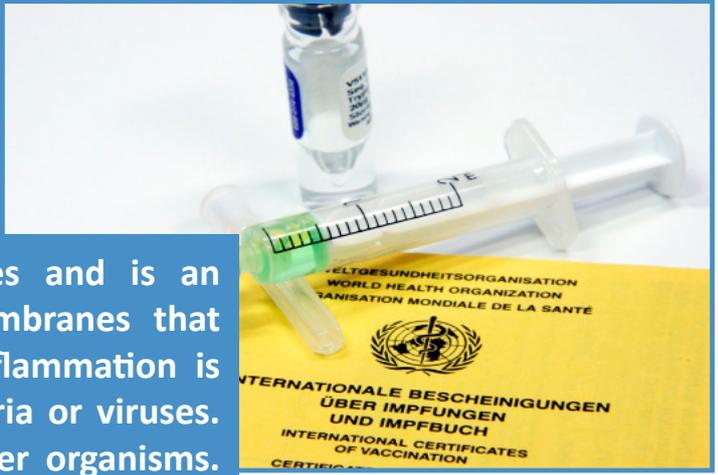


# Managing meningitis



Meningitis can affect people of all ages and is an inflammation of the meninges (the membranes that cover the brain and spinal cord). The inflammation is usually caused by an infection with bacteria or viruses. Less commonly, it may be caused by other organisms.

Bacteria and viruses that cause meningitis often cause other infections as well, in which case the organism spreads to the meninges from another area in the body, for example with a chest infection or skin infection. However, it is common for meningitis to also occur without infection in other areas.

Bacteria and viruses are different types of organisms that invade the body and cause infections. The major difference is that bacterial infections are treated with antibiotics, whereas viral infections do not respond to antibiotics, and in most cases there is no drug that will specifically kill the virus.

## Bacterial meningitis

Bacterial meningitis is usually more serious than viral meningitis and can be life-threatening if not treated promptly. Many different types of bacteria can cause meningitis. Children are typically affected by different organisms at different ages.

## Viral meningitis

Viral meningitis is relatively common and is usually far less serious than bacterial meningitis. It often remains undiagnosed because its symptoms are similar to those of the common flu. The frequency of viral meningitis increases slightly in the summer and autumn months because people are more often exposed to common viral agents during those seasons.

The most common causes of viral meningitis are the enteroviruses (echovirus and coxsackie virus). However, other viruses like herpes and mumps may cause meningitis. Viruses frequently cause meningoencephalitis which, as the name indicates, involves not only the meninges but the brain tissue as well.

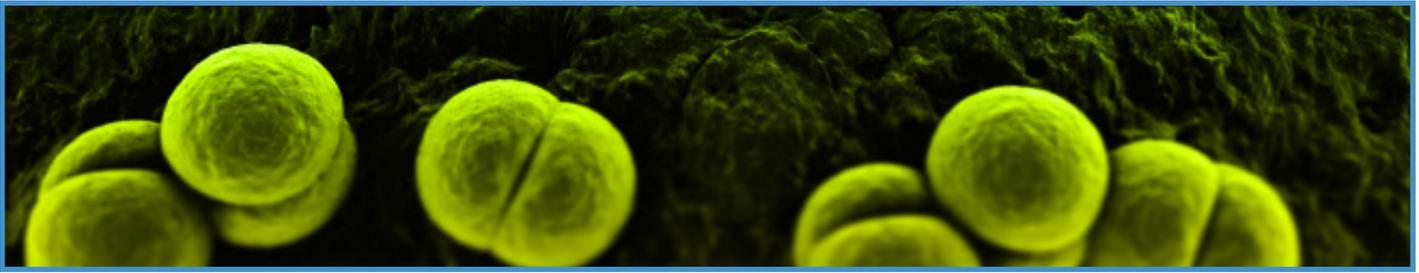
## Who gets meningitis?

Bacterial meningitis occurs in people of all ages but is more common in the very young (infants and young children) and the elderly (people above age 60). These are ages when the body's immunity is poorly developed or losing activity. Viral meningitis occurs in people of all ages, although it is more common in children.

Children tend to be at risk of becoming infected, due to their constant close contact with other children. Day care centres, schools, crèches, and dormitories tend to allow spread of disease from one child to another.

## Signs and symptoms

The symptoms of meningitis vary and depend both on the age of the person and on which bacterium or virus is causing the infection. The symptoms of viral meningitis are usually milder than those of bacterial meningitis. However, symptoms of bacterial and viral cases can be similar, particularly in the early stages of the disease. This makes prompt, accurate identification of the infectious organism crucial to effective treatment and chances of full recovery.



## Early symptoms

Often the first symptoms of meningitis are non-specific. The virus or bacteria enters the body at another site causing symptoms such as fever, a runny nose, diarrhoea, and vomiting.

