

## Human pathogen information sheet – vaccinations keep you safe!

### What are measles?

Measles is caused by viruses and appears around the world. It is highly contagious. A measles infection is not a harmless disease: about one in 10 patients will suffer complications. In Germany, vaccinations have ensured that measles infections are now much less common. Nevertheless, there are repeated frequent cases among unprotected persons. Since increasing numbers of cases affect teens and young adults, it can no longer be called a “children’s” disease. To extinguish measles in Germany, more persons in these age groups must be vaccinated.

### How are measles transmitted?

#### *Person-to-person*

Measles viruses can spread only by person-to-person contact. Almost every contact between an unprotected person and someone with measles leads to infection – even over a distance of several metres. Coughing, sneezing or talking produces small drops of infected saliva: these airborne pathogens can spread further and then be inhaled.

### What symptoms do the patients show?

At first, patients suffer from high fever, coughing and a runny nose, as well as inflammation of the nose or throat and conjunctivitis. The characteristic skin rash only forms after a few days – starting in the face and behind the ears before spreading over the patient’s entire body. The skin rash is accompanied by another high fever and clears up after 3 to 4 days. Skin may also flake off during this process.

Measles temporarily weakens the immune system, making it more difficult to fight off other diseases. This means that **complications** can occur that are often caused by other pathogens: these include middle ear infections, bronchitis or pneumonitis. One particularly fearsome complication from measles is encephalitis: occurring in about 1 out of every 1,000 cases, 10% to 20% of the patients affected die from this. 20% to 30% suffer severe after-effects such as mental disability or paralysis.

Very rarely, a condition known as SSPE (subacute sclerosing panencephalitis) can occur several years after a patient has recovered from measles. SSPE is a progressive inflammation of the brain and nervous system, and is always fatal. Children who caught measles before the age of 12 months are particularly at risk.

### What’s the incubation period – and how long are you contagious?

The first symptoms occur roughly 8 to 10 days after being infected. It usually takes about 2 weeks before the typical skin rash appears. People with measles are contagious for about 3 to 5 days before the rash can be seen. Once the skin rash is visible, you stay contagious for 4 more days. Anyone having recovered from measles is protected against reinfection for the rest of their life.

### Who is most at risk?

Anyone who has not been infected before or does not have sufficient protection from complete vaccination may contract measles. Babies who are too young to be vaccinated are especially at risk, as are young people and young adults who missed one or both vaccinations during childhood. People with immune deficiencies, who cannot be vaccinated against measles themselves, infants and adults also run a higher risk of suffering complications if they contract the disease.

### What should I do if I fall ill?

- ▶ In the acute phase, patients should stay in bed and avoid contact with others.
- ▶ Inform your local GP’s surgery by phone that you suspect a case of measles, so that the surgery team can take appropriate precautions before your visit.
- ▶ There is no specific option available for treating measles, only for the disease symptoms – such as bringing down the fever, for example.
- ▶ Antibiotics have no effect on diseases that are caused by viruses. They are only ever prescribed if complications that are caused by bacteria occur.
- ▶ Measles is subject to the regulations of the German Prevention of Infection Act. Children and adults diagnosed with or suspected to have measles are temporarily prohibited from attending or working at community facilities such as schools or nurseries. The same applies to people living in households where someone has been diagnosed with or is suspected of having measles. Affected persons must inform the community facility of the diagnosed or suspected infection.
- ▶ The competent health authority or the attending doctor will determine when the affected person may resume attending or working at the community facility. Attendance or work may resume once the patient no longer shows any symptoms, but no earlier than the 5th day after the appearance of the skin rash.

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### How can I protect myself? *Vaccination*

The German Permanent Vaccination Commission (STIKO) recommends vaccination against measles: Preferably, it should take place using the MMR combination vaccine that protects from mumps and rubella as well.

- ▶ A two-stage vaccination is recommended *for children*. The first vaccination should take place at the age of 11 to 14 months and the second vaccination no earlier than 4 weeks after the first one and no later than reaching 24 months of age. Only then is an optimum level of protection achieved. A practical approach is to give the first MMR vaccination during the child's U6 early diagnosis exam. The first MMR vaccination can already be given when the child is aged 9 months if the child is to be admitted to a community facility before it is 11 months old.
- ▶ *Unvaccinated children* and teens should be vaccinated in a two-step procedure as soon as possible.
- ▶ It is recommended that *adults born after 1970* be vaccinated if they were not vaccinated or vaccinated only once against measles in childhood. This also applies if the vaccination status is unclear. They receive a one-step vaccination.
- ▶ A measles vaccination is also recommended *for everyone working in healthcare or community facilities born after 1970*, such as employees of day nurseries or schools, for example, or staff providing care for people with severely weakened immune systems, if these individuals were not vaccinated or vaccinated only once against measles in childhood, or if their vaccination status is unclear.

Those who had contact with measles patients and are not protected should receive the MMR vaccination as "stop-gap" vaccinations within 3 days if possible. Babies aged 9 months and over can also be vaccinated if they are at risk of infection. In some cases, this can actually prevent the disease from developing or weaken it. For contact persons who cannot be given the MMR vaccine (e.g. babies less than 6 months old or pregnant women), STIKO recommends using the option of antibodies (immunoglobulins) as a temporary prophylactic against infection.

Contact persons of measles patients who are not fully vaccinated or have gone through the illness must not attend community facilities according to the German Prevention of Infection Act. Health authorities can, at their discretion, exclude unvaccinated persons from community facilities. Such facilities can be visited only once

- ▶ a complete course of injections is documented on the vaccination record;
- ▶ stop-gap vaccination has taken place within 3 days (does not apply to contact persons who are living together with patients suffering from measles);
- ▶ protection from measles has been confirmed by laboratory testing.

### Where can I find out more? Your local health authority can provide you with further advice. Since measles infections must be reported, they will also have the latest information and be very experienced in dealing with the disease.

More (specialist) information is also available online from the Robert Koch Institute ([www.rki.de/masern](http://www.rki.de/masern)).

For more information about how vaccinations stop infection, visit the website set up by the Federal Centre for Health Education ([www.impfen-info.de](http://www.impfen-info.de)).



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