



## Who

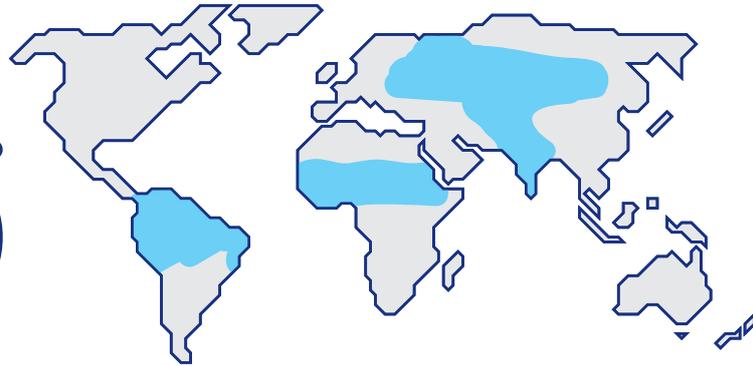
Bacterial meningitis occurs worldwide. It often strikes young individuals and can rapidly progress to death. After the institution of routine infant immunizations the incidence has decreased. The high rates in less developed countries are in part due to poverty, crowding, and poor sanitation.



## What

Bacterial meningitis is an infection of the tissues surrounding the brain and spinal cord. Most causative bacteria are respiratory pathogens.

The most important factor for developing meningitis is carriage of these bacteria in throat or nose. Risk factors include anatomic defects of the brain or inner ear, acquired defects due to skull fractures, infections near the brain, or a deficient immune system.



## Where and when

Epidemics are often caused by *Neisseria meningitidis* and regularly occur in the so-called meningitis belt in sub-Saharan Africa. They may also occur in parts of Asia, South America, and the former Soviet Union. Pilgrims on the Hajj pilgrimage to Mecca are required to be vaccinated due to meningococcal outbreaks in the past.

Other causative bacteria are *Streptococcus pneumoniae*, *Haemophilus influenzae*, and *Listeria monocytogenes*.

## Prevention

Conjugate vaccines for the three most common meningococcal pathogens are available and are currently incorporated in most infant immunizations programs. Please consult your travel doctor whether additional vaccination may be required when visiting countries in sub-Saharan Africa.



## Treatment

Broad-spectrum intravenous antibiotics should be administered as soon as possible. For diagnostic considerations a lumbar puncture and blood cultures have to be performed to detect the causative microorganism.

## Symptoms

The classic triad of acute bacterial meningitis occurs in ~40% of patients and consists of fever, nuchal rigidity (stiff neck), and a change in mental status. Other common features include a severe headache, nausea, seizures, and partial paralysis.



## In case of infection

There is an appreciable mortality rate associated with bacterial meningitis even with the administration of appropriate antibiotics. Neurologic complications may occur in nearly 30% and include impaired mental status, seizures, hearing loss, intellectual impairment, and paralysis.