

Meningococcal Disease (*Neisseria meningitidis*, invasive disease)

Meningococcal disease is a severe infection of the bloodstream and/or meninges (a thin lining covering the brain and spinal cord) caused by bacteria. Bacterial meningitis is usually more severe than viral meningitis but is less common. Bacterial meningitis is most often caused by *Haemophilus influenzae* type B, *Streptococcus pneumoniae*, or *Neisseria meningitidis*. The most severe form of bacterial meningitis is caused by *Neisseria meningitidis*. It is a relatively rare disease and usually occurs as a single isolated event. Clusters of cases or outbreaks are rare in the United States.

Transmission

Meningococcal meningitis is spread by direct, close contact with nasal or throat discharges of an infected person. Many people carry meningococcal bacteria in their nose and throat without any signs of illness, while others may develop serious symptoms.

Symptoms

Although most people exposed to the meningococcal bacteria do not become seriously ill, some may develop fever, headache, vomiting, stiff neck and a rash. Meningitis can cause sensitivity to light, confusion, drowsiness, seizures and sometimes coma. The disease is sometimes fatal.

Diagnosis

A health care provider is needed to diagnose meningococcal disease. A laboratory test of the site of infection is needed to determine which bacterium is causing the illness.

Treatment

Bacterial meningitis is treated with antibiotics and supportive measures for certain symptoms.

Prevention

Meningococcal conjugate vaccine (MCV4) protects against four strains (A, C, Y, and W-135) of *Neisseria meningitidis* and is recommended for all children 11 to 12 years of age. This vaccine is required for K-12 attendance, in North Dakota, with the first dose given before middle school and the second dose given before eleventh grade. Those who were first vaccinated after age 16 do not need a booster dose. The vaccine is also recommended for individuals who are 21 or younger and living in on-campus housing who have not been previously vaccinated with meningococcal vaccine or received their last meningococcal vaccination more than five years prior to entering college.

North Dakota colleges and universities require MCV4 for students 21 and younger. MCV4 is recommended for people who travel to certain areas of the world or who remain at risk of meningococcal disease due to a high-risk condition or occupational exposure, such as laboratory workers.

Two vaccines that protect against *Neisseria meningitidis* serogroup B are also available. These vaccines are recommended for people ages 10 and older known to be at increased risk for meningococcal disease. This includes persons with persistent complement component deficiencies, persons with anatomic or functional asplenia, microbiologists routinely exposed to isolates of *Neisseria meningitidis* and persons identified as at increased risk because of a serogroup B meningococcal disease outbreak. People ages 16-23 who do not fall into one of these categories can also be vaccinated.

Good hand washing techniques can help prevent the spread of disease. If you have been in close contact (household members, child care playmates, intimate contacts, health care personnel performing mouth-to-mouth resuscitation) with a diagnosed case, you need to consult a physician regarding antibiotic treatment.

Cost should not be a barrier to vaccination. The Vaccines for Children (VFC) Program provides all recommended vaccines to children who are American Indian, uninsured or underinsured, and Medicaid-eligible. Many recommended vaccines are also available for uninsured adults. Vaccines are available at your local health care provider, public health department or pharmacy.

Exclusion Guidance

People with meningococcal disease should be excluded from school, child care, and work until at least 24 hours after antibiotic therapy and until they are physically well enough to attend. For additional information about smallpox, please contact the North Dakota Department of Health and Human Services, Disease Control and Forensic Pathology Section, at 701.328.2378

Suspected cases should be reported immediately to the North Dakota Department of Health and Human Services.

For additional information about meningococcal disease, please contact the North Dakota Department of Health and Human Services, Disease Control and Forensic Pathology Section, at 701.328.2378.

Resources:

1. Center for Disease Control and Prevention. (2022, February 7). *CDC Meningococcal Disease*. Center for Disease Control and Prevention. Retrieved June 29, 2023, from <https://www.cdc.gov/meningococcal/index.html>.
2. Kimberlin, D. W., Barnett, E. D., Lynfield, R., Sawyer, M. H. (2021) Red Book: 2021-2024 Report of the Committee on Infectious Diseases. 32nd ed. American Academy of Pediatrics. [Management and Prevention of Infectious Diseases; Meningococcal Disease] [pages 519-532].