

Bacterial meningitis and meningococcus

What is meningitis?

Meningitis is an inflammation of the meninges which are the thin membranes that cover the brain and the spinal cord. Infection can be caused by viruses—which is more common—or by bacteria—which is more serious and life threatening. Bacterial meningitis is basically a childhood infection. Very young children are at the greatest risk although it can occur in any person.

What is meningococcal meningitis?

Bacteria called *Neisseria meningitidis* or meningococcus can cause a particularly deadly infection, especially in children between birth and 5 years of age and in adolescents and young adults between 15 and 24 years. It is spread through close contact with saliva from activities such as kissing and sharing drink bottles, and also by nasal droplets from sneezing. This infection can take the form of meningitis or septicaemia (severe infection of circulating blood), or both simultaneously. The affected person rapidly becomes sick and may develop a rash. The red rash can be misleading because it looks like any heat rash at first but then the deadly sign of purpura (bleeding into the skin) develops. Early diagnosis and treatment with antibiotics is critical. Untreated cases may be fatal or result in permanent brain damage.

What are frequent symptoms and signs?

- Fever
- Headache
- Nausea and vomiting
- Pallor
- Lethargy/tiredness
- Increasing irritability
- Drowsiness
- Neck stiffness
- Sensitivity to light
- Altered conscious state (e.g. confusion)
- Delirium

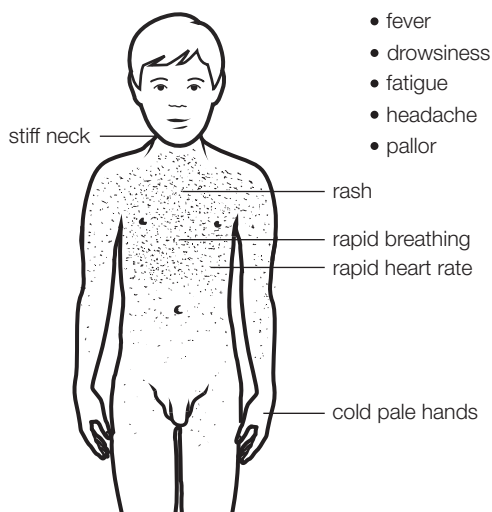
As a general rule the illness seems like the flu at first and it can be difficult to diagnose in the early stages. Doctors prefer to see people early rather than later, when the patient will be very sick.

In infants the signs of meningitis may not be so obvious but neck stiffness, vomiting and headache are more noticeable in children over 3 years of age. These symptoms may be masked and confuse the diagnosis if the child is on antibiotics. The diagnosis is made by lumbar puncture (usually), blood tests or brain scans.

When is urgent attention necessary?

If your child develops any of the following 'red flag' signs report immediately to your doctor or hospital emergency department:

- becomes 'flat' quite rapidly
- cold pale skin especially of the limbs
- change in conscious state



Signs of meningococcal meningitis

- drowsiness, confusion or delirium
- rapid heart rate
- rapid, difficult or noisy breathing
- convulsion
- red rash, especially if it looks like flecks of blood.

What is the treatment?

Patients will be admitted to hospital initially to confirm the diagnosis and to identify the causative bug. Treatment is by large doses of antibiotics which are usually fed directly into a vein by means of an intravenous drip. This procedure may be necessary for up to two weeks. The patient will require strict bed rest, probably in a darkened room, plenty of fluids, and analgesics for any pain. Barrier nursing to prevent spread of infection will be required.

What are preventive measures?

Seek medical care for any persistent infection especially in the upper respiratory tract. Avoid contact with a person who has meningitis. Oral antibiotics are given for the following contacts of a person with meningococcal disease. Those who:

- live in the household and are aged less than 24 months
- have kissed the patient in the previous 10 days or shared saliva (e.g. drink bottles, cigarettes)
- have attended the same day care centre, kindergarten, school or university class.

A new meningococcal vaccine is available but it may not cover all strains. Check with your doctor who can advise you about immunisation. Immunisation is recommended against *Haemophilus* and *Pneumococcus* which are other causes of bacterial meningitis.