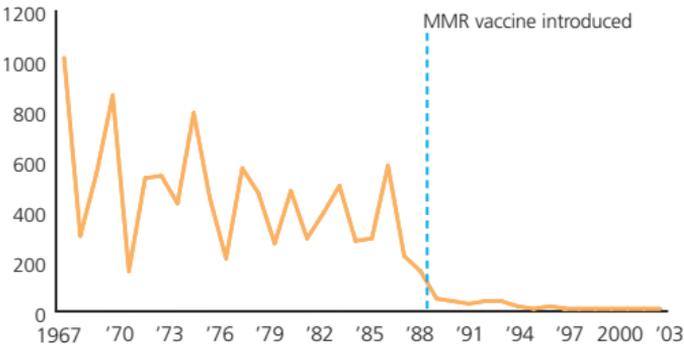
### Measles

Number of reported cases (thousands)



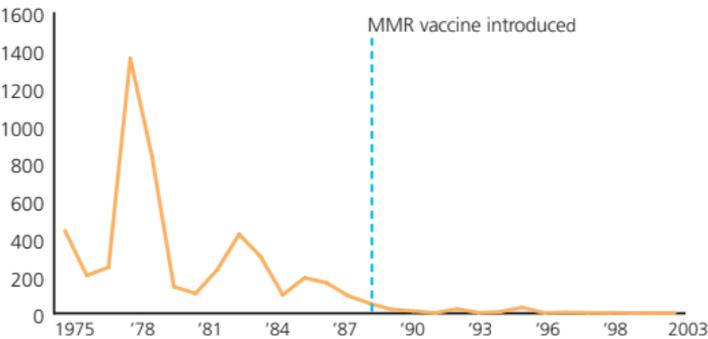
### Mumps

Number of cases per 100,000 people



### Rubella

Number of cases in pregnant women



■ 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.

■ Children may (very rarely) 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 problem and protect your child in the future.

■ Fewer than one child in a million develops encephalitis (infection of the brain) after the MMR vaccine, and there is very little evidence that it is the vaccine that causes encephalitis. However, if a child catches measles the chance of developing encephalitis is between one in 200 and one in 5000.

## Conditions caused by the diseases compared with those caused by the vaccine

Condition	Children affected after the natural disease	Children affected after the first dose of the MMR vaccine
Convulsions	One in 200	<b>One in 1000</b>
Meningitis or encephalitis	One in 200 to one in 5000	<b>Less than one in a million</b>
Conditions affecting blood clotting	One in 3000 (rubella) One in 6000 (measles)	<b>One in 22,300</b>
SSPE (a delayed complication of measles that causes brain damage and death)	One in 8000 (children under two)	<b>0</b>
Deaths	One in 2500 to one in 5000 (depending on age)	<b>0</b>

## **How do I know if my child has a fever?**

A few children may develop a fever after being immunised. A fever is a temperature over 37.5°C. If your child's face feels hot to the touch, and they look red or flushed, they may have a fever. You could check their temperature with a thermometer. Fevers are fairly common in children. They are usually mild, but it is important to know what to do if your child gets one.

## **How do I treat a fever?**

- Keep your child cool by:
  - making sure they don't have too many layers of clothes or blankets on; and
  - giving them plenty of cool drinks.
- Give them liquid paracetamol or ibuprofen. Read the instructions on the bottle carefully and give your child the correct dose for their age. You may need to give them a second dose four to six hours later.

**Never give aspirin to children under 16 years old.**

**If you are worried about your child, follow your instincts and speak to your doctor or NHS Direct on 0845 46 47.**

**Call the doctor immediately** if your child:

- has a temperature of 39°C or above;  
or
- has a fit.

If your doctor's surgery is closed and you can't contact your doctor, go to your nearest hospital's emergency department.

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

There are very few children who cannot be immunised. If you missed the appointment for your child's MMR vaccination, you can get another appointment at any time.

## Allergies and other problems

Even a child with an anaphylactic (rashes on face and body, a swollen mouth and throat, problems with breathing and shock) reaction to egg can have the MMR vaccine. In this situation, tell your doctor or practice nurse so they can make special arrangements to give your child the vaccine.

If your child had an anaphylactic reaction after a previous dose of MMR vaccine or if your child's immune system is suppressed (because they are undergoing treatment for a serious condition such as a transplant or cancer), the doctor or practice nurse should get advice from a child health specialist.

## Where can I get more information?

Visit [www.mmrthefacts.nhs.uk](http://www.mmrthefacts.nhs.uk) and [www.immunisation.nhs.uk](http://www.immunisation.nhs.uk) for detailed information on the MMR vaccination.

You can also speak to your doctor, health visitor, practice nurse or district nurse, or phone NHS Direct on 0845 4647.

