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## Measles Infection FAQ for Patients and Families

### What is measles?

- Measles (also called rubeola) is a vaccine-preventable disease caused by a human-specific virus.
- Measles is one of the most highly contagious diseases: About 90% of individuals exposed to measles who are not immune or vaccinated will get the disease.
- Measles was declared eliminated in the United States in 2000 but is still common in many parts of the world. Measles is brought into the U.S. by unvaccinated travelers, mainly Americans visiting abroad, who are infected while in other countries.

### Is measles preventable?

- Yes, measles can be prevented with a vaccine. Two doses of MMR (measles-mumps-rubella) vaccine or MMRV (measles-mumps-rubella-varicella) vaccine are recommended.

### 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 95% of people. The 2nd dose increases immunity to 97%.

### What are the symptoms of measles?

- Symptoms begin with fever, cough, runny nose, and red and watery eyes that typically develop 7-10 days after someone is exposed to measles.
- 2 to 3 days after symptoms begin, tiny white spots with bluish-white centers, called Koplik's spots, can sometimes be found inside the mouth.
- 2 to 5 days after symptoms begin, a red or reddish-brown rash with flat and raised parts appears on the head and then spreads down to the rest of the body. When the rash appears, the ongoing fever may spike higher.

### What are the complications of measles?

- Common measles complications include ear infections, diarrhea and pneumonia
- Acute encephalitis (inflammation of the brain) occurs in about 1 out of every 1000 cases and can lead to permanent brain damage.
- Serious measles complications are more common among children under 5 years of age and adults over 20.
- For every 1,000 children who get measles, 1 to 3 may die from infection in their lungs or brain.
- Measles in pregnant women may lead to miscarriage or premature birth.

### How is measles spread?

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Measles is spread from person to person through airborne spread from breathing, coughing, or sneezing or by direct contact with respiratory droplets. The virus can survive suspended in the air for 2 hours after an infected person leaves an area.

#### **Does Vitamin A prevent measles?**

- No, you should not give vitamin A to anyone in the hopes of preventing measles; only the MMR vaccine can prevent measles.
- Vitamin A can be toxic in high doses (causing nausea, vomiting, headache, fatigue, joint and bone pain, blurry vision, and skin/hair problems). It can also lead to even more severe problems like increased intracranial pressure, liver damage, confusion and coma.
- Vitamin A also does not treat measles. During infection with measles, infected people may develop vitamin A deficiency. Two doses of Vitamin A may be given by a healthcare provider to people infected with measles as it may help prevent the illness from becoming more severe.

#### **When should parents be concerned?**

- If your child develops a combination of symptoms, including high fever, cough, runny nose, red/watery eyes, and a distinctive rash, after being exposed to someone with measles or after traveling internationally or nationally to an area with ongoing transmission of measles, particularly if your child is unvaccinated or severely immunocompromised, then you should contact your healthcare provider for further guidance.

#### **What should I do if I'm concerned my child has measles?**

- Please call your child's healthcare provider for guidance, before taking your child to a clinic or the emergency room (ER).
- Your healthcare provider will ask questions to determine whether a visit to the office or ER is necessary. A telehealth appointment may be recommended.
- If your child's doctor advises an in-person visit, ensure your child wears a face mask. If your child is too young for a mask, you can drape a blanket over the stroller or car seat. Your healthcare provider may also give you other instructions designed to help prevent the possible spread of infection.

#### **What should I do if my unvaccinated child has been exposed to measles?**

Please call your child's healthcare provider immediately. Measles vaccine or other medication may be recommended by your healthcare provider to help reduce your child's risk of developing measles.

#### **Do adults need an MMR booster?**

- According to CDC, adults are considered protected against measles if:
  - they have written documentation of at least one dose of MMR vaccine on or after their 1st birthday, or written documentation of two doses of MMR vaccine if they are considered high risk,

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- they have a laboratory test confirming measles immunity or a prior measles infection
- they were born before 1957
- If you're not sure whether you are fully vaccinated, talk with your healthcare provider.
- During measles outbreaks, health departments may provide additional recommendations, including a second dose of MMR for adults who have received only one dose previously.
- There are no recommendations to receive a third dose of MMR vaccine during measles outbreaks.

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

- Approximately 5% of people may develop rashes after receiving the MMR vaccine, usually between 5 and 12 days after getting the vaccine.
- People who develop rash and/or fever after getting the MMR vaccine are not considered contagious.

**Can an immunocompromised child receive the MMR vaccine?**

- Please discuss this with your healthcare provider. In general, people who are severely immunocompromised should not receive the MMR vaccine.

**Can an immunocompromised child receiving the MMR vaccine spread measles?**

- The spread of measles through the MMR vaccine has not occurred for anyone (immunocompetent or immunocompromised).

**Can an immunocompromised person be around someone who just received the MMR vaccine?**

Yes, an immunocompromised person can be around someone who just received the MMR vaccine.

**How is measles diagnosed?**

- Measles diagnosis is confirmed through laboratory testing. The most common tests for diagnosing measles are a blood test to detect measles IgM antibody and a PCR test to detect measles RNA from a swab in the nose.

**Is there a treatment for measles?**

- There is no medication to treat measles. Treatment for measles is supportive, meaning providing care that helps relieve symptoms.
- To reduce the risk of complications, two doses of Vitamin A are recommended for children diagnosed with severe measles.

**Should I have a "measles party?"**

- No! You should not intentionally expose anyone to measles. Measles can cause severe complications and death, even in otherwise healthy people.



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**Resources:**

Centers for Disease Control and Prevention (CDC): <http://www.cdc.gov/measles/>

CDC yellow book, 2024: <https://wwwnc.cdc.gov/travel/yellowbook/2024/infections-diseases/rubeola-measles>

American Academy of Pediatrics. Red Book: 2024–2027 Report of the Committee on Infectious Diseases (33rd Edition)