

## **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 about seven to 14 days after a person is infected.

- Measles typically begin with high fever, cough, runny nose (coryza) and red, watery eyes (conjunctivitis).
- Two or three days after symptoms begin, tiny white spots (Koplik's spots) may appear inside the mouth.
- Three to five 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.
- After a few days, the fever subsides and the rash fades.
- 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 from four days before to four days after the rash starts. In addition, 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, adults, pregnant women, and anyone with vitamin A deficiency, malnutrition or immune system problems.

## **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;
- Seizures; and
- Death.

## **Tests and Diagnosis**

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

- Fever (101<sup>0</sup>F or higher) and rash that lasts for at least three days;
- Other measles symptoms (cough, runny nose or conjunctivitis [pink eye], 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 of blood for evidence of recent infection through detection of antibodies to measles. In addition to blood tests, it is important to test urine and throat/nasopharyngeal swabs for presence of the virus.

## **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 (chickenpox)

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

In accordance with Pennsylvania Department of Health regulations, a person with a case of measles who attends or works in a school or child care facility must be excluded until four days after the start of the rash. In addition, if measles is identified in a school or daycare, exposed, susceptible people (see below) will be excluded from public places until they are no longer potentially infectious.

A person is considered susceptible (not immune) if he or she:

- Has not had two doses of measles vaccination, separated by at least one month, while 12 months of age or older;
- Does not show immunity to measles in blood work; or
- Was born after Dec. 31, 1956

Susceptible people will be excluded from school/daycare if they have not received measles vaccination within 30 days prior to the outbreak. This exclusion will continue until:

- The person proves they received a measles vaccination; or
- There are no further cases of measles in the school or day care center for 14 days

## **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 (U.S.). 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: <http://www.cdc.gov/measles/>

Epidemiology and Prevention of Vaccine-Preventable Diseases book (Pink Book),  
measles chapter: <http://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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