Measles, Mumps, Rubella and the MMR Vaccine

This sheet talks about exposure to measles, mumps, rubella, and the MMR vaccine in pregnancy or while breastfeeding. This information should not take the place of medical care and advice from your health care provider.

What are measles, mumps and rubella? How do they spread?

Measles (rubeola), mumps, and rubella (German measles) are viruses that can spread from person to person through coughing, sneezing, or sharing cups or utensils with an infected person. Measles, mumps and rubella used to be common in the United States, but vaccination programs have greatly lowered the number of cases. These viruses are still common in some parts of the world where people have not been vaccinated. Outbreaks of measles and mumps still happen in the U.S., especially in areas where vaccination rates are not high enough to protect the population. Once a person has been infected with measles, mumps, or rubella, it is rare to get the virus again.

What are the symptoms of measles, mumps, and rubella?

Measles causes rash, high fever, cough, sore throat, runny nose, and red, watery eyes. The person can spread the virus to other people from 4 days before the rash appears until 4 days after it goes away.

Mumps causes fever, headache, body aches, and swelling of the salivary glands under the ears, which can cause puffy and tender cheeks and jaw.

Rubella (German measles) usually causes a mild rash with a fever. Other symptoms may include headache, achy joints, runny nose and red eyes.

Rarely, serious problems can occur with these viruses, including pneumonia, meningitis, deafness and death.

What is the MMR vaccine?

The MMR vaccine is a mixture of live but weakened viruses from measles, mumps, and rubella. The vaccine causes a person to develop antibodies to these viruses and gives protection against the viruses in the future. These antibodies usually last for life. The vaccine may cause mild side effects including rash or joint aches.

People who have had severe reactions to the antibiotic called neomycin or to the MMR shot in the past should not receive the vaccine. People who take certain medications or have health conditions that severely lower their immunity (such as HIV/AIDS or steroid treatments), or who have cancer, should not receive this vaccine until their immunity improves. Talk to your health care provider if you have concerns about getting this vaccine.

How can I lower the chance of getting measles, mumps or rubella?

Measles, mumps, and rubella are very contagious (easily spread from person to person). Getting the MMR vaccine provides protection against these. Two doses of the vaccine are recommended for the most protection. All members of a household should be vaccinated. Non-vaccinated people who are exposed to someone with a confirmed case of measles may be given the MMR vaccine within 72 hours of exposure. This can provide some protection against the disease. If measles still develops, the illness usually has milder symptoms and lasts for a shorter time.

Other ways to lower the chance of spreading these viruses are to isolate and avoid those who are sick, properly wash hands with soap and water, and avoid sharing cups or utensils with someone who has been exposed.

Does having measles, mumps, or rubella increase the chance for miscarriage?

Infection with these viruses during pregnancy might increase the chance of miscarriage (early pregnancy loss) or stillbirth (fetal death later in pregnancy).
Does getting measles, mumps, or rubella during pregnancy increase the chance of birth defects or other pregnancy complications?

In every pregnancy, a woman starts out with a 3-5% chance of having a baby with a birth defect. This is called her background risk. There is no clear evidence that having measles or mumps during pregnancy increases the chance for birth defects. There may be an increased chance of premature delivery (before 37 weeks) or low birth weight.

If a woman gets rubella during pregnancy, the virus can pass to the baby and cause certain birth defects. This is called congenital rubella syndrome (CRS). A baby is more likely to be affected by CRS if the mother gets rubella during the first trimester of pregnancy, although infection any time in pregnancy carries a chance of CRS. The most common effect of CRS is hearing loss. Other symptoms include vision loss due to cataracts (cloudy films that form over the lens of the eyes) and other defects of the eye, heart defects, small head size, and developmental delay. Not all babies with CRS will have all these symptoms. Some babies with CRS die shortly after birth. Because of these concerns, women are usually screened early in pregnancy to be sure they have antibodies to rubella.

I am not sure if I ever received the MMR vaccine. Should I get the vaccine before becoming pregnant?

It is recommended that all women of childbearing age who do not have immunity to MMR receive the vaccine before pregnancy. If you were born outside the U.S., or are not sure if you were vaccinated, your health care provider or local health department can perform a blood test to see if you have antibodies to these viruses. If you do not, you can get the vaccine before you become pregnant.*

I received the MMR vaccine before I knew I was pregnant. Will the vaccine increase the chance of birth defects?

There is no evidence that getting the MMR vaccine before or during pregnancy would increase the chance of birth defects. The MMR vaccine is not recommended during pregnancy because of a very small chance of developing the virus from the vaccine itself. This is very rare, and is more likely to happen in people who have problems with their immune systems. Due to this very small chance of illness, the Centers for Disease Control and Prevention (CDC) recommend waiting 28 days after getting the MMR vaccine before trying to get pregnant. However, there is information from a large number of pregnancies where women received the MMR vaccine after they were pregnant. They did not have pregnancy complications and there was no increased rate of birth defects.

There is no evidence that getting the MMR vaccine before or during pregnancy, or while breastfeeding, would increase the chance of autism in a child. There is also no evidence that young children who get the MMR vaccine at the recommended ages would have an increased chance of autism.

I am pregnant. Can my child receive the MMR vaccine?

There is no known risk to others when a child receives the MMR vaccine.*

Can I breastfeed if I have measles, mumps, or rubella?

If you have measles, mumps, or rubella, talk to your healthcare provider about the best ways to prevent the spread of the illness to your baby or other members of your household. If you suspect that your baby has any symptoms of measles, mumps, or rubella, contact the child’s healthcare provider.

Can I get the MMR vaccine while breastfeeding?

Breastfeeding women who receive the MMR vaccine can continue to breastfeed. Breastfeeding does not affect how well the vaccine works in the mother.*

If a man has measles, mumps, or rubella, does it increase the chance of infertility or birth defects?

These viruses have not been studied for effects on a man’s fertility. A father cannot pass these infections directly to a baby during pregnancy. However, an infected man can pass the viruses to the mother through close contact with her. For more information, please see the MotherToBaby fact sheet Paternal Exposures at https://mothertobaby.org/fact-sheets/paternal-exposures-pregnancy/pdf/.*

* Section Updated May 2020

Selected References:


April, 2019