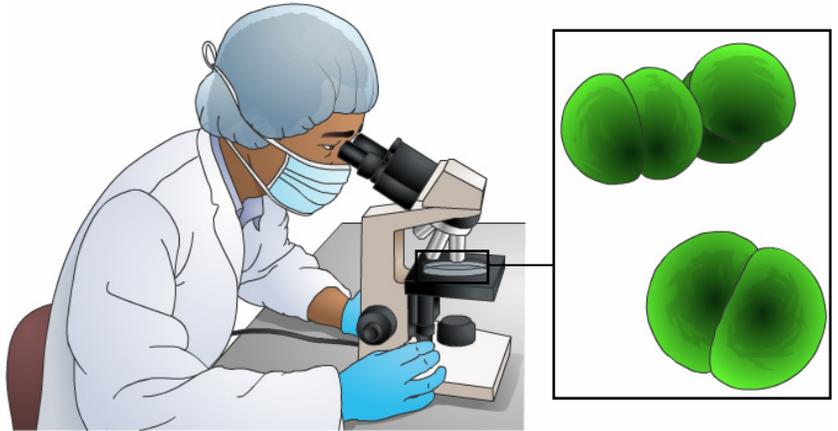


### **Introduction**

Meningococcal infections are serious infections caused by a specific type of bacteria. The infections often affect the brain and spinal cord or the bloodstream. Meningococcal infections can spread easily through close contact with an infected person. Even with treatment, some infections can lead to death. A vaccine can prevent most meningococcal infections.

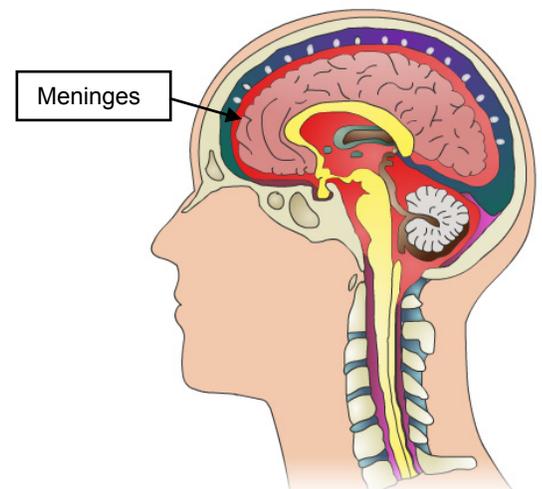


This reference summary explains meningococcal infections. It talks about the types of infections, symptoms and causes. It also covers diagnosis, treatment and prevention.

### **Meningococcal Infections**

Meningococcal infections are illnesses caused by bacteria called *Neisseria meningitidis*, or meningococcus. Meningococcal infections are serious. The illness most people are familiar with is meningococcal meningitis. It is commonly just referred to as meningitis.

Meningitis is inflammation of the thin tissue that surrounds the brain and spinal cord. This tissue is called the meninges.



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Even with treatment, meningitis can cause serious complications. This is why early treatment is so important. Some complications of meningitis include:

- Permanent hearing loss.
- Learning disabilities.
- Severe brain damage.
- Death.

Another meningococcal infection is meningococcal septicemia. Septicemia is a serious and life-threatening bloodstream infection. Sometimes it may be called meningococcal sepsis. A possible complication is loss of limb.



Less commonly, meningococcal infections may include:

- Arthritis, which is pain and swelling of the joints.
- Pneumonia, which is an infection of the lungs.

## Symptoms

Symptoms of meningococcal infections depend on the type of infection. But often early symptoms may be mistaken for a less serious illness, like the common cold or the flu.

Meningococcal meningitis causes:

- A sudden onset of fever.
- Headache.
- Stiff neck.



Meningitis can also cause the following symptoms:

- Confusion.
- Increased sensitivity to light.
- Nausea.
- Vomiting.



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In infants, symptoms of meningitis include:

- Inactivity.
- Irritability.
- Vomiting or feeding poorly.

Symptoms of meningitis often appear 3 to 7 days after exposure to the bacteria. They can also appear more quickly.

Meningococcal septicemia may cause:

- Cold chills.
- Cold hands and feet.
- Diarrhea.
- Extreme tiredness.
- Rapid breathing.
- Severe pain in the muscles, joints, chest or abdomen.
- Vomiting.



