

Bacterial Meningitis Fact Sheet

- 1. What is bacterial meningitis?** - Meningitis is an inflammation of the lining and fluid that surrounds the spinal cord and brain. People sometimes refer to it as spinal meningitis. Meningitis is usually caused by a viral or bacterial infection. Knowing the cause of the meningitis is important because the severity of illness and the treatment differ. Viral meningitis is generally less severe and resolves without specific treatment, while bacterial meningitis can be quite severe and may result in brain damage, hearing loss, or learning disability, and requires immediate antimicrobial therapy. For bacterial meningitis, it is important to know which specific type of bacteria is causing the meningitis because the therapy varies by type, and because some types require treatment of contacts to prevent the disease from spreading to others. Before the 1990s, *Haemophilus influenzae* type b (Hib) was a leading cause of bacterial meningitis, but vaccines now given to all children as part of their routine immunizations have greatly reduced the occurrence of this disease. Today, *Streptococcus pneumoniae* and *Neisseria meningitidis* are among the leading causes of bacterial meningitis.
- 2. What are the signs and symptoms of bacterial meningitis?** - High fever, headache, and stiff neck are the hallmarks of meningitis in anyone over the age of two years. These symptoms can develop over several hours, or they may take one to two days. Other symptoms may include nausea, vomiting, discomfort looking into bright lights, confusion, and sleepiness. In newborns and small infants, the classic symptoms of fever, headache, and neck stiffness may be absent or difficult to detect, and the infant may only appear slow or inactive, or be irritable, have vomiting, or be feeding poorly. As the disease progresses, patients of any age may have seizures, and lapse into a coma.
- 3. How is bacterial meningitis diagnosed?** - Early diagnosis and treatment are very important. If the symptoms of bacterial meningitis are present, call your doctor immediately. The diagnosis is made by obtaining a sample of spinal fluid. The spinal fluid is collected by performing a spinal tap (also known as a lumbar puncture), in which a needle is inserted into an area in the lower back where fluid in the spinal canal is easy to reach. The fluid is then studied for the presence and types of white blood cells and is cultured for bacteria.
- 4. Can bacterial meningitis be treated?** - Bacterial meningitis can be treated with a number of effective antibiotics. It is important, however, that treatment be started early in the course of the disease. Appropriate antibiotic treatment of most common types of bacterial meningitis should reduce the risk of dying from meningitis to below 15%, although the risk is higher among the elderly.
- 5. Is bacterial meningitis contagious?** - Some forms of bacterial meningitis are contagious. The bacteria can be spread through the exchange of respiratory and throat secretions (i.e., coughing, kissing). In most instances, close or prolonged contact is required for the disease to spread. For meningitis caused by *Neisseria meningitidis* (also called meningococcal meningitis) or *Haemophilus influenzae* b (Hib) bacteria, people in the same household or day-care center, or anyone with direct contact with a patient's oral secretions (such as a boyfriend

or girlfriend) would be considered at increased risk of becoming infected. People considered to be close contacts of a person with meningitis caused by *N. meningitidis* should receive antibiotics to prevent them from getting the disease. Antibiotics for contacts of a person with Hib meningitis disease are no longer recommended, if all contacts 4 years of age or younger are fully vaccinated against Hib disease.

6. Are there vaccines against meningitis?

- a. There are vaccines against Hib, some strains of *N. meningitidis* and many types of *Streptococcus pneumoniae*. The vaccines against Hib are very safe and highly effective. By age 6 months of age, every infant should receive at least 3 doses of a Hib vaccine. A fourth dose ("booster") should be given to children between 12 and 18 months of age.
- b. There are two types of vaccines that protect against four of the five strains of *N. meningitidis*. These vaccines are not effective in children under 18 months of age. Vaccines against *N. meningitidis* are sometimes used to control outbreaks of some types of meningococcal meningitis in the United States. Large outbreaks of meningococcal meningitis are unusual in the United States, but they do occur in overseas settings, especially the *meningitis belt* of sub-Saharan Africa. In addition, outbreaks have been associated with large events such as the annual pilgrimage to Mecca, where vaccination is now mandatory for participants. Overseas travelers should check to see if meningococcal vaccine is recommended for their destination. Travelers should receive the vaccine at least one week before departure, if possible.
- c. The meningococcal conjugate vaccine, licensed in 2005, provides longer-term (probably life-long) immunity. It is recommended for all college freshmen living in dormitories, for all adolescents 11-18 years of age, and for 2-10 year olds at increased risk of meningococcal disease. Children at increased risk include travelers to or residents of countries with high rates of meningococcal disease and countries that experience meningococcal epidemics, children without a spleen or with functional asplenia and children with terminal complement immune deficiencies. Health care providers may also vaccinate children aged 2-10 years of age who are infected with human immunodeficiency virus (HIV).
- d. Two vaccines to prevent meningitis due to *S. pneumoniae* (pneumococcal meningitis) also prevent other forms of infection due to *S. pneumoniae*. The older pneumococcal vaccines, Pneumovax (Merck) and Pnu-Immune (Lederle Labs) are not effective in children under 2 years of age but are recommended for all persons over 65 years of age and for those in younger age groups with certain chronic medical problems.
- e. The other pneumococcal vaccine, Prevnar (Wyeth Ayerst) is recommended for use in all children from 2 months to 2 years of age and in certain children at higher risk of pneumococcal disease between 2 and 5 years of age.

7. For more information about Bacterial Meningitis:
<http://www.cdc.gov/meningococcal/about/index.html>



This fact sheet provides general information. Please contact your physician for specific clinical information.