

# Meningitis—Viral and Bacterial

Meningitis is an infection of the membranes lining the brain and spinal cord. When the infection is caused by bacteria (bacterial meningitis), it is a dangerous medical problem requiring immediate treatment. Infection caused by a virus (viral meningitis) is more common but usually less severe. Symptoms of meningitis (fever, stiff neck, irritability, abnormal sleepiness) should always be checked by a doctor and given medical attention!

## What is meningitis?

Meningitis is an inflammation of the membranes lining the brain or spinal cord. Although other causes are possible, meningitis is usually produced by bacteria or viruses.

- Meningitis caused by bacteria is a dangerous infection with a high risk of complications, even death. Because *bacterial meningitis* is so dangerous, your doctor may recommend a test (lumbar puncture or “spinal tap”) if there is even a small chance that your child has it. The earlier bacterial meningitis is recognized and the earlier treatment begins, the better the chances of your child’s recovery.
- Meningitis caused by a virus can spread in outbreaks. *Viral meningitis* is usually less dangerous than bacterial meningitis; serious complications are uncommon.
- With either type of meningitis, your child will need close medical follow-up until the problem has resolved completely.

## What does it look like?

Symptoms of meningitis vary, but the most common are:

- Fever.
- Headache.
- Behavior changes; your child may be irritable, lethargic (abnormal sleepiness), confused, or even unconscious.
- Eyes can become very sensitive to light (photophobia); this can occur in other conditions as well.
- Stiff neck.
- Vomiting.
- Babies with meningitis may be irritable and have vomiting, and you may feel bulging of the “soft spot” (fontanelle) at the top of the head. Babies younger than 18 to 24 months old often don’t get a stiff neck.

Other symptoms may occur, including skin rash, muscle aches, back pain, or seizures.

## What are some possible complications of meningitis?

- *Bacterial meningitis* can result in a number of serious complications, including hearing loss, seizures, damage to the brain or nervous system, and occasionally death. Even after your child recovers, he or she may have neurologic problems, including poor school performance.
- *Viral meningitis* is less likely to cause serious complications or death.

## What puts your child at risk of meningitis?

*Bacterial meningitis.* The main risk factors for bacterial meningitis are:

- In some cases, such as with the bacteria *Haemophilus influenzae* type B (Hib) or *Neisseria meningitidis*, being exposed to someone who has bacterial meningitis increases the risk of catching the disease. (Because an effective vaccine is available, Hib meningitis is now very uncommon.)
- Some medical conditions, such as lack of a spleen, can increase the risk of bacterial meningitis.

*Viral meningitis.* Viral meningitis usually occurs in outbreaks. It may be caused by “summer viruses,” such as coxsackievirus or echovirus. Other viruses causing meningitis may be spread by ticks or mosquitoes, for example, West Nile virus.

## Can meningitis be prevented?

Vaccinations are available and recommended for the most common causes of bacterial meningitis, including:

- *Haemophilus influenzae* type B (Hib) vaccine.
- Pneumococcal vaccine.
- Meningococcal vaccine.
- If your child is exposed to someone with bacterial meningitis, getting vaccinated or taking antibiotics may lower the risk of developing meningitis, depending on which bacteria is the cause.
- There is no vaccination for the “summer viruses” that cause most cases of viral meningitis.

## How is meningitis diagnosed?

If your doctor suspects meningitis, he or she may perform a test called a lumbar puncture or “spinal tap.” This is done by placing a needle between the bones of your child’s spine and removing a small amount of fluid (called cerebrospinal fluid). Your child will receive an anesthetic so that he or she does not feel the needle.

Tests are performed on the fluid sample to help find out whether your child has meningitis and what type it is. If bacteria are discovered, the test results will help determine what kind of antibiotic treatment your child needs. If no bacteria are found, then the meningitis probably results from infection with a virus.

### How is meningitis treated?

If your child has bacterial meningitis, he or she will need hospital treatment. Some cases of viral meningitis can be handled at home.

*Bacterial meningitis* requires hospitalization and treatment with antibiotics to kill the bacteria causing the infection.

- It is important to treat bacterial meningitis as soon as possible. Your child's treatment may start even before the results of the spinal tap are available. Depending on the results of the test, your child's antibiotic may be changed to kill the specific bacteria found in the spinal tap.
- To be as effective as possible, your child will receive the antibiotics through a vein (intravenous, or IV). Treatment time varies, depending on which bacteria are the cause, but lasts at least a week.
- As your child is recovering, he or she may need to have a repeated spinal tap test to make sure the treatment is working.
- Your child may receive other medications (such as steroids) to fight the inflammation caused by meningitis.
- In the hospital, your child will be watched closely to make sure he or she is getting better and to prevent or detect any complications.

*Viral meningitis* does not require antibiotics. Antiviral drugs are generally not used. However, the doctor may start antibiotics until he or she is sure of the cause.

- Your child will probably be hospitalized if the doctor is not sure a virus is the cause or if symptoms are severe.
- For most types of viral meningitis, there is no medication that can destroy the virus. The viral infection should start to clear up within a few days.
- Common medications for pain and fever may be used.
- Your child will be monitored closely to prevent or detect any complications.

### When should I call your office?

Because meningitis is a potentially serious problem, it is important to make sure your child gets close medical follow-up attention until the meningitis clears up completely.

If your child is recovering from meningitis at home, call our office if his or her condition gets worse. For example:

- He or she develops fever.
- He or she stops drinking fluids and starts vomiting.
- He or she seems confused or very sleepy and difficult to arouse.
- He or she just seems "sicker."
- For babies with meningitis, call your doctor if your child seems more irritable.