

# The Clinical Features and Complications Associated with Meningitis

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## Introduction

Meningitis is intense or ongoing irritation of the defensive films covering the mind and spinal string, on the whole called the meninges. The most widely recognized side effects are fever, cerebral pain, and neck stiffness. Different side effects incorporate disarray or changed cognizance, sickness, heaving, and a failure to endure light or boisterous noises [1]. Small kids frequently display just vague side effects, like crabbiness, sluggishness, or poor feeding. A non-whitening rash (a rash that doesn't blur when a glass is turned ready to be done) may likewise be present.

The irritation might be brought about by disease with infections, microbes or different microorganisms. Malignancy (cancer), subarachnoid hemorrhage, chronic inflammatory disease (sarcoidosis), and certain drugs are examples of non-infectious causes [2]. Meningitis can be fatal due to the inflammation's proximity to the brain and spinal cord. A lumbar puncture, in which a needle is inserted into the spinal canal to collect a sample of cerebrospinal fluid (CSF), can diagnose or exclude meningitis [3]. Some forms of meningitis are preventable by immunization with the meningococcal, mumps, pneumococcal, and Hiv vaccines. Giving antibiotics to people who have significant exposure to certain types of meningitis.

The most common symptom of meningitis in adults is severe headache, which occurs in almost 90% of cases of bacterial meningitis [4]. Next, neck stiffness (the inability to passively flex the neck forward due to increased neck muscle tone and stiffness) is the classic triad of diagnostic signs. However, only 44–46% of cases of bacterial meningitis have all three symptoms. Acute meningitis is extremely unlikely if none of the three symptoms are present [5]. Other symptoms that are frequently associated with meningitis include photophobia, which is intolerance to bright light, and photophobia, which is intolerance to loud noises. Little kids frequently don't show the previously mentioned side effects, and may just be bad tempered and look unwell [6]. The fontanelle (the weakness on the highest point of a child's head) can swell in babies matured as long as a half year. Leg pain, cold extremities, and an abnormal skin color are additional characteristics that distinguish meningitis from less severe illnesses in young children [7]. 70% of adults with bacterial meningitis have nuchal rigidity. Other signs include the presence of a positive Kernig's or Brudzinski sign. The person is examined for Kernig's sign while lying supine with their hips and knees bent to 90 degrees [8]. Pain prevents passive knee extension in people with positive Kernig's signs. When flexion of the neck results in involuntary flexion of the knee and hip, this causes a positive Brudzinski's sign. Although Kernig's sign and Brudzinski's sign are both frequently used to screen for meningitis, their sensitivity is low. However, their specificity for meningitis is very high: The symptoms are uncommon in other diseases. Another test, the "jolt accentuation maneuver," aids in determining whether individuals with fever and headache have meningitis. The task is to quickly turn the head horizontally; Meningitis is unlikely if this doesn't make the headache worse [9]. Other problems can cause symptoms like those above from non-meningitic causes. Meningitis caused by the bacterium *Neisseria meningitidis* (also known

as "meningococcal meningitis") can be distinguished from meningitis caused by other causes by a rapidly spreading petechial rash, which may occur before other symptoms [10]. The rash is made up of numerous small, irregular purple or red spots ("petechiae") on the trunk, lower extremities, mucous membranes, conjunctiva, and Most of the time, the rash doesn't blanch; the redness doesn't vanish when squeezed with a finger or a glass tumbler. Despite the fact that this rash is not always associated with meningococcal meningitis, it is fairly specific for the condition; it does, however, occur occasionally in meningitis caused by other bacteria [11]. Other clues to the cause of meningitis include the skin symptoms of genital herpes and hand, foot, and mouth disease, both of which are associated with various forms of viral meningitis.

In the early stages of the illness, additional issues may arise. These might necessitate specific treatment, and they might also indicate a serious illness or a worse outlook. Sepsis is a systemic inflammatory response syndrome characterized by rapid breathing, rapid heart rate, high or abnormally low temperature, and falling blood pressure. In the early stages of meningococcal meningitis, but not always, very low blood pressure can occur. Disseminated intravascular coagulation, also known as excessive activation of blood clotting, may obstruct blood flow to organs and paradoxically raise the risk of bleeding [12]. Meningococcal disease can cause gangrene in the limbs. Severe meningococcal and pneumococcal infections can cause adrenal gland hemorrhage, which can cause Waterhouse-Friderichsen syndrome, which is often fatal [13,15]. The brain tissue can swell, which can cause an increase in pressure inside the skull, and the swollen brain can herniate through the base of the skull. Seizures can occur for a variety of reasons, including a decrease in consciousness, loss of the pupillary light reflex, and abnormal posture. The inflammation of the brain tissue may also obstruct the normal flow of CSF around the brain (hydrocephalus). Seizures can occur in the early stages of meningitis in children (in 30% of cases) and do not necessarily indicate an underlying cause. Seizures can occur as a result of increased pressure or from areas of inflammation in the brain tissue. Focal seizures, which involve one limb or part of the body, persistent seizures, late-onset seizures, and seizures, that are difficult to control with medication indicate a poorer long-term outcome. Inflammation of the men

A microorganism infection typically causes meningitis. The majority of infections are caused by viruses, with bacteria, fungi, and protozoa coming in second and third, respectively. Infections can also be caused by a variety of non-infectious factors. Aseptic meningitis is a

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type of meningitis in which there is no evidence of a bacterial infection. Typically, this type of meningitis is brought on by viruses, but it can also be brought on by a bacterial infection that has already been partially treated, when bacteria leave the meninges or when pathogens infect a space near the meninges (such as sinusitis). Aseptic meningitis may result from endocarditis, an infection of the heart valves that spreads small clusters of bacteria throughout the bloodstream. Spirochetes, a class of bacteria that includes the syphilis-causing *Treponema pallidum* and the Lyme disease-causing *Borrelia burgdorferi*, can also cause aseptic meningitis. Meningitis can occur in cerebral malaria, which is malaria that infects the brain, or in amoebic meningitis, which is meningitis caused by infection with amoebae, such as *Naegleria fowleri*, that is contracted from sources of freshwater.

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