

# PUBLIC HEALTH FACT SHEET

## Meningococcal Disease and College Students

Massachusetts Department of Public Health, 305 South Street, Jamaica Plain, MA 02130

### **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 body organs. In the US, about 2,600 people per year get meningococcal disease and 10-15% die despite receiving antibiotic treatment. Of those who survive, 10-15% may lose limbs, become deaf, have seizures or strokes, or have other problems with their nervous system.

### **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.

### **What are the symptoms of meningococcal disease?**

Signs and symptoms of meningococcal disease include a sudden onset of fever, stiff neck, headache, nausea, vomiting, and/or mental confusion. Changes in behavior such as confusion, sleepiness, and unresponsiveness are important symptoms of illness. A rash may also be present. Anyone who has these symptoms should be seen by a healthcare provider immediately.

### **How are the bacteria 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 in close contact with an infected person who is coughing or sneezing.

### **Who is at most risk for meningococcal disease?**

People who travel to certain parts of the world where the disease is very common are at risk for meningococcal disease. Children and adults with damaged or removed spleens or terminal complement component deficiency (an inherited immune disorder) are also at higher risk. People who live in certain settings, such as college freshmen living in dormitories and military recruits, are also at greater risk of disease.

### **Are students in college at risk for meningococcal disease?**

College freshmen and other newly enrolled college students, living in dormitories and other congregate living situations (such as fraternities and sororities), are at an increased risk for meningococcal disease as compared to individuals of the same age not attending college. The closed setting, combined with certain behaviors (such as alcohol consumption, exposure to cigarette smoke, sharing food or beverages, and activities involving the exchange of saliva), may put college students at a greater risk for infection. The risk of meningococcal disease for other college students, in particular older students and students who do not live in congregate housing, is not increased.

## **Is there a vaccine against meningococcal disease?**

Yes, there are currently 2 vaccines available that protect against 4 of the most common of the 13 serogroups (subgroups) of *N. meningitidis* that cause serious disease. Meningococcal polysaccharide vaccine is approved for use in those 2 years of age and older and provides protection for 3 to 5 years. Meningococcal conjugate vaccine is approved for use in those 11- 55 years of age, is expected to help decrease disease transmission and to provide more long-term protection. Either of these vaccines is acceptable for college students.

## **How complete is the protection with the vaccine?**

Both currently available vaccines provide protection against serogroups A, C, Y and W-135. These 4 serogroups account for approximately two-thirds of the cases that occur in the US each year. Most of the remaining one-third of the cases are caused by serogroup B, not represented in the vaccines.

## **Is the meningococcal vaccine safe?**

A vaccine, like any medicine, is capable of causing allergic reactions. The risks associated with receiving the vaccine are much less than the risk of meningococcal disease. Some people who get meningococcal vaccine have mild side effects, such as redness or pain where the shot was given. Local reactions are more common in those receiving meningococcal conjugate vaccine. These symptoms usually last for 1-2 days. A small percentage of people who receive the vaccine develop fever. The vaccine can be given to pregnant women.

## **Should students receive the meningococcal vaccine prior to entering college?**

Meningococcal vaccine is recommended for college freshmen and other newly enrolled college students living in dormitories or other congregate living situations (such as fraternities and sororities). The risk for meningococcal disease among other college students is not increased. However, those students who want to reduce their risk for meningococcal disease may also choose to be vaccinated.

Massachusetts law requires all new students at schools with grades 9-12 and colleges which provide or license housing to receive meningococcal vaccine, even if these students do not reside in campus-related housing. Beginning in August 2005, all new students at these institutions must provide documentation of having received meningococcal vaccine (within the last 5 years) at least 2 weeks prior to the beginning of classes.

The law contains exemptions. Students may begin classes *without* a certificate of immunization against meningococcal disease if: 1) the student has a letter from a physician stating that there is a medical reason why he/she can't receive the vaccine; 2) the student (or the student's parent or legal guardian, if the student is a minor) presents a statement in writing that such vaccination is against his/her sincere religious belief; or 3) the student (or the student's parent or legal guardian, if the student is a minor) signs a waiver stating that the student has received information about the dangers of meningococcal disease, reviewed the information provided and elected to decline the vaccine.

More information about this requirement may be found in the MDPH document entitled "*Information about Meningococcal Disease and Vaccination and Waiver for Students at Colleges and Secondary Schools.*"

## **Where can a college student get vaccinated?**

Students and their parents should contact their healthcare provider and make an appointment to discuss meningococcal disease, the benefits and risks of vaccination, and the availability of vaccine. Schools and college health services are not required to provide students with this vaccine.

