# Measles
# Frequently Asked Questions
### Public

## Measles Overview

**What is measles and what are the symptoms?**

Measles is not just a little rash and can be dangerous, especially for babies and young children. Measles is highly contagious; it is one of the most contagious diseases in the world. If one person has it, up to 9 out of 10 people nearby will become infected if they are not immune. It is a viral disease that is spread through respiratory droplets when an infected person coughs or sneezes. You can get measles by being in a room where a person with measles has been even up to 2 hours after the person has left the room. If someone is infected with measles, they can spread it to others starting 4 days before through 4 days after their rash starts. Symptoms typically appear 7 to 14 days after exposure and typically include:

- High fever (may spike to more than 104° Fahrenheit).
- Cough.
- Runny nose (coryza).
- Red, watery eyes (conjunctivitis).
- Tiny white spots (Koplik) spots may appear inside the mouth two to three days after symptoms begin.
- Measles Rash appears 3 to 5 days after the first symptoms. It usually begins as flat red spots that appear on the face then spreads downward across the body.
    - Sometimes immunocompromised patients do not develop a rash.

Uncomplicated measles, from late prodrome to resolution of fever and rash, lasts 7-10 days. This is not your common cold! An infected person can spread measles to others even before knowing they have the disease.

Measles Symptoms and Complications | Measles (Rubeola) | CDC
About Measles | Measles (Rubeola) | CDC

**What are common complications from measles?**

Approximately 30% of measles cases in the United States from 1987 to 2000 were reported to have one or more complications. Chapter 13: Measles | Pink Book | CDC

Common complications include:

- Diarrhea.
- Ear infections (otitis media).

Severe complications include:

- Hospitalization.

- Lung infection (pneumonia).
- Brain swelling (encephalitis).
- Death.
- Complications during pregnancy (if you are pregnant and have not had the MMR vaccine, measles may cause birth prematurely, or a low-birth-weight baby).

Long-term complications:

- Rare but fatal brain disease (SSPE: subacute sclerosing panencephalitis).
- Immune amnesia (measles virus has the ability to destroy immune memory from previous infections. This weakens your immune system, making you more likely to get sick from other diseases. This effect can last for years. Measles and Immune Amnesia).

### Who is at risk for complications?

Measles can be serious in all age groups. However, there are several groups that are more likely to suffer from measles complications:

- Children younger than 5 years of age.
- Adults older than 20 years of age.
- Pregnant women.
- People with weakened immune systems, such as from leukemia or HIV infection.

### How do I prevent getting measles?

The best way to prevent measles is to get vaccinated. The MMR (measles, mumps, and rubella) vaccine is recommended for children at 12 through 15 months of age, with dose two at 4 through 6 years of age. Most adults are recommended to have at least one dose of MMR. Some adults are recommended to have two doses; this includes all persons working in health care, college students, close contacts of immunocompromised people, and persons who plan to travel internationally. Persons born before 1957 are presumed to be immune because they are likely to have had measles. Unless there is a reason that MMR vaccine cannot be received, two doses of MMR vaccine can be received if there is no record of the doses. An adult that would like to ensure they have two doses should talk about this clinical decision with their provider. Women should not get the vaccine if they are already pregnant or if they plan to become pregnant within one month after getting the vaccine.

Vaccine Recommendations Before, During, and After Pregnancy | Pregnancy & Vaccines | CDC

Almost everyone without immunity will get measles if exposed to the virus. Once infected, there is no specific treatment to cure measles. Infection can lead to lifelong health problems; MMR vaccination is the best strategy to avoid the long-term consequences of this disease.

## Measles Vaccination

### How effective is the MMR vaccine in preventing measles?

Vaccination is the most effective way to prevent measles. A dose of measles vaccine administered after 12 months of age results in immunity in 93% of people. The 2nd dose increases immunity to 97%.

## What is presumptive evidence of immunity?

It is recommended that people who do not have presumptive evidence of immunity to measles, mumps, and rubella should get vaccinated against these diseases.

