Is the NJ Department of Health currently investigating cases of bacterial meningitis?

The New Jersey Department of Health (NJDOH) and local health officials are investigating cases of bacterial meningitis associated with Princeton University.

- The first case was a female student who was away from campus for spring recess in March and developed symptoms of meningitis when returning to the area and went directly to the hospital. This student has recovered.
- The second case was a visitor on Princeton University campus from April 6-8, who was diagnosed with bacterial meningitis after returning to another state. This case is being followed by another state’s health department.
- The most recent case is a male student diagnosed with bacterial meningitis on May 7. This student is recovering.

There have been no new reported cases since May 7.

The NJDOH, local health officials, and Princeton University Health Services (UHS), in consultation with the Centers for Disease Control and Prevention (CDC), continue to work together to identify close contacts, administer prophylactic (preventative) antibiotics to close contacts, and provide recommendations for appropriate public health measures.

What type of bacteria is causing the infection?

All three cases were caused by Neisseria meningiditis serogroup (type) B. This infection is also referred to as meningococcal meningitis.

Do we know anything more about the bacteria causing these infections?

We know that the first 2 people who developed infection had identical strains of the meningococcal bacteria. We are still waiting for results from the most recent case.

Is there a vaccine against this infection?

The meningococcal vaccine provides protection against four different serogroups (strains) of the meningococcal infection - A, C, Y and W-135. There is currently no licensed vaccine that covers serogroup B. As such, even students who have been vaccinated against bacterial meningitis may still be vulnerable to infections with serogroup B.
Is there a link between the cases?
We did not identify a common link among these three cases. Cases of meningococcal disease can occur sporadically in college settings since this population has an increased risk for meningococcal disease.

How does meningococcal disease spread?
Meningococcal disease can be spread from person to person. The bacteria are spread by exchanging respiratory and throat secretions during close (for example, coughing or kissing) or lengthy contact, especially if living in the same dorm or household. Many people carry the bacteria in their throats without getting meningococcal disease. Since so many people carry the bacteria, most cases of meningococcal disease appear to be random and aren't linked to other cases. Although anyone can get meningococcal disease, adolescents and college freshmen who live in dormitories are at an increased risk. The bacteria that cause meningococcal disease are less infectious than the viruses that cause the flu.

What can be done to prevent the spread of this disease on campus and in the community?
You can help prevent the spread of illnesses by:

Covering your mouth and nose when coughing or sneezing.
Cover your mouth and nose with a tissue when coughing or sneezing. It may prevent those around you from getting sick.

Cleaning your hands.
Washing your hands will help protect you against infections. If soap and water are not available, use an alcohol-based hand rub. You should clean your hands before eating.

Practice healthy habits.
Avoid sharing utensils, water bottles or other items contaminated by saliva or respiratory secretions. Avoid smoking and excessive alcohol intake. Eat healthy foods and get plenty of rest.

Individuals should remain vigilant (have increased awareness) for signs and symptoms of meningococcal disease. Individuals who are ill should not attend school or work to prevent the spread of disease to others.

Is there medication available to prevent infection?
Sometimes Neisseria meningitidis bacteria spread to other people who have had close or lengthy contact with a patient with meningococcal disease. People in the same household, roommates, or anyone with direct contact with a patient's oral secretions (saliva) (such as a boyfriend or girlfriend) would be considered at increased risk of getting the infection. People who qualify as
close contacts of a person with meningococcal disease should receive antibiotics to prevent them from getting the disease. This is known as prophylaxis.

**Should people avoid attending Princeton University during this time?**
No. There is no recommendation to cancel any activities or scheduled events on campus.

**Should residents from the surrounding community avoid contact with Princeton or Princeton students?**
No. There is no recommendation for the surrounding community to avoid contact with Princeton or Princeton students. Sporadic cases of meningococcal disease are not unusual on residential campuses. Although anyone can get meningococcal disease, adolescents and college freshmen who live in dormitories are at an increased risk. The bacteria that cause meningococcal disease are less infectious than the viruses that cause the flu. To prevent the spread of any respiratory disease, it is always recommended that you practice good hygiene habits. That means cover your cough to prevent the spread of infection to others, engage in hand hygiene often with soap and water or hand sanitizer (especially before eating), and don’t share items like utensils and water bottles that are contaminated with saliva.

**Is special cleaning of rooms being done when cases of meningitis are diagnosed?**
The bacteria are spread person to person and cannot live outside the body for very long. There are no special environmental cleaning recommendations to prevent infection.

