

# Measles

Measles has been in the news a lot lately due to several outbreaks across the United States. As of February 2015, Montana remains measles-free since 1990 but this could easily change.

Measles is a viral infection that causes a fever followed by cough, rash, and upper respiratory symptoms. The virus causing measles spreads very easily from person to person. Unvaccinated individuals who have not had the illness stand a 90% chance of developing the disease if exposed.

## **Signs and symptoms:**

The onset of measles ranges from 7 to 14 days (with most occurring in 10 to 12 days) after exposure to the virus.

The virus is spread when someone coughs or sneezes. The virus is active in an area for up to two hours even if the infected person has left the area. Since someone with measles is contagious for 5 days before the appearance of a rash and for up to 4 days after the rash resolves, it is very easy to unknowingly come in contact with the virus. There are usually no symptoms apparent during the incubation period.

The measles virus gains entry into the body through the lungs or conjunctivae (lining of the eyelids and whites of the eyes). The virus then replicates and spreads throughout the body through the blood stream.

The first symptoms of measles include fever, fatigue, not feeling well, loss of appetite, cough, conjunctivitis, and coryza. Coryza is an inflammation of the lining of the nose causing congestion and a runny nose. Spots that look like grains of salt or sand on a red base can appear in the mouth. These are called Koplik spots.

The hallmark rash (exanthema phase) appears about 14 days after exposure. This rash consists of red, raised spots that start on the face. The rash spreads around the neck, upper body, then lower body and arms and legs. The palms and soles are rarely affected. As the rash spreads, the spots form large red patches.

As the rash appears, there is also a high fever, enlarged lymph nodes, sore throat, sneezing and coughing.

After about two days, people begin to feel better. The rash darkens to a brownish color and begins to fade. There is often flaking of the skin, like after a sunburn. The rash usually lasts 6 to 7 days but some people continue to cough for one or two weeks.

After having measles, the person generally develops a lifelong immunity.

**Complications:**

If a person develops complications such as pneumonia or encephalitis (an infection of the brain), death can occur. Other complications include gastroenteritis, diarrhea, hepatitis, and appendicitis. Ear infections are fairly common and can lead to loss of hearing. Involvement of the heart can also occur with pericarditis (infection of the lining surrounding the heart) and myocarditis (infection of the heart muscle).

**Treatment:**

There is no specific treatment for measles. Generally the person should rest, drink plenty of fluids and take something such as acetaminophen to help with fever and aches.

IV rehydration may be necessary in some. Vitamin A supplementation is also considered for many especially children as it has been shown to decrease the risk for complications and death.

**Diagnosis:**

The diagnosis of measles is generally made from the classic clinical picture. However, there are tests that can be run on blood, swabs from the nose and throat, or from urine. Viral cultures can also be done to confirm diagnosis.

**Protection:**

There is a vaccine called the MMR that keeps people from getting measles. The MMR vaccine protects against measles, mumps, and rubella and is generally given in two shots. Because of the success of the vaccine, measles was rarely seen in the United States until the last few years. Between 2000 and 2011, 88% of the cases reported were due to the virus having been brought into the country by foreign travelers. In 2013, the number of cases seen in the United States tripled. Most of those cases were outbreaks in children whose parents had refused vaccination. The number of measles cases seen today continues to increase.

**Vaccinations** (taken from a recent DPHHS publication):

- Children should receive their first dose of MMR between the ages of 12 and 15 months. The second dose is usually given before entering school, around 4 to 6 years of age.
- Adults born in 1957 or later should have had at least one dose of MMR vaccine. Adults born prior to 1957 are assumed to be immune due to natural infection.
- Health care personnel, college students, and international travelers need two appropriately spaced doses, unless there is evidence of immunity.
- People who have received two doses of MR vaccine do not need a booster dose.