Presumptive evidence of immunity can be established in any of the following ways:

- Written documentation of adequate vaccines for measles, mumps, and rubella.
- Laboratory evidence of immunity.
- Laboratory confirmation of disease.
- Birth before 1957.
    - Although birth before 1957 is considered acceptable evidence of immunity for healthcare personnel in routine circumstances, healthcare facilities should consider vaccinating healthcare personnel born before 1957 who lack laboratory evidence of immunity or laboratory confirmation of disease.
    - Healthcare providers should not accept verbal reports of vaccination without written documentation as presumptive evidence of immunity.

Measles Vaccine Recommendations | Measles (Rubeola) | CDC

## What are the routine vaccine recommendations?

### Children

CDC routinely recommends children should get 2 doses of MMR vaccine (MMR or MMRV):

- **First dose** at age 12 through 15 months.
- **Second dose** at age 4 through 6 years (before school entry).

### Adolescents and Adults

Adolescents through age 18 years are recommended for 2 doses of MMR vaccine. If they do not have 2 doses of vaccine catch them up as soon as possible.

- The minimum interval between 2 doses of MMR vaccine is at least 28 days between dose 1 to dose 2.

Adults 19 years and older should also be up to date on MMR vaccinations with either 1 or 2 doses (depending on risk factors); unless they have other presumptive evidence of immunity to measles, mumps, and rubella. Ensuring a two-dose series of MMR vaccination is especially important for specific groups including:

- Students at post-high school education institutions.
- International travelers.
- Healthcare personnel.
- Close contacts of immunocompromised people.
- People with HIV infection (absence of severe immunosuppression).
- Adults who got inactivated measles vaccine (1963-1967).
- Groups at increased risk during measles outbreak.

Measles Vaccination for Specific Groups | Measles (Rubeola) | CDC
Recommended Adult Immunization Schedule for ages 19 years or older; 2025 U.S.

### Do any adults need "booster" doses of MMR vaccine to prevent measles?

Adults with evidence of immunity, as defined in a separate question, do not need any further vaccines. No "booster" doses of MMR vaccine are recommended for either adults or children. They are considered to have life-long immunity once they have received the recommended number of MMR vaccine doses or have other acceptable evidence of immunity.

### Can I get MMR if I am breastfeeding my baby?

Yes, it is safe to breastfeed after getting the MMR vaccine. The vaccine does not pass through breast milk, and it will not harm your baby.

### If someone in the house has a weakened immune system, is it safe for me to get MMR?

Yes. Measles vaccine contains weakened viruses and are not passed from the vaccinated person to other household members.

### If a rash occurs after receiving the MMR vaccine, does that indicate that the person has measles?

Transient rashes have been reported in a small group of vaccine recipients, usually between 5 and 12 days after receipt of MMR vaccine. Recipients who develop rash and/or fever are not considered contagious. However, if the vaccine was administered as part of an outbreak response, it is important to ensure rapid differentiation of vaccine reaction from infections with wild-type virus. Consult with doctor and local public health authorities to assist with this.

### How long does it take for the measles vaccine to work in your body?

For the measles vaccine to work, the body needs time to produce protective antibodies in response to the vaccine. Detectable antibodies generally appear within just a few days after vaccination. People are usually fully protected after about 2 or 3 weeks. If you're traveling internationally, make sure you are up to date on your measles vaccinations. You should plan to be fully vaccinated at least 2 weeks before you depart. If your trip is less than 2 weeks away and you're not protected against measles, you should still get a dose of measles vaccine.

### How can I check my vaccination status?

Begin by looking for your vaccination records. Your health care provider may have this information. Another potential source of vaccination records could be your school or college records. Check your vaccination record at the Michigan Immunization Portal.

- If you do not have written documentation of a measles vaccination, you can get a dose of MMR vaccine. CDC recommendations indicate there is no harm in getting a dose of MMR vaccine, even if you are already immune.

### Do people who received the killed measles vaccine in the 1960's need to be revaccinated with the current MMR vaccine?

Yes, people who know they received the killed measles vaccine (an earlier formulation of measles vaccine that is no longer used) should talk to their healthcare provider about getting revaccinated with the current, MMR vaccine.