## **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 toll-free at (888) 658-2850 or on the MDPH website at <http://www.mass.gov/dph>
- Your local health department (listed in the phone book under government)

# PUBLIC HEALTH FACT SHEET

## Meningococcal Disease

Massachusetts Department of Public Health, 305 South Street, Jamaica Plain, MA 02130

### 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 meningococemia. Meningococcal meningitis is an infection of the tissue (called the "meninges") that surrounds the brain and spinal cord. Meningococemia 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 in close contact with an infected person who 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 (meningococemia) 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.

#### Meningococemia:

Signs and symptoms of meningococemia 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 meningococemia. 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 currently 2 vaccines available that protect against 4 of the most common of the 13 serogroups (subgroups) of *N. meningitidis* that cause serious disease. Meningococcal polysaccharide vaccine is approved for use in those 2 years of age and older and provides protection for 3 to 5 years. Meningococcal conjugate vaccine is approved for use in those 11- 55 years of age; it is expected to help decrease disease transmission and to provide more long-term protection.

Meningococcal vaccine is now recommended for children 11-12 years of age, for adolescents at high school entry (15 years of age) and freshman and other newly enrolled college students living in dormitories and other congregate living situations (such as fraternities and sororities). Other high-risk groups include anyone with a damaged spleen or whose spleen has been removed, those traveling to countries where meningococcal disease is very common and people who may have been exposed to meningococcal disease during an outbreak. Children and adults with terminal complement component deficiency (an inherited immune disorder) should also receive the vaccine.

In Massachusetts, beginning in August 2005, schools with grades 9-12 and colleges that provide or license residential housing will require new students to provide documentation of having received meningococcal vaccine, or the student (or guardian) must sign a waiver declining vaccination. More information about this requirement may be found in the MDPH document entitled "*Information about Meningococcal Disease and Vaccination and Waiver for Students at Colleges and Secondary Schools.*"

### **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 health care provider
- The Massachusetts Department of Public Health, Division of Epidemiology and Immunization at (617) 983-6800 or toll free at (888) 658-2850 or on the MDPH website at <http://www.mass.gov/dph>
- Your local health department (listed in the phone book under government)

August 2005

## Meningococcal Disease and Students:

### Commonly Asked Questions

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#### **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. In the US, about 1,000-3,000 people get meningococcal disease each year and 10-15% die despite receiving antibiotic treatment. Of those who survive, about 11-19% may lose limbs, become deaf, have problems with their nervous system, become mentally retarded, or have seizures or strokes.

#### **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 at most risk for getting meningococcal disease?**

People who travel to certain parts of the world where the disease is very common are at risk for meningococcal disease. Children and adults with damaged or removed spleens or terminal complement component deficiency (an inherited immune disorder) are at risk. People who live in certain settings such as college freshmen living in dormitories and military recruits are at greater risk of disease.

#### **Are students at increased risk for meningococcal disease?**

The risk of meningococcal disease starts to increase in adolescence and young adulthood. In this age group, the highest rates of disease are in those 15-24 years of age.

#### **Is there a vaccine against meningococcal disease?**

There are currently 2 vaccines available in the US that protect against 4 of the most common of the 13 serogroups (subgroups) of *N. meningitidis* that cause serious disease. Protection with the meningococcal polysaccharide vaccine lasts about 3 to 5 years. The meningococcal conjugate vaccine is expected to help decrease disease transmission and to provide more long-term protection.

#### **Should my child receive meningococcal vaccine?**

Meningococcal vaccine is now recommended routinely for children 11-12 years of age and for 13-18 year-olds, college freshman and other newly enrolled college students living in dormitories who are not yet vaccinated. Other high risk groups include anyone with a damaged spleen or whose spleen has been removed, those traveling to countries where meningococcal disease is very common and people who may have been exposed to meningococcal disease during an outbreak. Children and adults with terminal complement component deficiency (an inherited immune disorder) should also receive the vaccine. Parents of children in these groups should discuss vaccination with their child's healthcare provider.

Massachusetts law now 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 meningococcal vaccine or sign a waiver declining vaccination. More information about this requirement may be found in the MDPH document entitled "*Information about Meningococcal Disease and Vaccination and Waiver for Students at Residential Schools and Colleges.*"

Note: There is currently an ongoing national shortage of meningococcal vaccine. Students not able to get vaccinated because of the shortage can indicate this on the waiver form and will be allowed to attend school.

#### **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.

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 toll-free at (888) 658-2850 or on the MDPH website at <http://www.mass.gov/dph>.

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