# BACTERIAL MENINGITIS

## WHAT IS MENINGITIS?

Meningitis is an inflammation of the covering of the brain and spinal cord. It can be caused by viruses, parasites, fungi, and bacteria. Viral meningitis is most common and the least serious. Meningitis caused by bacteria is the most likely form of the disease to cause serious, long-term complications. It is an uncommon disease but requires urgent treatment with antibiotics to prevent permanent damage or death.

Bacterial meningitis can be caused by multiple organisms. Two common types are *Streptococcus pneumoniae*, with over 80 serogroups that can cause illness, and *Neisseria meningitidis*, with five serogroups that most commonly cause meningitis.

## WHAT ARE THE SYMPTOMS?

Someone with bacterial meningitis will become very ill. The illness may develop over one or two days, but it can also rapidly progress in a matter of hours. Not everyone with meningitis will have the same symptoms.

Children (over 1 year old) and adults with meningitis may have a severe headache, high temperature, vomiting, sensitivity to bright lights, neck stiffness, and drowsiness or confusion. In both children and adults, there may be a rash of tiny, red-purple spots. These can occur anywhere on the body.

The diagnosis of bacterial meningitis is based on a combination of symptoms and laboratory results.

## HOW SERIOUS IS BACTERIAL MENINGITIS?

If it is diagnosed early and treated promptly, most people make a complete recovery. If left untreated or treatment is delayed, bacterial meningitis can be fatal, or a person may be left with permanent disability.

## HOW IS BACTERIAL MENINGITIS SPREAD?

Fortunately, none of the bacteria that cause meningitis are as contagious as diseases like the common cold or the flu, and they are not spread by simply breathing the air where a person with meningitis has been. The germs live naturally in the back of our noses and throats, but they do not live for long outside the body. They are spread when people exchange saliva (such as by kissing; sharing drinking containers, utensils, or cigarettes) or when people cough or sneeze without covering their mouth and nose.

The bacteria **do not** cause meningitis in most people. Instead, most people become **carriers** of the bacteria for days, weeks or even months. The bacteria rarely overcome the body's immune system and cause meningitis or another serious illness.

## HOW CAN BACTERIAL MENINGITIS BE PREVENTED?

### Vaccination

Bacterial meningitis caused by *Streptococcus pneumoniae* and *Neisseria meningitidis* may be prevented through vaccination. The vaccine which protects against Streptococcus pneumoniae

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is called pneumococcal conjugate vaccine or PCV. This vaccine is recommended by the Advisory Council on Immunization Practices (ACIP) for children in the first year of life. *Neisseria meningitidis* is prevented through two types of vaccines. The first is a meningococcal conjugate vaccine which protects against four serogroups A, C, W, and Y and is referred to as MCV4. The second is a vaccine against *Neisseria meningitidis* serogroup B and is referred to as MenB.

The ACIP recommends MCV4 for children at age 11-12 years, with a booster dose at 16-18 years. In Texas, one dose of MCV4 given at or after age 11 years is required for children in 7th-12th grades. One dose of MCV4 received in the previous five years is required in Texas for those under the age of 22 years and enrolling in college. Teens and young adults (16-23 years of age) may be vaccinated with MenB. This vaccine is not required for school or college enrollment in Texas.

Vaccines to protect against bacterial meningitis are safe and effective. Common side effects include redness and pain at the injection site lasting up to two days. Immunity develops about 1-2 weeks after the vaccines are given and lasts for five years to life depending on vaccine.

**Healthy Habits**
Do not share food, drinks, utensils, toothbrushes, or cigarettes. Wash your hands. Limit the number of persons you kiss. Cover your mouth and nose when you sneeze or cough. Maintaining healthy habits, like getting plenty of rest and not having close contact with people who are sick, also helps.

**WHO IS AT RISK FOR BACTERIAL MENINGITIS?**
Certain groups are at increased risk for bacterial meningitis caused by *Neisseria meningitidis*. These risk factors include HIV infection, travel to places where meningococcal disease is common (such as certain countries in Africa and in Saudi Arabia), and college students living in a dormitory. Other risk factors include having a previous viral infection, living in a crowded household, or having an underlying chronic illness.

Children ages 11-15 years have the second highest rate of death from bacterial meningitis caused by Neisseria meningitidis. Also, children ages 16-23 years have the second highest rates of disease caused by *Neisseria meningiditis*.

**WHAT YOU SHOULD DO IF YOU THINK YOU OR A FRIEND MIGHT HAVE BACTERIAL MENINGITIS?**
Seek prompt medical attention.

**FOR MORE INFORMATION**
Your school nurse, family doctor, and the staff at your local or regional health department office are excellent sources for information on all infectious diseases. You may also call your family doctor or local health department office to ask about meningococcal vaccine.

**Additional Resources**
Centers for Disease Control and Prevention (CDC): https://www.cdc.gov/meningitis/index.html
Texas Department of State Health Services (DSHS):
Immunization Unit: https://www.dshs.texas.gov/immunize/PreteenVaccines.aspx
Infectious Disease Control: https://dshs.texas.gov/IDCU/disease/meningitis/Meningitis.aspx

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