Not many people fall into this group; the killed vaccine was given to less than 1 million people between 1963 and 1967. Also, most people don't know if they received the killed vaccine during this time. If you're unsure whether you fall into this group, you should first try to find your vaccination records or documentation of measles immunity. If you do not have written documentation of measles immunity, you should get vaccinated with measles-mumps-rubella (MMR) vaccine. There is no harm in getting another dose of MMR vaccine if you may already be immune to measles (or mumps or rubella). Another option is to have a healthcare provider test your blood to determine whether you're immune, but this is generally not recommended.

## Measles Vaccine Safety

**What is my risk when getting Measles vaccine?**

The safety of vaccines is taken very seriously. Vaccines are among the most tested and safest medical products available.

Some common side effects to MMR vaccination are:

- Sore arm from the shot.
- Fever.
- Mild rash.
- Temporary pain and stiffness in the joints.
- Some people may experience swelling in the cheeks or neck.

More serious reactions happen rarely:

- Temporary low platelet count.
- Seizure (often associated with fever).
- Severe allergic reaction.

Vaccines, like any medicine, can have side effects. Most people who get MMR vaccine do not have any serious problems with it. Getting MMR vaccine is much safer than getting measles, mumps, or rubella.
Measles, Mumps, Rubella (MMR) Vaccine Safety | Vaccine Safety | CDC.
Vaccine Information Statement: MMR Vaccine - What you need to know.
Are Vaccines Safe? - Vaccinate Your Family.
MMR Vaccine: What You Need to Know - HealthyChildren.org.

**Where can I find more information to help address concerns about vaccine safety?**

There are many excellent websites that have information about vaccine safety, including the American Academy of Pediatrics, the CDC, Vaccinate Your Family, Immunize.org, the National Academies of Science, Engineering, and Medicine, and the Vaccine Education Center of the Children's Hospital of Philadelphia.

Resources:

- Vaccinations Are Safe: Explaining Why.
- Are Vaccines Safe? - Vaccinate Your Family.

# Measles Exposure and Outbreak Questions

**What should be done if someone believes they have been exposed to someone who has measles or believes they have measles?**

Immediately call the healthcare provider and let them know about potential exposure and any symptoms, so the provider can instruct on next steps. The healthcare provider can make special arrangements to evaluate the patient, if needed, without putting other patients and medical office staff at risk.

If you are seriously ill and need to go to the emergency room, call ahead to let them know you are coming and have concerns you may have measles. Likewise, if you need to call 911 tell them as well.

**Where can I find information about potential measles cases in Michigan?**

Michigan has a Measles Update webpage that provides guidance on measles both nationally and in Michigan. Measles Updates

**Where do I find information about travel vaccinations and any travel warnings?**

Travel warnings by destination can be found at . https://wwwnc.cdc.gov/travel

# Measles Treatment

**What is the treatment for measles?**

Treatment includes bed rest, fluids, and medicine for fever and headache. Antibiotics do not help and will not cure measles or prevent the disease. There are no antiviral drugs for treating measles.

**Should a person with measles stay home?**

Measles is very contagious. Someone with measles is contagious from four days before the onset date of the rash through the end of the fourth day after the onset of the rash (the onset date of the rash is day zero). During this time, those infected should stay home and not attend work, school, or social activities unless they are seeking medical care. If seeking medical care, patients should call ahead to the medical facility and local health department to make arrangements to minimize exposures.

**Does Vitamin A prevent measles?**

Vitamin A does not prevent measles; only the MMR vaccine can prevent measles. The best way to prevent measles is to be vaccinated with the recommended number of two doses of measles vaccine. Vitamin A should not be used to try to prevent measles, nor should it be used in high dosages as it can lead to toxicity (e.g. nausea, vomiting, headache, fatigue, joint and bone pain, blurry vision, skin/hair problems, increased intracranial pressure, liver damage, confusion, coma, etc). Vitamin A may be useful as a supplemental treatment once someone has a measles infection, especially if they have a severe case of measles or low vitamin A levels and are **under the care of a doctor**.

Most people get enough vitamin A in their diet from foods like carrots, bell peppers, fish, broccoli, yogurt, and chicken. However, some people may need a supplement. Because vitamin A builds up in the body over time, there is a risk of vitamin toxicity with taking too much supplemental vitamin A. For example, during pregnancy, vitamin A toxicity can cause birth defects, so it is **important to talk to your doctor before taking additional vitamin A**.