**Should Princeton cancel exams or activities because of these cases?**
No. There is no recommendation to cancel any exams, activities or special events on campus.

**Why are these students getting sick if they received the meningococcal vaccine?**
The vaccine provides protection against serogroups (strains) A, C, Y, and W-135. Serogroup B is not covered by the currently licensed vaccine. The three cases of meningitis were all caused by serogroup B, which is not covered by the vaccine.

**I have not gotten the meningococcal vaccine even though it is recommended? Is it worth getting?**
Yes! The vaccine will provide protection against four strains (A, C, Y, and W-135) of meningococcal bacteria. The Centers for Disease Control and Prevention (CDC) recommends the following for adolescents:

- An initial vaccination at age 11-12
- A booster dose at age 16

For those who receive the first dose at 13 through 15 years of age, a booster is recommended at 16 through 18

CDC suggests that adolescents receive the vaccine less than five years before starting college.
There are others recommended for meningococcal vaccination, including younger children and adults with certain medical conditions, travelers and military recruits. For the full list of persons recommended by the CDC for meningococcal vaccination, please visit: http://www.cdc.gov/vaccines/vpd-vac/mening/who-vaccinate.htm

**Is there any test that can be done to see if I have been exposed to meningococcal bacteria?**

There is no recommendation to test people without symptoms who might have been exposed someone with meningitis. If you think you might have had close contact with someone who has been diagnosed with or has symptoms of meningitis, call your health care provider. He or she can work with public health officials to determine if you should receive antibiotics to prevent infection.

**DISEASE INFORMATION**

**What is meningococcal disease?**

Meningococcal (muh-nin-jo-cok-ul) disease is a severe infection of the blood or the meninges (the covering of the brain and spinal cord). When the infection is in the blood, it is called meningococcemia (me·nin·go·coc·ce·mi·a). When the infection is in the meninges, it is called meningococcal meningitis. Both of these infections are caused by a bacterium (germ) called *Neisseria meningitidis*.

Meningococcal disease is caused by the bacterium *Neisseria meningitidis*. This bacterium has at least 13 different serogroups (types). Five of these serogroups, A, B, C, Y, and W-135, cause almost all invasive disease.

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

Because early symptoms may be mild and similar to those of less serious viral illnesses like a common cold, it would not be unusual for people to delay seeking treatment.

The early symptoms of meningococcal disease include:

- Fever
- Headache
- Body aches
- Feeling very tired or sleepy

Other symptoms that may occur are:

- Stiff neck
- Nausea
- Vomiting
- Confusion
- Sensitivity to light
In newborns and infants, the classic symptoms of fever, headache, and neck stiffness may be absent or difficult to notice. The infant may appear to be slow or inactive, irritable, vomiting or feeding poorly. In young children, doctors may also look at the child’s reflexes, which can also be a sign of meningitis. If you think you or your infant or child has any of these symptoms, call the doctor right away.

The National Meningitis Association created a poster that may be useful for identifying possible symptoms, which is available on their website, [http://www.nmaus.org/meningitis/symptoms.htm](http://www.nmaus.org/meningitis/symptoms.htm)

**How serious is meningococcal disease?**

Left untreated, the disease can progress rapidly, often within hours of the first symptoms, and can lead to shock, death or serious complications, including hearing loss, brain damage, kidney disease or limb amputations. Adolescents and young adults are urged to seek medical care immediately if they experience two or more of these symptoms concurrently, or if the symptoms are unusually sudden or severe. Please contact your health care provider with questions.

**How do people get meningococcal disease?**

The bacteria are spread from person to person through saliva (spit) or other respiratory secretions. You must be in close contact with a sick person's secretions in order for the bacteria to spread. Close contact includes activities such as:

- living in the same household
- kissing
- sharing eating utensils or food
- sharing drinks
- sharing cigarettes
- uncovered face-to-face sneezing or coughing

The bacteria are NOT SPREAD by casual contact activities like being in the same work or school room as the sick person, or handling books or other items that the sick person has touched. Likewise, being around a person who was in contact with the sick person does not put you at risk for catching meningococcal disease.

The bacteria cannot live outside the body for very long, so the disease is not as easily transmitted.

**When are people with meningococcal disease infectious to others?**

The infectious period for meningococcal disease is considered to be from 10 days before the person becomes ill to 1 day after he or she starts on antibiotics. This means that people who were in close contact with the sick person during this time are at higher than average risk to get meningococcal disease.

