



School Health Advisory: MEASLES

“Measles is a virus that can be deadly and everyone should receive the measles vaccine.”

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WHAT IS MEASLES?

Measles or rubeola is an enveloped RNA virus. Humans are the only host for measles. Measles is one of the most highly communicable of all infectious diseases; the attack rate being 90% in susceptible individuals exposed to measles. A population immunity of greater than 95% is needed to stop ongoing transmission.

HOW DO YOU CATCH MEASLES?

Measles is spread by direct contact of infectious droplets or, less commonly, by airborne spread. Patients infected with wild-type measles virus are contagious 4 days before the rash to 4 days after the appearance of the rash. Immunocompromised patients may have prolonged excretion in respiratory tract secretions and can be contagious for the duration of the illness. The incubation period generally is 8 to 12 days from exposure to symptoms. The average interval between the appearance of a rash in the index case to subsequent cases is 14 days, with a range of 7 to 21 days.

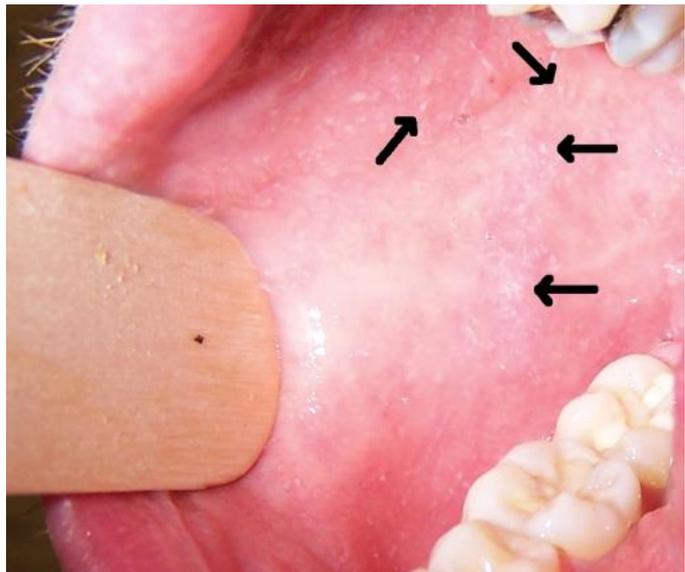


SIGNS AND SYMPTOMS

Measles typically begins with a fever, cough, runny nose (coryza), red eyes (conjunctivitis) and sore throat with Koplik spots (White grains on red base) in the mouth. This is followed by the fever elevating daily to up to 105 degrees and a flat slightly elevated rash that starts on the forehead and progresses down the body and out onto the arms and legs.

COMPLICATIONS

- **EAR INFECTIONS** – one of the most common complications.
- **BRONCHITIS, LARYNGITIS, or CROUP** – measles may cause inflammation of vocal cords (laryngitis), inflammation of the walls of the bronchi (bronchitis), inflammation above and below the trachea (croup).
- **PNEUMONIA** – pneumonia is a common complication and in immune compromised patients it can be fatal.
- **ENCEPHALITIS** –inflamed brain due to measles. It can occur starting by a direct infection of the brain by the virus during the rash phase of measles or by an immune-mediated response subsequent to measles. Direct infection of the brain occurs in about 1 in 1000 patients with measles with 10 – 15% of those children dying and another 25% with permanent neurological damage. Post-infectious encephalitis occurs in 1 of 1000 with mortality of about 5% in children and 25% in adults. Also there is a group of children who appear to be fully recovered that will show attention, decision making or behavior problems when evaluated 3 years post-measles encephalitis.
- **PREGNANCY PROBLEMS** – Women that are pregnant need to take special precautions to avoid contracting measles because the disease can cause preterm labor, low birth weight, and maternal death.





TREATMENT

- There is no specific treatment for an established measles infection.
- There are measures that can protect vulnerable individuals that have been exposed.
 - **VACCINATION** – non-immunized people, including infants, may be given the measles vaccine up to 72 hours after exposure. If measles does develop, the symptoms are milder and the duration is shorter.
 - **IMMUNE SERUM GLOBULIN** – pregnant women, infants, and immune compromised people who are exposed to measles may receive an injection of immune serum globulin (antibodies). When given within 6 days of exposure they prevent the disease or shorten the course.

MEDICATIONS

- **FEVER REDUCERS** – taking acetaminophen, ibuprofen, or naproxen is helpful in reducing fever and making someone feel more comfortable with the measles.
- **ANTIBIOTICS** – should NOT be used with the exception of an ear infection or pneumonia accompanying the measles.
- **Vitamin A** – Children with low levels of vitamin A are more likely to have a more severe case of measles. Giving vitamin A may lessen the severity of measles. Vitamin A is given as a large dose of 200,000 IU for children older than 1.

COMFORT MEASURES

- **TAKE IT EASY** – get rest and avoid busy activities.
- **SIP SOMETHING** – drink plenty of water, fruit juice, and herbal tea to replace fluids lost from fever and sweating.
- **HUMIDIFIER** – to relieve cough and sore throat
- **REST EYES** – sometimes bright lights are bothersome to people with measles. Therefore dim the lights, wear sunglasses, and avoid reading and TV.

PREVENTION

- **The Center for Disease Control and the American Academy of Pediatrics recommend that children and adults receive the measles vaccine to prevent measles.**

CONCERNS WITH THE MEASLE VACCINE

- **MMR (MEASLES-MUMPS-RUBELLA) CAUSES AUTISM**

In 1998, Andrew Wakefield published a paper in Lancet. It hypothesized that MMR vaccine caused inflammation in the intestinal tract that allowed proteins harmful to the brain to enter the blood stream and damage the brain causing autism.



After the paper was published other investigators were unable to reproduce Wakefield's study. This study was retracted by Lancet in 2010 because it was found to be based on scientific misconduct. The studies were deemed fraudulent and the data was misrepresented. In addition Wakefield was struck off the UK medical register for deliberate falsification of his research.

RELIGIOUS EXEMPTIONS FOR MEASLES VACCINE

- Connecticut still allows for a medical and religious exemptions.
- No major religions prohibit vaccinations.
- Many religions provide that each individual has the right to decide whether or not to use vaccines according to their own moral conscience.

REFERENCES

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