

## **Measles Faq**

### **Measles**

Measles is a highly contagious disease that is usually seen in children, but can affect adolescents and adults as well. It is caused by a rubeola virus which belongs to the genus Morbillivirus of the family Paramyxoviridae.

### **Clinical features of Measles**

- The incubation period is 10 to 14 days (often longer in adults than in children).
- The prodromal phase begins after the incubation period and lasts for several days. It is characterized by malaise, fever, loss of appetite, and ‘the three C’s’: conjunctivitis (red, watery eyes), cough and coryza (runny nose); the illness may resemble a severe respiratory tract infection. Towards the end of the prodrome, just before the appearance of the rash, Koplik’s spots may appear on the buccal mucosa. These are tiny white spots with bluish-grey centres and are pathognomonic for measles, but may easily be overlooked.
- The rash of measles usually appears 3 – 5 days after the start of the prodrome. It begins on the face and spreads down the body to involve the neck, trunk, and lastly the arms and legs, including the palms and soles. It is erythematous and maculopapular and becomes confluent as it progresses, especially on the face and the neck. During the healing phase, the involved areas (except palms and soles) may desquamate. The rash usually lasts about 5 days. The patient with measles is usually most ill during the first or second day of the rash. Several days after the appearance of the rash the fever abates and the patient begins to feel better.
- The duration of the uncomplicated illness from late prodrome to resolution of the fever and rash, is 7 to 10 days.

The case definition for a suspected measles case: any individual presenting with

- fever ( $\geq 38^{\circ}\text{C}$ ) and rash and one or more of the following: cough, coryza (runny nose) or conjunctivitis (red eyes)

### **Transmission of infection**

Measles is airborne and is spread by droplets from respiratory secretions of infected persons; it is transmitted by breathing, coughing or sneezing, and also by direct contact with infected

nasal or throat secretions. It is one of the most communicable of the infectious diseases. Nosocomial (hospital acquired) infections are well described, particularly amongst children.

### **Patients with measles most infectious**

Patients with measles are most infectious during the late prodromal phase of the illness when the cough and coryza are at their peak. The disease is contagious from about 4 days before until about 4 days after the onset of rash.

### **Recommended diagnostic tests for measles**

The recommended serological test is a measles IgM test. This confirms the diagnosis of acute measles infection. Measles IgG testing is not recommended for the diagnosis of acute measles because IgG remains positive for many years after vaccination or disease, and a positive IgG cannot tell you if the patient has acute measles. Another common cause of rash is rubella. For this reason specimens from suspected measles cases are often tested for rubella IgM. Measles IgM testing is offered free of charge at the NICD measles laboratory for all suspected measles cases. It is essential that blood specimens from patients testing positive for measles IgM in the private sector should urgently be forwarded to the NICD for confirmation and additional molecular testing.

Urine specimens from patients testing positive for measles IgM are tested by reverse transcriptase polymerase chain reaction (RT-PCR) at the NICD. This allows us to confirm the presence of measles virus and to do additional tests such as genotyping. Throat swabs may be used as an alternative to the urine specimen.

### **Treatment for Measles**

Treatment is supportive, including antipyretics and fluids as indicated. Bacterial superinfection should be promptly treated with appropriate antimicrobials. Vitamin A, 200000 IU should be administered orally to all children with suspected measles for two days as this may decrease the severity of measles complications.

### **Complications of measles:**

The most common complications are pneumonia (either due to the measles virus or as a result of secondary bacterial or viral infection), diarrhoea, croup, otitis media, mouth ulcers and eye pathology (leading to blindness). Rarely, encephalitis may complicate measles resulting in permanent brain damage. Myocarditis, pneumothorax, pneumomediastinum, appendicitis and

sub-acute sclerosing panencephalitis (SSPE), a fatal chronic infection of the brain, have all been reported but are uncommon complications.

### **Differential diagnosis of Measles**

The differential diagnosis includes other infections presenting with a fever and rash:

- o Rubella
- o Scarlet fever (*Streptococcus pyogenes*)
- o Erythema infectiosum (parvovirus B19)
- o Meningococcaemia
- o Typhoid fever
- o Varicella

### **Measles Prevention**

Childhood vaccination is the most important preventive strategy against measles. Children are vaccinated against measles at 9 months of age and can receive a booster dose between 15-18 months of age. The measles vaccine is safe and effective. After these 2 doses of vaccine the protection rate is 95%. Immunity persists for many years after vaccination.

During outbreaks, vaccination campaigns often target schools and other institutions (creches, orphanages etc) to immunize children. Adolescents and adults who are unsure if they have been vaccinated during childhood can also receive vaccine, especially if they may be in contact with measles cases (e.g. health care workers, school teachers).

### **Measles Vaccine FAQ - General Public**

#### **1. Why vaccinate?**

Measles is usually a self limiting disease but can lead to serious complications like pneumonia, blindness, encephalitis (brain infection) or even death. Vaccination is easy, inexpensive, safe and very effective at preventing disease.

#### **2. How does the measles vaccine work?**

The measles vaccine is a live attenuated vaccine, which means that it is a weakened version of the virus itself. The vaccine cannot cause disease but allows the body to prepare itself for a real infection. Immunity after vaccination is usually life-long.

### **3. Who must be vaccinated and when?**

All children should be vaccinated at a young age, and the vaccine is included in the National Immunizations schedule. The vaccine is given at 9 months and can be repeated at 15-18 months of age.

Older children, adolescents and adults may also be vaccinated during outbreaks of measles, particularly if they have a high-risk of developing complications.

### **4. Who should not be vaccinated?**

People who have had a life-threatening reaction after receiving a previous measles vaccine.

Pregnant woman should generally not receive the vaccine and must take necessary precautions to prevent pregnancy until four weeks after immunization.

Persons with severely compromised immune systems (including leukaemia & lymphoma and certain cancers) should not receive the vaccine.

Persons receiving chemotherapy, radiation therapy or high-dose corticosteroids should not receive the vaccine.

Persons living with HIV are at risk for complications of measles and should therefore receive vaccine.

If you are not sure whether you should be receiving the vaccine or not (due illness or chronic medication) please contact your doctor first.

### **5. What side effects (adverse reactions) can occur?**

The most common side effects or adverse reactions are fever and a mild rash (which occurs in less than 5% of people). These are harmless side effects and do not last long.

Serious side effects include allergic reactions but are very rare.

### **6. Can the vaccine cause autism or Attention Deficit Hyperactivity Disorder (ADHD)?**

No, scientific evidence shows that measles vaccine does not cause autism or ADHD.

### **7. Can the vaccine itself cause measles?**

The vaccine does not cause measles, but may cause mild measles-like symptoms which disappear within a short period of time.

### **8. Can persons with an egg allergy be vaccinated?**

A known egg allergy is not a valid reason to avoid the measles vaccine.

### **9. Can measles vaccine be given with other vaccines?**

The vaccine can be given together with other vaccines.

### **10. Where can I learn more?**

[www.who.int/immunization](http://www.who.int/immunization),

[www.vaccinesafety.edu](http://www.vaccinesafety.edu)

[www.cispmmunize.org](http://www.cispmmunize.org)