



Measles

What is measles?

- A highly contagious and acute viral disease caused by the measles virus. Humans are the only natural host for the measles virus.
- Outbreaks occur when unimmunized people become infected and infect others who are not immunized. Measles was under control but has reemerged in states where vaccination rates have fallen.

What are the signs or symptoms?

- Fever, cough, runny nose, and red, watery eyes.
- Small, typically white spots in the cheek area inside the mouth (called Koplik spots).
- Appearance of rash at hairline spreading downward over body.
- May have diarrhea, pneumonia, or ear infection as a complication.
- Complications may be serious and result in a secondary bacterial pneumonia, brain inflammation, convulsions, deafness, intellectual disability, or death.

What are the incubation and contagious periods?

- Incubation period: 8 to 12 days (but up to 21 days in some cases) from exposure to onset of signs or symptoms
- Contagious period: From 1 to 2 days before the first signs or symptoms appear (4 days before the rash) until 4 days after the appearance of the rash

How is it spread?

- Airborne route: Breathing small particles containing virus floating in the air. These particles first come from a child's respiratory secretions as droplets after a cough or sneeze. These germ-containing particles dry out quickly in the air or fall onto surfaces and then dry out and attach to dust particles, which become suspended again in the air. These particles travel along air currents and can infect people in another room.
- Even brief exposure or shared airflow poses a high risk of infection for people who have not had the disease before, have not been protected by the measles vaccine, or have a problem with their immune system.



Face of a child with measles, characteristic of the third day of the rash

How do you control it?

- Measles is a vaccine-preventable infection. Immunize according to current schedule—when a child is 12 to 15 months of age and with a second dose at 4 to 6 years of age.
- Review immunization status of all children and staff members and identify those who are not protected by vaccine in the event there is a risk of exposure to someone with the disease that the vaccine prevents.
- Exclude infected children until 4 days after the rash starts when they are no longer contagious. Measles is a highly contagious infection. Because measles viruses are spread by the airborne route, infected children should not be cared for in any child care area and should be sent home as soon as possible. They should not be placed in a special room for children who are ill.
- Exclude exposed children and staff who have not been immunized (or who are incompletely immunized for their age) until they become immunized. If they are not immunized because of an accepted exemption from immunization, continue to exclude them until the local health department determines it is safe for them to return. (See the section Exclude from educational setting? for duration of exclusion of these individuals.)
- A single case of measles anywhere in the United States is considered to be a reportable outbreak.
- Use good hand-hygiene technique at all the times listed in Chapter 2 and routine infection control measures.

What are the roles of the educator and the family?

- Report the infection to the staff member designated by the early childhood education program or school for decision-making and action related to care of ill children. That person, in turn, alerts possibly exposed family and staff members and parents of unimmunized children to watch for symptoms and notifies the Child Care Health Consultant.
- Report the infection to the local health department. If the health professional who makes the diagnosis does not inform the local health department that the infected child is a participant in an early childhood education program or school, this could delay controlling the spread.
- Review and ensure all children have received measles, mumps, rubella (MMR) vaccine according to the current immunization schedule.
- Ensure staff members who have had fewer than 2 doses of vaccine are properly immunized unless they are documented to have had the disease or were born before 1957. Individuals born before 1957 are presumed immune because measles was so widespread before vaccine became available, although being in this group is not a guarantee of immunity. A laboratory test is available for testing immunity.
- During investigation of a suspected case, the educational facility should exclude exposed children with weakened immune systems or who have not received MMR vaccine routinely. In an outbreak, infants 6 to 11 months of age can be immunized and then re-immunized at 12 months of age. The 12-month immunization is still necessary because the child's immunity from the previous dose of vaccine may be blocked by the mother's measles antibodies that cross the placenta during pregnancy and are present in the child for a year.

Exclude from educational setting?

Yes.

- Measles is a highly communicable illness for which routine exclusion of infected children is warranted.
- Unimmunized children should be excluded. If unimmunized, exposed children are excluded for this reason, they may be readmitted on receiving measles immunization. If they remain unimmunized, they should be excluded for 21 days after the onset of rash in the last case of measles.
- Immune globulin may prevent or modify measles disease in an unimmunized susceptible person if given within 6 days of exposure, especially infants younger than 6 months, pregnant women, and those with immune deficiency.

Readmit to educational setting?

Yes, when all the following criteria are met:

- Four days after beginning of rash
- When the child is able to participate and staff members determine they can care for the child without compromising their ability to care for the health and safety of the other children in the group

Comment

The childhood and adolescent immunization program in the United States has resulted in a greater than 99% decrease in the reported incidence of measles since 1963. However, travelers from other countries where measles is more common may cause outbreaks among unimmunized people in the United States.

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