Meningococcal Disease

What is meningococcal disease?

Meningococcal disease occurs with infections due to the bacterium, *Neisseria meningitidis.* There are two major types of meningococcal disease: Meningococcal meningitis and meningococcemia. Meningococcal meningitis is an infection of the tissue (called the "meninges") that surrounds the brain and spinal cord. Meningococcemia is an infection of the blood and may also involve other parts of the body.

What are *Neisseria meningitidis*?

Neisseria meningitidis are bacteria that may be found normally in people's throats and noses. About 5 to 15% of people carry these bacteria and do not get sick from them. These people may be called "carriers." Carriers only have bacteria for a short time. Usually, the bacteria go away and these people may have increased resistance to infection in the future. In rare cases, the bacteria may get into the blood and go to the tissue surrounding the spinal cord and brain, causing severe illness.

How are the bacteria spread?

The bacteria are spread from person-to-person through saliva (spit). You must be in close contact with an infected person's saliva in order for the bacteria to spread. Close contact includes activities such as kissing, sharing water bottles, sharing eating/drinking utensils, or sharing cigarettes with someone who is infected; or being within 3-6 feet of someone who is infected and is coughing or sneezing.

How is meningococcal disease diagnosed?

Persons showing signs and symptoms of illness are diagnosed by growing the bacteria from their spinal fluid (meningitis) or blood (meningococcemia) in the laboratory. It may take up to 72 hours to have test results. Sometimes an earlier diagnosis can be made by looking at a person's spinal fluid under a microscope. Often a preliminary diagnosis is made on the basis of signs and symptoms before laboratory results are available.

What are the signs and symptoms of illness?

Meningococcal meningitis:

Signs and symptoms of meningitis include sudden onset of high fever, stiff neck, headache, nausea, vomiting, and/or mental confusion. Changes in behavior such as confusion, sleepiness, and being hard to wake up are important symptoms of this illness. A rash may be present, often involving the hands and feet. In babies, the only signs of this illness may be acting more tired than usual, acting more irritable than usual, and eating less than usual. Babies with meningitis will usually have a fever, but this is not a reliable sign of illness. Anyone who has these symptoms should be seen by a health care provider right away.

Meningococcemia:

Signs and symptoms of meningococcemia include a sudden onset of fever, chills, and feeling unusually weak and tired. A rash may be present, often on the hands and feet. Anyone who has these symptoms should be seen by a health care provider right away.

How are these illnesses treated?

Antibiotics are used to treat people with both meningococcal meningitis and meningococcemia. People who have had close contact with the sick person any time during the two weeks before she/he became ill may also need to take antibiotics. Preventive treatment of all close contacts should be started as soon as possible but ideally within 24 hours of identifying the case.

Why do close contacts of a sick person need to be treated?

Close contacts of a person who has meningococcal disease are treated with antibiotics because the disease-causing bacteria may be spread from the infected person to other people through contact with the saliva (spit) of the infected person. The antibiotics will kill the bacteria and prevent illness.

Is there a vaccine to protect me from getting sick?

Yes, there are 3 different meningococcal vaccines.

- Quadrivalent meningococcal conjugate vaccine (Menactra and Menveo) protects against 4 serotypes (subgroups), A, C, W, and Y, of meningococcal disease. It is recommended for all children 11-12 years of age and for some younger children with certain health conditions like asplenia (including sickle cell disease), or prior to travel to certain parts of the world where meningococcal disease is common. A second dose of meningococcal conjugate vaccine is routinely recommended at 16 years of age. Adolescents and young adults who have not been vaccinated according to routine recommendations should talk to their healthcare provider about vaccination according to the "catch up" schedule.

  College freshmen, military recruits and other newly enrolled college students living in dormitories who are not yet vaccinated are also recommended to receive meningococcal conjugate vaccine.

- Meningococcal serogroup B vaccine (Bexsero and Trumenba) protects against serogroup B meningococcal disease. It is recommended for people with certain relatively rare high-risk health conditions age 10 or older (examples: persons with a damaged spleen or whose spleen has been removed, those with persistent complement component deficiency, microbiologists working with *N. meningitidis*, and people who may have been exposed during an outbreak). Adolescents and young adults (16 through 23 years of age) **may** also be vaccinated with a serogroup B meningococcal vaccine, preferably at 16 through 18 years of age, to provide short term protection for most strains of serogroup B meningococcal disease.

- Quadrivalent meningococcal polysaccharide vaccine (Menomune) also protects against 4 types (A, C, W, Y) of the 13 serogroups (subgroups) of *N. meningitidis* that cause serious disease. It is recommended for people with certain high-risk conditions 56 years of age and older.

If you have questions about whether or not you or your child should receive any of these vaccines, talk to your healthcare provider.

Are students required to get meningococcal vaccine?

Massachusetts law requires newly enrolled full-time students attending colleges and schools with grades 9-12, who will be living in a dormitory or other congregate housing, licensed or approved by the school or college, to receive a dose of quadrivalent meningococcal vaccine. These students must provide documentation of having received a dose of quadrivalent meningococcal conjugate vaccine. Immunizations should be obtained prior to enrollment or registration; however, students may be enrolled or registered provided that the required immunizations are obtained within 30 days of registration. There is no requirement for meningococcal B vaccination. The law contains exemptions. More information may be found in the MDPH documents *"Meningococcal Disease and College Students"* and "*Information about Meningococcal Disease and Vaccination and Waiver for Students at Residential Schools and Colleges*."

MDPH strongly recommends two doses of quadrivalent meningococcal conjugate vaccine for all adolescents: a first dose at age 11 through 12 years, with a second dose at 16 years. While not required, MDPH strongly recommends that anyone up to 21 years of age who is entering college receive a second dose of quadrivalent meningococcal conjugate vaccine if their first dose was received before their 16th birthday, particularly if they are new residential students. College students who do not live in campus-related housing and want to reduce their risk for meningococcal disease may also choose to be vaccinated, though it is not required. Adolescents and young adults (16 through 23 years of age) **may** also be vaccinated with a serogroup B meningococcal vaccine, preferably at 16 through 18 years of age, to provide short term protection for most strains of serogroup B meningococcal disease.

What should I do if I have had contact with a person who has meningococcal disease?

If you have had close contact with a person who has been diagnosed with meningococcal disease you should call your health care provider and get an antibiotic. If you have had contact with an ill person, but have not had close contact, you should be aware of the symptoms of illness and contact your health care provider right away if you have any of these symptoms.

Are there times when I would not have to take antibiotics after close contact with a sick person with meningitis?

Yes. Meningitis can be caused by many different types of germs, including other bacteria and viruses. Only certain types of meningitis require treatment of the infected person's close contacts. If you have questions about meningitis or your exposure to a sick person, contact your health care provider.

Where can I get more information?

- Your healthcare provider
- The Massachusetts Department of Public Health, Division of Epidemiology and Immunization at (617) 983-6800 or on the MDPH website at http://www.mass.gov/dph/
- Your local health department (listed in the phone book under government)