## Later signs

As the meningitis progresses, other symptoms may occur. Often the symptoms of meningitis are subtle. Typical symptoms include:

- Persistent fever.
- Lethargy (poor feeding in children, confusion, drowsiness, progressing to unconsciousness).
- Irritability – A child may be very irritable on being disturbed or when picked up.
- Headache and neck stiffness are important signs.
- Photophobia (sensitivity to light, i.e. difficulty looking into bright light).
- Skin rash – Specific skin rashes may be a sign of meningitis, particularly bacterial meningitis.
- Convulsions (fits or seizures).

## Infants

Suspecting meningitis in an infant can be difficult and one needs to look for subtle signs like:

- Temperature changes – An increase from usual temperature (fever) is possible, but sometimes with a severe infection the temperature may also be lower than normal (especially in newborn babies and infants of less than six months).
- Weak feeding or poor suckling.

- Bulging of the fontanelles (the ‘soft spot’ on the top of the baby’s head will feel tense or may even bulge above the surrounding level of the head).
- Stiffness or rigidity – Often shown by arching the back, inability to bend the neck forwards, or obvious pain if one gently tries to raise the baby’s legs to a 90 degree angle.
- Weak and high pitched cry.

## How is meningitis spread?

Most cases of meningitis result from infections that are contagious. The infectious agents usually spread from person to person in tiny drops of fluid from the throat and nose of someone who is infected. This could be a person with either meningitis or, more likely, the common infection caused by that germ, e.g. pneumonia.

It is also important to recognise that many people are ‘carriers’ of an organism but don’t have signs of infection (asymptomatic carriers). The drops may be transferred when an infected person coughs, laughs, talks, or sneezes. They then can infect others when people breathe them in or touch surfaces or objects on which the drops have settled.

The infections most often spread between people who are in close contact, such as those who live together or people who are exposed by kissing or sharing eating utensils. It is not uncommon to see outbreaks of meningitis in schools, military barracks, or other situations in which people are in close contact. Those with meningitis typically remain contagious while they still have symptoms. People who have bacterial meningitis can be contagious for about 24 hours after they begin taking antibiotics.



## Prevention

### 1. *Vaccination*

Vaccines can greatly reduce a person's risk of developing meningitis. Vaccines like the measles, mumps and rubella vaccine (MMR), Haemophilus vaccine (Hib), pneumococcus vaccine and meningococcal vaccine will greatly reduce a person's risk of developing meningitis. The following are some of the common vaccines used in children:

- MMR is typically given at 12 to 18 months.
- Hib is typically given at 6, 10 and 14 weeks.
- Pneumococcal vaccine is given to children over 6 weeks of age.
- Meningococcal vaccine is given to children over 2 years of age. It is not routinely given.

### 2. *Hygiene*

Many of the bacteria and viruses that are responsible for meningitis are fairly common. Good hygiene is an important means of preventing any infection.

- Wash hands regularly, particularly before eating and after using the bathroom.
- Avoid contact with someone who is obviously ill.
- Do not share food, drinks, or eating utensils with someone who is ill.

### 3. *Prophylactic antibiotics*

In certain cases of meningitis, doctors may decide to give antibiotics to anyone who has been in close contact with the person who is ill to help prevent additional cases of illness and/or treat people who are asymptomatic carriers to eliminate the bacteria from their throats or nasal passages.

## Diagnosis

It is important to seek professional advice if you suspect you may be infected. Your doctor will take a history and perform a physical examination. If meningitis is suspected, the doctor will order laboratory tests to help make the diagnosis. The tests will likely include a lumbar puncture. This is a test where a sample of spinal fluid is removed from the spine for analysis.



## Treatment

A person with meningitis will need early treatment in hospital to manage meningitis. Bacterial meningitis is treated with intravenous antibiotics. Often an antibiotic covering a wide range of organisms is started initially. When the exact organism is diagnosed, different antibiotics might be used.

Viral meningitis cannot be treated with antibiotics. The type of treatment will depend on the severity of the infection. Non-specific treatments may include cortisone (a type of anti-inflammatory medication), intravenous fluids, pain-killers and anti-nausea medication to control pain, fever, and fluid losses.

## Duration

Even with proper treatment, bacterial

meningitis may take days (and sometimes weeks) to resolve, and recovery from its effects may take even longer. Most cases of viral meningitis resolve completely within one to two weeks.

## The bottom line

Seek medical attention immediately if you suspect you may have meningitis or if you exhibit symptoms such as vomiting, headache, lethargy or confusion, neck stiffness, rash, and fever. Infants who have fever, irritability, poor feeding, and lethargy should be assessed by a doctor right away.

If you have had contact with someone who has meningitis, you may need preventative antibiotics to protect you from meningitis, depending on the type of organism responsible for the infection (bacteria or viruses).