



## Measles FAQ

Q. What are the symptoms of measles?

A. Stepwise increase in fever to 103 °F or higher, cough, coryza (runny nose), conjunctivitis (red or watery eyes), rash (usually beginning on face/head and moving downward/outward that lasts 5-6 days). Rash usually begins 2-4 days after fever.

Q. How long is a measles patient infectious?

A. Persons with measles are infectious 4 days before through 4 days after rash onset (day of rash onset is day zero). The average incubation period for measles is 10 to 12 days from exposure to prodrome (non-rash symptoms) and 14 days from exposure to rash (range: 7–21 days).

Q. What are the common complications from measles?

A. In the United States, from 1987 to 2000, the most commonly reported complications associated with measles infection were **pneumonia** (6%), **otitis media (ear infection)** (7%), and **diarrhea** (8%) (8). For every 1,000 reported measles cases in the United States, approximately one case of *encephalitis (brain swelling)* and two to three *deaths* resulted (9–11). The risk for death from measles or its complications is greater for infants, young children, and adults than for older children and adolescents.

Q. What are the vaccine recommendations for a measles outbreak?

A. **MMR vaccine** is recommended for the following potentially exposed groups:

- Exposed persons (6 months and older) without evidence of immunity to measles – administer MMR within three days of exposure. These children should be revaccinated with 2 additional doses of MMR vaccine - the first dose at 12-15 months, and the second dose at least 4 weeks later
- Preschool-aged children (1-4 years) or adults who have received one MMR dose with community-wide transmission – **a second dose** should be considered
- Adults born before 1957 and are reasonably sure they have never been vaccinated or had disease
- Healthcare workers/ volunteers or those with contact with children under the age of 5 with no vaccine documentation or lab evidence of disease/immunity
- Persons infected with HIV who are  $\geq 12$  months of age and who do not have evidence of current severe immunosuppression
- Perinatal HIV infected individuals who were vaccinated before establishment of effective antiretroviral therapy (ART) with 2 appropriately spaced doses of MMR vaccine once effective ART has been established

**IG (IM)** is recommended for the following potentially exposed groups:

- Infants 0-6mths – administer IG

The recommended dose of IG administered intramuscularly (IGIM) is 0.5 mL/kg of body weight (maximum dose = 15 mL)



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**IG (IV)** is recommended for the following potentially exposed groups:

- Severely immunocompromised persons
- Pregnant women without evidence of measles immunity who are exposed to measles

The recommended dose of IG given intravenously (IGIV) is 400 mg/kg.

Q. What is the ACIP recommended MMR vaccine schedule for children and adults?

A.

### **CHILDREN:**

- Administer the 1<sup>st</sup> MMR dose at 12-15 months and the 2<sup>nd</sup> dose at 4-6 years (the second dose can be administered before 4 years, as long as there is a 4 week gap between first and second doses)
  - For internationally traveling children, administer 1 dose at 6-11 months of age before departure. These children should be revaccinated with 2 additional doses of MMR vaccine - the first dose at 12-15 months, and the second dose at least 4 weeks later
  - Catch-up vaccination: ensure that all school-aged children have had 2 doses of MMR vaccine

### **ADULTS:**

- One dose of MMR is recommended for adults not at high risk for exposure and transmission. A routine second dose of MMR vaccine, administered a minimum of 28 days after the first dose, is recommended for adults who are students in postsecondary educational institutions, work in a healthcare facility, or plan to travel internationally.
- Persons who received inactivated (killed) measles vaccine or measles vaccine of unknown type during 1963-1967 should be revaccinated with 2 doses of MMR vaccine

Q. Are there any MMR vaccine contraindications?

A. There are some contraindications to keep in consideration:

- Avoid MMR in patients with a high fever, serious disease, or in pregnant women
- Mild concurrent infections are not a contraindications, and measles vaccination is **not** known to exacerbate TB
- Those with a history of an anaphylactic reaction to neomycin, gelatin, or other components of the vaccine should not be vaccinated
- Measles vaccine is contraindicated in persons who are severely immunocompromised as a result of congenital disease, HIV infection, advanced leukemia or lymphoma, serious malignant disease or treatment with high-dose steroids, alkylating agents or antimetabolites or in persons who are receiving immunosuppressive therapeutic radiation.

Q. What are the potential adverse events that could occur with MMR vaccination?



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A. MMR vaccine might cause fever (<15%), transient rashes (5%), transient lymphadenopathy (5% of children and 20% of adults), or parotitis (<1%). Febrile reactions usually occur 7–12 days after vaccination and generally last 1–2 days. The majority of persons with fever are otherwise asymptomatic.

- IOM concluded that the body of evidence favors rejection of a causal association between MMR vaccine and risk for autistic spectrum disorders (ASD), including autism, inflammatory bowel diseases, and type 1 diabetes mellitus.

Q. How effective is the measles-containing vaccine?

A. One dose of measles-containing vaccine administered at age  $\geq 12$  months was approximately 94% effective in preventing measles in studies conducted in the WHO Region of the Americas. Measles outbreaks among populations that have received 2 doses of measles-containing vaccine are uncommon. The effectiveness of 2 doses of measles-containing vaccine was  $\geq 99\%$  in two studies conducted in the United States.

*For additional information, please contact the Immunization Branch at (800) 252-9152*