People who are identified as close contacts should receive antibiotics to prevent them from getting the disease. (NOTE: It is very important to finish your antibiotics even if you begin to feel better, unless otherwise directed by a health care provider.)
If I am exposed to meningococcal disease, how long will it take to develop symptoms?

Most people who are exposed to meningococcal disease will develop symptoms from 1 to 10 days.

How is meningococcal disease diagnosed?

A health care provider diagnoses meningococcal invasive disease by observing symptoms and examining blood and spinal fluid.

What is the treatment for meningococcal disease?

It is important that treatment be started as soon as possible. Most people with meningococcal disease are hospitalized and treated with antibiotics. (NOTE: It is very important to finish your antibiotics even if you begin to feel better, unless otherwise directed by your health care provider.)

Depending on the severity of the infection, other treatments may also be necessary. These can include such things as breathing support, medications to treat low blood pressure, and wound care for parts of the body with damaged skin.

Who is at risk for meningococcal disease?

Adolescents and young adults have an increased incidence of meningococcal disease compared to the general population, accounting for nearly 15 percent of all U.S. cases annually. However, the majority of cases among adolescents may be vaccine-preventable.

The disease is especially significant among college students, since studies show freshmen living in dorms are particularly vulnerable to meningococcal disease. Adolescents and young adults may be at increased risk for infection due to certain lifestyle factors, such as:

- Crowded living conditions (such as dormitories, boarding schools and sleep-away camps)
- Moving to a new residence
- Attendance at a new school with students from geographically diverse areas
- Going to bars
- Active or passive smoking
- Irregular sleeping patterns

Other risk groups include infants and young children, refugees, household contacts of case patients and military personnel.

How can meningococcal disease be prevented?

Vaccination offers the best protection against the disease.

Two types of meningococcal vaccine are available:
Meningococcal polysaccharide vaccine
Meningococcal conjugate vaccines (known as MCV4)

Both vaccines are about 90% effective in protecting against four of the five strains of the bacteria that cause meningococcal disease in the U.S. These are A, C, Y and W-135. Meningococcal Conjugate Vaccine (also known as MCV4) is currently preferred because it provides longer lasting immunity.

No vaccine is currently available in the U.S. to protect against the B strain, although scientists and pharmaceutical manufacturers are conducting studies of vaccines against the B serogroup.

Who should receive meningococcal vaccine?
The Centers for Disease Control and Prevention (CDC) recommends the following for adolescents:

- An initial vaccination at age 11-12
- A booster dose at age 16

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CDC suggests that adolescents receive the vaccine less than five years before starting college.

There are others recommended for meningococcal vaccination, including younger children and adults with certain medical conditions, travelers and military recruits. For the full list of persons recommended by the CDC for meningococcal vaccination, please visit: http://www.cdc.gov/vaccines/vpd-vac/mening/who-vaccinate.htm

Does the NJ Department of Health require students to receive meningococcal vaccine?
Per the NJ Immunization of Pupils in School (N.J.A.C. 8:57-4), all students born on or after January 1, 1997 who are at least 11 years of age and in Grade 6 (or a comparable age level for special education programs) must receive one dose of a meningococcal-containing vaccine. This requirement also applies to all students born on or after January 1, 1997 who are attending/transfering into a New Jersey school at the sixth grade or higher grade level.

In addition, one dose of meningococcal vaccine is required for students entering a four-year institution and who reside in a campus dormitory as per Higher Education Immunization regulations, (N.J.A.C. 8:57-6). All four-year institutions are required to provide information on meningococcal disease to all new students (including those students who are commuters) prior to matriculation. This information will need to include the nature and severity, causes, disease prevention and treatments, and the availability of a meningococcal vaccine to prevent disease.

What are the side effects of vaccination?
Meningococcal vaccines are very safe and effective. As with all vaccines, there can be minor reactions, including pain and redness at the injection site or a mild fever, which typically last for one to two days. Severe side effects, such as a serious allergic reaction, are very rare.
Where can I get additional information?

- Your health care provider
- Your local health department
  [http://www.state.nj.us/health/lh/directory/lhdselectcounty.shtml](http://www.state.nj.us/health/lh/directory/lhdselectcounty.shtml)
- NJ Department of Health
- Centers for Disease Control and Prevention

This information is for educational purposes only and is not intended to replace consultation with a health care professional.