



## **Background: Meningococcal Disease on Campus**

### **Overview of Meningococcal Disease**

Meningococcal disease is a potentially life-threatening bacterial infection that can lead to meningococcal meningitis, an inflammation of the membranes surrounding the brain and spinal cord, or meningococcal septicemia, an infection of the blood.

Meningococcal disease, caused by bacteria called *Neisseria meningitidis*, is the leading cause of bacterial meningitis in older children and young adults in the United States. It strikes 1,400 to 3,000 Americans each year and is responsible for approximately 150 to 300 deaths.

Adolescents and young adults account for nearly 30 percent of all cases of meningitis in the United States. In addition, approximately 100 to 125 cases of meningococcal disease occur on college campuses each year, and five to 15 students will die as a result. Evidence shows approximately 70 to 80 percent of cases in the college age group are caused by serogroup C, Y, or W-135, which are potentially vaccine-preventable.

### **Vaccination Recommendations for College Students**

In May 2005, the Centers for Disease Control and Prevention (CDC) issued recommendations stating that all incoming college freshmen living in dormitories be vaccinated against meningococcal disease. The CDC also recommended vaccination for all adolescents at high school entry and during the pre-adolescent health care visit (11-12 years old).

The American College Health Association (ACHA) issued similar immunization recommendations for all first-year students living in residence halls. The CDC and ACHA recommendations further state that other college students under 25 years of age may choose to receive meningococcal vaccination to reduce their risk for the disease.

ACHA and CDC recommendations, coupled with the availability of a new vaccine that may provide longer duration of protection, will help increase rates of immunization against meningococcal disease and will give college health professionals the guidance needed to help protect college students against meningococcal disease.

### **Meningococcal Disease Caused by Five Strains/Serogroups**

Five predominant strains or serogroups of *N. meningitidis* account for most cases of meningococcal disease. These are A, B, C, Y, and W-135. The currently available vaccine protects against four of the five strains (A, C, Y, and W-135), and evidence shows approximately 70 to 80 percent of cases in the college age group are caused by serogroup C, Y, or W-135, which are potentially vaccine-preventable. No vaccine is available for widespread vaccination against serogroup B.

## **Transmission and Symptoms of the Disease**

Meningococcal disease is contagious and progresses very rapidly. The bacteria are spread person-to-person through the air by respiratory droplets (e.g., coughing, sneezing). The bacteria also can be transmitted through direct contact with an infected person, such as oral contact with shared items like cigarettes or drinking glasses, and through kissing.

Meningococcal bacteria attach to the mucosal lining of the nose and throat, where they can multiply. When the bacteria penetrate the mucosal lining and enter the bloodstream, they move quickly throughout the body and can cause damage to various organs.

Many people in a population can be a carrier of meningococcal bacteria (up to 11 percent) in the nose and back of the throat, and usually nothing happens to a person other than acquiring natural antibodies.

Symptoms of meningococcal disease often resemble those of the flu or other minor febrile illness, making it sometimes difficult to diagnose, and may include high fever, severe headache, stiff neck, rash, nausea, vomiting, fatigue, and confusion. Students who notice these symptoms – in themselves, friends, or others – especially if the symptoms are unusually sudden or severe, should contact their college health center or local hospital.

If not treated early, meningitis can lead to death or permanent disabilities. One in five of those who survive will suffer from long-term side effects, such as brain damage, hearing loss, seizures, or limb amputation.

## **Persons at Risk for the Disease, Including College Students**

Meningococcal disease can affect people at any age. Infants are at the highest risk for getting the disease. Disease rates fall through later childhood but begin to rise again in early adolescence, peaking between the ages of 15 and 20 years.

Due to lifestyle factors, such as crowded living situations, bar patronage, active or passive smoking, irregular sleep patterns, and sharing of personal items, college students living in residence halls are more likely to acquire meningococcal disease than the general college population.

Prior to 1971, military recruits experienced high rates of meningococcal disease, particularly serotype C disease. The United States military now routinely vaccinates new recruits. Since the initiation of routine vaccination of recruits, there has been an 87 percent reduction in sporadic cases and a virtual elimination of outbreaks of invasive meningococcal disease in the military.

In addition to increased risk because of crowded living situations, proximity to a person diagnosed with disease (e.g., being a household contact) also increases one's risk of disease. Other factors also increase risk, such as a compromised immune system (which might be caused by HIV/AIDS or taking certain chemotherapy or immuno-suppressants) or having no spleen. Even something as simple as a respiratory tract infection may increase the risk of getting the disease. Certain genetic risk factors also may increase susceptibility to infection.

## **Vaccination to Prevent Meningococcal Disease**

Meningococcal vaccination is recommended for all first-year students living in residence halls to protect against four of the five most common strains (or types) of *N. meningitidis* (A, C, Y, and W-135). In persons 15 to 24 years of age, 70 to 80 percent of cases are caused by potentially vaccine-preventable strains. All other college students younger than 25 who wish to reduce their risk of infection may choose to be vaccinated.

Because disease rates begin to climb earlier in adolescence and peak between the ages of 15 and 20 years, the vaccine also is recommended for adolescents at high school entry and young adolescents at the pre-adolescent health care visit (11 and 12 year-olds).

### **For More Information**

For more information on meningococcal disease and the vaccine, please contact Herschel A. Smith Health Services at 229-931-2235 or [health@canes.gsw.edu](mailto:health@canes.gsw.edu). You also can visit the websites of the American College Health Association, [www.acha.org/meningitis](http://www.acha.org/meningitis), and the Centers for Disease Control and Prevention, [www.cdc.gov/ncidod/diseases/submenu/sub\\_meningitis.htm](http://www.cdc.gov/ncidod/diseases/submenu/sub_meningitis.htm).

### **The American College Health Association**

The American College Health Association, the nation's principal advocate and leadership organization for college and university health, represents a diverse membership that provides and supports the delivery of health care and prevention and wellness services for the nation's 16 million college students. The association provides advocacy, education, communications, products, and services, as well as promotes research and culturally competent practices to enhance its members' ability to advance the health of all students and the campus community. For more information, visit [www.acha.org](http://www.acha.org).

## References

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