

# The measles, mumps, and rubella (MMR) vaccine: What you need to know

## What is the MMR vaccine?

The MMR vaccine is a **combination vaccine** that protects us against three diseases in one vaccine: measles, mumps, and rubella. Combination vaccines contain **two or more** vaccines that could be given individually but are administered together. This way, you get protection against multiple diseases in one shot.

In some cases, the MMR vaccine is also offered along with the varicella (chickenpox) vaccine. This combination vaccine is known as the measles, mumps, rubella, and varicella (**MMRV**) vaccine.



## A brief introduction to measles, mumps, and rubella

**Measles** is a highly contagious viral infection caused by the measles virus. In fact, measles is one of the most contagious diseases in the world. A telltale sign of the disease is a rash that starts on the face and then gradually covers the rest of the body. **One in 10** people who catch measles will develop a serious infection that can lead to pneumonia and ear infections. Less commonly, measles can also result in **brain inflammation** that can lead to **permanent brain damage**.

**Mumps** is a contagious viral infection caused by the mumps virus. While some people who have mumps will not have symptoms or will have only very mild symptoms, the most common symptom of mumps is the **swelling of the salivary glands** (located just under the ears). In severe cases, mumps can lead to **meningitis** (inflammation of the lining of the brain and spinal cord) and **encephalitis** (inflammation of the brain). Mumps can also lead to inflammation of the testicles and ovaries. In **rare cases**, this inflammation can lead to infertility (the inability to have children).

**Rubella** is a highly contagious viral infection caused by the rubella virus. While the infection is mainly mild to moderate in adults and children, it can cause **serious complications for your baby** if you become infected during pregnancy. When a baby is affected by rubella while in the womb (in utero), this is known as **congenital rubella syndrome (CRS)**. In fact, rubella is the leading cause of birth complications in the world among diseases that can be prevented through vaccination.

## How many doses do I need?

For children and adolescents, two doses of the MMR or MMRV vaccine are needed to complete the immunization series.

Two doses have been shown to provide the best protection possible against measles, mumps, and rubella for children and adolescents. One dose **will not provide sufficient protection** and will leave your child or teen at risk of infection with one or more of these diseases.

Depending on various risk factors, such as age and profession, adults may also receive one or two doses of the MMR vaccine. Talk to your healthcare professional about how many doses of the MMR vaccine you need to be protected.



## Are the MMR and MMRV vaccines safe? What are the side effects?

The MMR and MMRV vaccines are **very safe**. Combination vaccines are rigorously tested for safety and efficacy to ensure that the vaccines can effectively protect people against the diseases they are designed to protect against.

As with any medication, there may be side effects. For the MMR and MMRV vaccines, common side effects can include the following:

1. soreness/redness at the injection site
2. some people may experience fever, a general feeling of being unwell, and a mild rash 6 to 23 days after receiving the vaccine
3. joint pain may occur (most common in adolescents and adults)

Serious side effects due to the MMR and MMRV vaccines, such as having an anaphylactic reaction, are **rare**.

### Good to know!

Soreness and redness at the injection site are common side effects for most vaccines. The benefit with combination vaccines is that, to get protection against more than one disease, you only need to get one shot instead of multiple individual shots at different sites on the body.

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## Is it true that the MMR vaccine causes autism?

**No. No evidence** has ever shown that the MMR or MMRV vaccines cause autism. The myth of the MMR vaccine causing autism was fabricated by a doctor in the United Kingdom who first introduced this disinformation in a **fraudulent** paper published in 1998 that used **falsified data**. Since then, **no other studies** have found that the MMR vaccine causes autism. The 1998 paper has now been **thoroughly discredited** and **retracted from the journal**, and the doctor from the United Kingdom who authored the paper had his **medical license revoked** for using falsified data as evidence.



## How effective are the MMR and MMRV vaccines?

The MMR vaccine is highly effective at protecting against measles, mumps, and rubella. In fact, before combination vaccines can be approved, they must demonstrate that they are **just as effective** at preventing disease as the individual vaccines they are made up of – and the individual measles, mumps, and rubella vaccines are highly effective. For example, the efficacy of two doses of the MMR vaccine at preventing measles infection is close to 100%.

Since the introduction of the individual measles, mumps, and rubella vaccines in the 1960s, along with the introduction of the MMR vaccine in 1971, there has been a 99% decrease in the number of cases of each disease in Canada.

The MMRV vaccine is also highly effective at protecting against measles, mumps, rubella, and varicella.

While the MMR and MMRV vaccines are highly effective, it is still possible for some vaccinated people to get the diseases these vaccines are designed to protect against. However, infection with any of these diseases is usually **much milder** in people who received the vaccine.

### You should know

In Canada, individual vaccines for measles, mumps, and rubella are not available. Only combination MMR vaccines are available.



### Where can I get the MMR and MMRV vaccines?

You can talk to your doctor, nurse, pharmacist, or local public health office about getting the MMR or MMRV vaccine for yourself or your child.

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