In the later stages of meningococcal septicemia, a dark purple rash can appear on the body.

Less commonly, meningococcus bacteria may cause arthritis or pneumonia. Symptoms of arthritis may include:

- Inability to control the joint.
- Pain in the joints.
- Swelling of the joints.

Symptoms of pneumonia include:

- Cough.
- Difficulty breathing.
- Exhaustion.
- Fever or chills.
- Unusually fast breathing.
- Wheezing.



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If you or your child has any of the above symptoms, contact a health care provider right away. Meningococcal infections are life-threatening. Death can happen in as little as a few hours.

## Causes

Meningococcal infections are caused by meningococcus bacteria. Some people have this type of bacteria in the back of their nose and throat but they have no symptoms of disease. But the bacteria can invade the body and cause illnesses. The bacteria can spread through mucus and saliva. This means that one person can give the infection to another person through kissing or sharing eating utensils.



The bacteria do not spread through casual contact. It does not spread by breathing the air where an infected person has been.

Meningococcal infections are most common in:

- Infants.
- Adolescents.
- Young adults.

College students living in dormitories are also at an increased risk. Meningococcal infections can spread quickly where large groups of people gather together. Having certain medical conditions can raise a person's risk of meningococcal infections. For example, both children and adults who do not have spleens have a higher risk of getting these infections.

The spleen is an organ above the stomach and under the ribs on the left side. It fights infection and helps control the amount of blood in the body. It also destroys old and damaged cells.

## Diagnosis

Early diagnosis and treatment is important. Meningococcal infections are serious. Some may lead to death even with treatment. Your health care provider will first ask about your symptoms and medical history. He or she will perform a physical exam.



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Certain tests will be done if your health care provider thinks you may have a meningococcal infection. These include blood tests and a lumbar puncture. Blood tests may be done to check for signs of infection. They may also be used to rule out other causes of your symptoms.

A lumbar puncture is a procedure used to collect a sample of cerebrospinal fluid. This fluid surrounds the brain and spine, acting as a cushion and protecting them from injury. The procedure is done by inserting a needle into the back. The fluid is normally clear. But an infection can cause the fluid to be cloudy. Once a sample is collected, it is tested for meningococcus bacteria.



Other tests may also be done to rule out other causes of your symptoms. Your health care provider will explain these tests, if they are needed.

## Treatment

Meningococcal infections can be treated with a number of different antibiotics. It is important to start treatment as soon as possible. Early treatment with antibiotics can reduce the risk of death. But if treatment is not started early enough, the bacteria may have caused too much damage. This means the patient may still die or suffer from permanent problems.

In serious cases, other treatments may also be needed. These may include:

- Breathing support.
- Medicines to treat low blood pressure.
- Wound care for parts of the body with skin damage.

People who have had close contact with a person with a meningococcal infection should also take antibiotics. This prevents them from getting the disease. If you have a meningococcal infection, tell people you have had close contact with. These people should see a health care provider right away.



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## Prevention

Some meningococcal infections can be prevented with a vaccination. The vaccine protects against most types of meningococcus bacteria. Like any vaccine, meningococcal vaccines are not 100% effective. Even if you have received the vaccine, there is still a chance you can get a meningococcal infection.

The vaccine is recommended for all adolescents at age 11 to 12 years of age. A booster shot is then given at age 16.

Adults at increased risk of meningococcal infections should get the vaccination as well. This includes:

- College students.
- Military recruits.
- People traveling to areas where meningococcal infections are common.
- People who do not have a spleen.

People with very high risk may need two doses of the vaccine. Meningococcal vaccines are safe. Side effects of the vaccine are often mild. Talk to your health care provider about the benefits and risks of the vaccine before you get it.

## Summary

Meningococcal infections are serious infections caused by a specific type of bacteria. The bacteria are called meningococcus bacteria. Meningococcal infections can affect the brain and spinal cord or the bloodstream. Rarely, they may affect the joints or lungs. Meningococcal infections can spread easily through close contact with an infected person. The bacteria spread through the mucus and saliva of an infected person. Meningococcal infections are common in people living in close quarters, such as college students or military recruits.

Antibiotics are given to treat meningococcal infections. Since the infection spreads from person to person, family members may also need to be treated. Even with treatment, some infections can lead to death. A vaccine can prevent most meningococcal infections.

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