

Meningococcal Disease and Students: Commonly Asked Questions

What is meningococcal disease?

Meningococcal disease is caused by infection with bacteria called *Neisseria meningitidis*. These bacteria can infect the tissue (the “meninges”) that surrounds the brain and spinal cord and cause meningitis, or they may infect the blood or other organs of the body. Symptoms of meningococcal disease may appear suddenly. Fever, severe and constant headache, stiff neck or neck pain, nausea and vomiting, and rash can all be signs of meningococcal disease. Changes in behavior such as confusion, sleepiness, and trouble waking up can also be important symptoms. In the US, about 350-550 people get meningococcal disease each year and 10-15% die despite receiving antibiotic treatment. Of those who survive, about 10-20% may lose limbs, become hard of hearing or deaf, have problems with their nervous system, including long term neurologic problems, or have seizures or strokes. Less common manifestations of meningococcal disease include pneumonia and arthritis.

How common is meningococcal disease?

Meningococcal disease is becoming much less common. Over the past 20 years, the overall incidence of meningococcal disease in the US has declined 10-fold. Twenty years ago in Massachusetts there were 80-100 cases of meningococcal disease per year. In contrast, for the past decade the average is approximately 12 cases per year. Declining rates of meningococcal disease may be due in part to the introduction of meningococcal vaccines (initially recommended routinely in 2005 for adolescents aged 11-12 years, unvaccinated college freshmen living in residence halls) as well as other factors such as the decline in cigarette smoking, which may impact susceptibility to this disease.

How is meningococcal disease spread?

These bacteria are passed 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.

Who is most at risk for getting meningococcal disease?

High-risk groups include anyone with a damaged spleen or whose spleen has been removed, those with persistent complement component deficiency (an inherited immune disorder), HIV infection, those traveling to countries where meningococcal disease is very common, microbiologists who are routinely exposed to the organism and people who may have been exposed to meningococcal disease during an outbreak. People who live in certain settings such as college freshmen living in dormitories and military recruits are also at greater risk of disease caused by some of the serotypes.

Which students are most at risk for meningococcal disease?

In the 1990s, college freshmen living in residence halls were identified as being at increased risk for meningococcal disease. Meningococcal disease and outbreaks in young adults were primarily due to serogroup C. However, following many years of routine vaccination of young people with quadrivalent meningococcal conjugate vaccine (for serogroups A, C, W and Y), serogroup B is now the primary cause of meningococcal disease and outbreaks in young adults. Among the approximately 9 million students aged 18-21 years enrolled in college, there are an average of 20 cases and 2-4 outbreaks due to serogroup B reported annually. Although incidence of serogroup B meningococcal disease in college students is low, college students aged 18-21 years are at increased risk compared to non-college students. The close contact in college residence halls, combined with certain behaviors (such as alcohol consumption, exposure to cigarette smoke, sharing food or beverages, and other activities involving the exchange of saliva), may put college students at increased risk.

Is there a vaccine against meningococcal disease?

Yes, there are 2 different meningococcal vaccines. Quadrivalent meningococcal conjugate vaccine (Menactra and Menveo) protects against 4 serotypes (A, C, W and Y) of meningococcal disease. Meningococcal serogroup B vaccine (Bexsero and Trumenba) protects against serogroup B meningococcal disease, for age 10 and older.

Should my child or adolescent receive meningococcal vaccine?

Different meningococcal vaccines are recommended for a range of age and risk groups. Quadrivalent meningococcal conjugate vaccine is recommended routinely for children 11-12 years of age, with a second dose at age 16. College freshmen and other newly enrolled college students living in dormitories who are not yet vaccinated are also recommended to receive quadrivalent meningococcal conjugate vaccine.

Meningococcal B vaccine is recommended for people over age 10 in certain relatively rare high risk groups. In addition, adolescents and young adults (16 through 23 years of age) who are not at high risk **may** 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. Talk with your doctor about which vaccines your child should receive.

Requirements: Massachusetts law requires the following students receive quadrivalent meningococcal conjugate vaccine (unless they qualify for one of the exemptions allowed by the law):

Colleges: All newly enrolled full-time students 21 years of age and under attending a postsecondary institution (e.g., colleges), regardless of housing status, must receive a dose of quadrivalent meningococcal conjugate vaccine on or after their 16th birthday to protect against serotypes A, C, W and Y **or** fall within one of the exemptions in the law.

Residential Schools: All newly enrolled full-time students attending a secondary school who will be living in a dormitory or other congregate housing licensed or approved by the secondary school or institution (e.g., boarding schools) must receive a dose of quadrivalent meningococcal conjugate vaccine **or** fall within one of the exemptions in the law.

More information may be found in the MDPH document "*Information about Meningococcal Disease, Meningococcal Vaccines, Vaccination Requirements and the Waiver for Students at Colleges and Residential Schools.*"

Shouldn't meningococcal B vaccine be required?

CDC's Advisory Committee on Immunization Practices has reviewed the available data regarding serogroup B meningococcal disease and the vaccines. At the current time, there is no routine recommendation and no statewide requirement for meningococcal B vaccination before going to college (although some colleges might decide to have such a requirement). As noted previously, adolescents and young adults (16 through 23 years of age) may be vaccinated with a serogroup B meningococcal vaccine, preferably at 16 through 18 years of age, to provide short term protection against most strains of serogroup B meningococcal disease. This would be a decision between a healthcare provider and a patient. These policies may change as new information becomes available.

How can I protect my child from getting meningococcal disease?

The best protection against meningococcal disease and many other infectious diseases is thorough and frequent handwashing, respiratory hygiene and cough etiquette. Individuals should:

- 1) wash their hands often, especially after using the toilet and before eating or preparing food (hands should be washed with soap and water or an alcohol-based hand gel or rub may be used if hands are not visibly dirty);
- 2) cover their nose and mouth with a tissue when coughing or sneezing and discard the tissue in a trash can; or if they don't have a tissue, cough or sneeze into their upper sleeve.
- 3) not share food, drinks or eating utensils with other people, especially if they are ill.
- 4) contact their healthcare provider immediately if they have symptoms of meningococcal disease.

If your child is exposed to someone with meningococcal disease, antibiotics may be recommended to keep your child from getting sick.

You can obtain more information about meningococcal disease or vaccination from your healthcare provider, your local board of health (listed in the phone book under government), or the MDPH Division of Epidemiology and Immunization at (617) 983-6800 or on the MDPH website at www.mass.gov/dph.