

MEASLES FACT SHEET

Overview

Measles is a disease caused by a virus that has affected humans for centuries.

Signs and Symptoms

The symptoms of measles generally appear around [7 to 14 days](#) after a person is infected.

- Measles typically begins with high fever (may spike to more than 104°F), cough, runny nose (coryza) and red, watery eyes (conjunctivitis).
- 2 to 3 days after symptoms begin, tiny white spots ([Koplik's spots](#)) may appear inside the mouth.
- 3 to 5 days after symptoms begin, a rash breaks out. It usually begins as flat red spots that appear on the face at the hairline and spread downward to the neck, trunk, arms, legs, and feet. Small, raised bumps may also appear on top of the flat red spots. The spots may become joined together as they spread from the head to the rest of the body. When the rash appears, a person's fever may spike to more than 104° Fahrenheit.
- The [rash persists for 5 or 6 days](#) and then the rash fades in the order of appearance.
- Other symptoms of measles include lack of appetite, swollen lymph nodes and diarrhea (especially in infants).

Causes and Transmission

Measles is caused by a virus. People get measles by breathing in droplets containing the virus that have become airborne from an infected person. Infection can also happen by coming in direct contact with nasal or throat secretions of an infected person. Measles is considered one of the most highly communicable infectious diseases. [Infected people are contagious](#). If other people in the infected area breathe the contaminated air or touch the infected surface then touch their eyes, nose or mouth they can become infected. Airborne transmission has been documented in closed areas for up to two hours [after the patient with measles occupied the area](#).

Risk Factors

Any person who has not been vaccinated against measles or who has not been infected with measles is at risk for getting infected. People at [higher risk](#) for complications include children younger than 5 years, pregnant women, adults older than 20 years of age, people with a [vitamin A deficiency](#) and those with a compromised immune system, such as from leukemia or HIV infection.

Complications

Complications of measles are common with one or more occurring in [about 30 percent of cases](#). Complications include:

- Diarrhea;
- Middle ear infection;
- Pneumonia;
- Brain inflammation, Encephalitis;
- Seizures or convulsions; and
- Death.

Tests and Diagnosis

Measles should be suspected in any person with all of the following:

- Fever (101°F/38.3°C or higher) and rash that lasts for at least 3 days;
- Other measles symptoms (cough, runny nose (coryza) or pink eye (conjunctivitis), or [Koplik's spots](#)); and
- [Recent travel abroad to an area where measles is common or possible contact](#) with a case of measles.

Diagnosis is confirmed by laboratory testing

Diagnosis is confirmed by laboratory testing. This could include testing one or more of the following:

- Blood can be tested for the presence of measles antibodies (IgM and IgG).
- Urine can be tested for the presence of the virus.
- A swab of the nose or throat can be tested for the presence of the virus.

[Lab samples can be analyzed at the Pennsylvania State Laboratory.](#)

Treatments

Although there is no specific treatment for measles, any complications should be managed appropriately. A vitamin A supplement may be given at the time a person is diagnosed to prevent some complications.

Prevention

[Immunization against measles](#) is the best way to prevent becoming infected. Two doses of measles vaccine, given at 12-15 months and at 4-6 years of age, are recommended. In the United States, two types of vaccines for measles are available:

- MMR – combination of vaccines for measles, mumps, and rubella (German measles)
- MMRV – combination of vaccines for measles, mumps, rubella, and varicella

In persons who may have been exposed to measles, vaccination may prevent measles disease if given within 3 days of exposure. Another biological material called immune globulin may prevent disease if given within 6 days of exposure.

A person is considered immune if they:

- Have had two doses of measles vaccination, separated by at least one month, while 12 months of age or older.
- Show immunity to measles in blood work; or
- Were born before Dec. 31, 1956.

[People who meet special conditions](#), such as those who travel to measles endemic locations or those who work in special settings such as health care, will only be considered immune if they meet the top **two** bullets.

Even if you were vaccinated, you may still be at risk if you were vaccinated with an inactivated vaccine, which was used from 1963 through 1967, and have not been revaccinated, or you were born after 1957, have only received one dose of MMR vaccine, **and** are at [high risk](#).

Disease Patterns

Prior to widespread immunization, measles was a common childhood disease, with 500,000 diagnosed cases and 500 deaths occurring each year in the United States. However, because not all patients went to the doctor for diagnosis, the actual number of cases was estimated at 3 to 4 million cases annually. After widespread vaccination started in 1963, the number of cases reported in the U.S. dropped by about 98 percent. In the late 1980s and early 1990s, there was a dramatic increase in the number of cases of measles in the U.S. that was caused by low vaccination rates, especially in many larger cities.

Despite having a safe and effective vaccine for over 50 years, measles is still the leading vaccine-preventable disease killer of children throughout the world. Large outbreaks continue to occur in Asia, Africa, and some parts of Europe. Even in countries and regions with high vaccination rates, outbreaks continue to take place within groups of people who are under- or unvaccinated.

Additional Information

Centers for Disease Control and Prevention: <https://www.cdc.gov/measles/>

Epidemiology and Prevention of Vaccine-Preventable Diseases (Pink Book), Measles Chapter: <https://www.cdc.gov/vaccines/pubs/pinkbook/meas.html>

This fact sheet provides general information. Please contact your physician for specific clinical information.

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