# Dispelling Misinformation Around Vaccination

### Does the MMR vaccine cause autism?

There is no scientific evidence that any vaccine, including MMR, causes autism. View information on Autism Spectrum Disorder from the American Academy of Pediatrics.

In 1998, a British researcher named Andrew Wakefield raised the notion that the MMR vaccine might cause autism. In the medical journal The Lancet, he reported the stories of eight children who developed autism and intestinal problems soon after receiving the MMR vaccine. To determine whether Wakefield's suspicion was correct, researchers performed a series of studies comparing hundreds of thousands of children who had received the MMR vaccine with hundreds of thousands who had never received the vaccine. They found that the risk of autism was the same in both groups. The MMR vaccine didn't cause autism. Some parents wary of the safety of the MMR vaccine stopped getting their children immunized. As immunization rates dropped, particularly in the United Kingdom and, to some extent, the United States, outbreaks of measles and mumps led to hospitalizations and deaths that could have been prevented.

Then What Does Cause Autism? - by Thomas Farley

### Can a child who received the MMR vaccine spread measles?

No, since the introduction of measles vaccine in the United States in 1963, with millions of MMR doses being administered, transmission of measles through the MMR vaccine has not occurred for anyone (immunocompetent or immunocompromised).

### Is it OK for a 1-year-old to get the MMR vaccine if mom is pregnant or if someone in the house is immune compromised?

Yes. The MMR vaccine can be given to children who live with pregnant women or immune compromised people. While the MMR vaccine contains live measles, mumps and rubella viruses, they are weakened so much that they are not usually transmitted from the vaccinated person to other household members.

### I've heard it's better for children to get measles from another kid than to get a measles shot. Is that true?

No. Measles is a dangerous disease, and the vaccine is very safe. The risks of severe illness, death, or lifelong complications from measles infection far outweigh the generally mild side effects some people experience following vaccination. Serious reactions to the MMR vaccine are rare.
The difference between vaccination and natural infection is the price paid for immunity. The impact from disease can be life altering, including death. A vaccine affords us protection with lesser quantities of virus or bacteria, the control of scheduling the exposure, and the knowledge that immunity will be gained without experiencing severe illness.

Vaccine Science: How Do Vaccines Work? | Children's Hospital of Philadelphia

**If my chance of getting the disease is low, why do I need to get myself or my child vaccinated?**

It is true that vaccination has reduced measles and most other vaccine-preventable diseases to very low levels in the United States. However, measles is still very common—even at epidemic levels—in other parts of the world. Visitors to the U.S. and unvaccinated U.S. travelers returning from other countries can unknowingly bring (import) measles into the United States. The measles virus is very contagious and can live for up to two hours on a surface or in an airspace where an infected person coughed or sneezed. Thus, even one case of measles can cause the disease to spread very quickly if many people are unvaccinated or not immune.

To protect your children, yourself, those who cannot medically be vaccinated, and others in the community, it is important to be vaccinated against measles. You may think your chance of getting measles is small, but the disease still exists and can still infect anyone who is not protected.

**Can I get measles if I'm fully vaccinated?**

The MMR vaccine works very well but breakthrough cases, or cases in a person that is fully vaccinated, are possible but the illness is typically mild.

Breakthrough infections usually happen in communities experiencing an outbreak where high levels of measles virus are circulating. Though the vaccine is very effective it is not 100% effective, and being exposed to high amounts of virus can still cause infection. Our own immune system and health are a factor as well.

## Vaccine Resources

**Measles**

- Measles Updates.
- Recognizing and Addressing Measles in a Pediatric Practice.
    - Think Measles: Recognizing and Addressing Measles in Pediatric Practice.
- Measles Vaccination for Specific Groups | Measles (Rubeola) | CDC.
- Ask The Experts About Vaccines: MMR (Measles, Mumps, and Rubella) | Immunize.org.
- Clinical Guidance on Measles | Free Clinical Guidance | Healio.

**How can I talk to others about getting vaccinated?**

- https://www.voicesforvaccines.org/course/becoming-trusted-messengers/.

**Where can I find information about vaccines and vaccine safety?**

- https://www.vaccineinformation.org/.
- https://www.vaccinesafety.edu/.