

Information sheet on pathogens in humans – vaccinations keep you safe!

What is meningococcus?

An invasive meningococcal infection is a serious illness that can become life-threatening within a few hours after initial general symptoms such as headache and fever. The bacteria *Neisseria meningitidis*, also known as meningococcus, usually cause purulent meningitis or sepsis (commonly also referred to as blood poisoning). Meningococcal disease is very rare in Germany. There are less than 4 cases per 1 million people per year.

How is meningococcus transmitted?

From person to person

Meningococcus primarily colonises the human nasopharynx. The pathogens can be transmitted to others through close contact, such as through saliva or nasal secretions. Since meningococci die quickly outside the body, an encounter between people without close contact does not usually result in transmission.

What symptoms do the sufferers show?

An illness will commonly involve the sudden onset of general symptoms such as headache, fever, shivering and dizziness with severe malaise. A life-threatening condition can develop within a few hours.

Meningococci cause two main clinical presentations, which can occur individually or together:

- ▶ **Meningitis** (inflammation of the meninges)
Fever, headaches, sensitivity to light and impaired consciousness, such as severe drowsiness or lightheadedness, are common symptoms of meningitis. A typical symptom is painful stiffness in the neck, often combined with morning vomiting or signs of circulatory failure and sometimes seizures.
- ▶ **Sepsis** (blood poisoning)
In meningococcal sepsis, the bacteria are spread throughout the body through the blood. This disrupts blood clotting. And it results in extensive haemorrhaging of the skin. In a particularly severe form of sepsis, life-threatening haemorrhages in the adrenal glands lead to circulatory shock. Sepsis can progress to multiple organ failure. This is a medical emergency that must be treated immediately. In addition to fever and a strong feeling of illness, warning signs can also include an accelerated pulse, shortness of breath and confusion.

Complications and long-term sequelae occur in 10 to 20% of those affected. Meningococcal meningitis can lead to cranial nerve palsies, seizures, intellectual impairment or learning difficulties as well as deafness. Sepsis can lead to tissue damage and even to the death of individual limbs.

The mortality rate for meningococcal meningitis is 1%, for sepsis around 13% and for the severe form of septic shock around 33%.

In infants and young children, the symptoms of meningococcal disease are often less typical. Symptoms may include fever, vomiting, cramps, irritability or drowsiness, crying and a bulging or hard fontanelle (gap between the cranial bones). By contrast, neck stiffness may be absent.

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

The first symptoms appear 2 to 10 days after infection, usually after 3 to 4 days. Those affected are contagious for up to 7 days before the onset of symptoms. The disease is usually treated with antibiotics. 24 hours after the start of effective antibiotic therapy, patients are no longer contagious.

Who is particularly at risk?

Meningococcal disease can occur at any age. Infants and toddlers in the first and second years of life are most frequently affected, though adolescents between the ages of 15 and 19 are also more likely to fall ill with it. Close contacts of infected persons, especially people in the same household, are at an increased risk of becoming infected.

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What should I do if I fall ill?

- ▶ Even if a meningococcal infection is merely suspected, patients must be hospitalised immediately!
- ▶ Contact a doctor immediately if you experience symptoms such as sudden onset of fever, shivering or headaches and other warning signs of meningococcal disease (see above).
- ▶ The infection is usually treated with antibiotics.
- ▶ The regulations set out in the German Protection against Infection Act apply in the case of meningococcal infections. Even if meningococcal disease is merely suspected, the person concerned must temporarily not attend or work in community facilities such as schools or nurseries. The same goes for anyone living in shared accommodation in which there is an actual or suspected case. Those affected must inform the community facility if a disease is suspected or has already been confirmed.
- ▶ After recovery, those affected will be able to return to or work at community facilities again. A medical certificate is not required.

What should I keep in mind if I am a close contact person of someone who has fallen ill?

- ▶ If you have had close contact with a person suffering from meningococcal disease, you should seek medical advice immediately at the first sign of meningococcal infection (see above). Close contact should be taken to include living in the same household as the sick person or having been in direct contact with them for an extended period of time, such as kissing them or being in community facilities together.
- ▶ Close contacts of people who have fallen sick should be given antibiotics as a preventive measure. The course of antibiotics should be started as soon as possible, though no later than the tenth day after contact with the sick person.
- ▶ Vaccination is recommended for unvaccinated close contacts if the infected person has been diagnosed with meningococcus, vaccination against which is possible.
- ▶ If close contacts in the shared accommodation where the case occurred are free of symptoms 24 hours after the start of a precautionary course of antibiotics, they may visit or work at community facilities again.
- ▶ Follow the instructions and recommendations of the relevant health authority.

How can I protect myself?

Vaccination

There are different types of meningococcus (serogroups), which are distributed differently around the world. In Germany, the majority of illnesses in children are caused by meningococcal serogroup B, and the majority in adults are caused by serogroup Y. Serogroups C and W are rarer. Various vaccines are available that protect against different types of meningococcus.

The Standing Committee on Vaccination (STIKO) recommends:

- ▶ vaccination against meningococcus B for all children, with a vaccine dose at the ages of 2, 4 and 12 months. Missed vaccine doses should be made up as soon as possible, by no later than the child's fifth birthday;
- ▶ vaccination against meningococcus C for all children with a vaccine dose at the age of 12 months. If the vaccination has been missed, it should be given as soon as possible, by no later than the eighteenth birthday;
- ▶ for risk groups, vaccination with meningococcal ACWY combination vaccine and meningococcal B vaccine; this includes people with an increased health risk due to a congenital or acquired immune deficiency (e.g. absence of a spleen) and laboratory staff at risk;
- ▶ for travellers to countries with a high incidence of meningococcal disease, especially those in close contact with the population, and before pilgrimages to Mecca, meningococcal ACWY vaccination;
- ▶ for disaster relief workers and, depending on the risk, for development aid workers and medical staff, in addition to the meningococcal ACWY vaccination, also the meningococcal B vaccination;
- ▶ vaccination against meningococcal ACWY and/or meningococcal B in accordance with the recommendations of the destination countries before long-term stays, especially for children and adolescents as well as for people engaged in studying or training.

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Where can I get more information?

The local health authority (Gesundheitsamt) can provide you with further advice. Since meningococcal infections must be reported, it has information on the current situation and experience in dealing with the disease.

More (specialist) information is also available online from the Robert Koch Institute (www.rki.de/meningokokken).

Please also note the information for travellers (www.auswaertiges-amt.de).

Information on infection control through vaccination can be found on the Federal Institute of Public Health website (www.infektionsschutz.de).



STEMPEL

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