



# Preventing Measles Infection

## The measles virus

The measles virus is an enveloped RNA virus classified under the genus Morbillivirus in the Paramyxoviridae family. Humans are the only natural hosts of the measles virus.

The virus is spread by aerosols from the airways during coughs sneezes and the like and can remain in the air for up to 2 hours (if not vented) after an infected person has resided in the space and for 2 hours on the immediate surface of the sick person contaminated with aerosols.

## Prevention

The most effective protection against measles is vaccination. A person/worker is protected from infection if he/she is vaccinated against measles (has received two doses of MMR vaccine) or has had measles. It is strongly recommended that all healthcare professionals be vaccinated if they have not had measles.

## General vaccinations against measles

In Iceland, vaccination against measles is carried out from the age of 18 months. Maternal antibodies protect the baby during the first months and may interfere with the response to vaccination if given very early, but maternal antibodies disappear from 6 months of age and it is therefore almost certain that vaccination at 18 months of age will provide long-term protection. If an unvaccinated child is exposed to infection, physicians will decide whether to accelerate vaccination, which cannot be done until after 6 months of age and a justification must be recorded in the medical record if MMR vaccine is given before 9 months of age. It is prudent to travel with unvaccinated children to an area where there is an increased risk of infection, measles and therefore an extra dose is sometimes given to children 6–12 months of age or an 18-month vaccination is accelerated if travelling is scheduled. A booster dose is given in general vaccinations at the age of 12 years but may be given earlier if warranted. The age of twelve was chosen here when measles had disappeared because after that age it is less important whether it is a primary vaccination course or booster to ensure a long-term response.

## In healthcare

In waiting rooms in healthcare facilities (ER, healthcare, clinics), consideration should **always** be given to separating those with symptoms of respiratory infection from others and wearing protective masks ("surgical masks"), on those with such symptoms. It is important to pay close attention to ventilation when treating patients with respiratory infections and waiting rooms. FFP2's viral masks provide the best protection if measles is suspected. Caution should be encouraged in coughing and good hand hygiene.

[Basic precautions](#) against infections should always be taken.

It is recommended that emergency healthcare organizations have contingency plans and guidance in place on what to do if a case of measles is diagnosed. Isolating the patient in a room with separately

designed ventilation or a private room with good ventilation options into the atmosphere is by far the most important.

## Disinfection

The virus is not hardy and all traditional disinfection methods work on it such as fever and all common disinfectants (alcohol, peroxides, chlorine, etc.). It is recommended to aerate very well and clean the sick person's environment with soapy water and then with disinfectant.

## Exposure tracking and response

A person with measles is considered **highly contagious** 4 days before the onset of a rash and four 4 days after the onset of a rash. Individuals with measles should remain in isolation for at least 5 days from onset of symptoms and onset of rash, but longer duration of illness is recommended and it is recommended that patients should be withheld until progress to recovery, numbness of rash and low fever.

When cases occur in Iceland, the most important aspect of tracing is to **identify unvaccinated** people who have been exposed to offer them vaccination or evaluate for antibody administration if exposure is severe and exposed cannot accept vaccination (pregnant young child, severe immunosuppression). Vaccination less than 72 hours after exposure can significantly reduce the risk of measles illness and further spread of infection. If more than 72 hours have elapsed, post-exposure vaccination is not effective in preventing illness following this specific event and there is a risk of exposure to infected others if vaccination is carried out in a healthcare facility. Those who are not safely vaccinated before and do not become ill within 3 weeks of exposure should be offered vaccination after this period. Unvaccinated household members also need to be offered vaccination, preferably within a week to 10 days after the first incident, to reduce the likelihood that one incident will lead to widespread outbreaks in the community.

## Protective equipment in healthcare facilities in cases of suspected or confirmed measles

- When treating a measles patient or staying in the same airspace as a measles patient, all staff are advised to wear a tight protective mask (FFP2). Even the vaccinated should wear such a mask as infections in fully vaccinated people have occurred, although they are rare.
- It is recommended that a person with measles wear a protective mask FFP2 for lighthouses to reduce the spread of viruses into the atmosphere.
- Goggles are suitable for those who treat the sick person up close (less than 2 metres away). Not everyone needs to wear goggles that go into the same space where a measles catheter stays.
- Disposable gloves are applicable when there may be direct contact with a potentially infectious agent (respiratory tract fluid, saliva) and careful hand washing should be done when removing gloves. Hand sanitiser is useful against the measles virus.
- A robe is not necessary in general, but may be appropriate if indicated by the patient's symptoms (large amounts of infectious agents are transmitted from the patient such as mucus from the respiratory tract, vomiting, diarrhoea and the like); a single-use plastic apron may also be used in such situations.

The above guidelines are guidelines, by general routes of transmission from patients with measles, **individual institutions may establish their own (stricter) rules for the use of measles protective equipment if they deem it necessary.**