**MENINGITIS FACT SHEET**

**What is meningitis?**

Meningitis is an inflammation of the membranes that cover the brain and spinal cord. It can be caused by a number of infectious agents including viruses and bacteria. The type of meningitis and its cause can only be determined by conducting laboratory tests.

***Viral meningitis*** (also called aseptic meningitis) is the most common type of meningitis and is often less severe than bacterial meningitis. The majority of cases of aseptic meningitis are due to viruses called enteroviruses, especially from late summer to autumn. Fatal cases of viral meningitis are rare and most people recover on their own without treatment.

***Bacterial meningitis*** is very serious and can be deadly. Various risk factors include age, community settings, certain medical conditions, working with meningitis-causing pathogens, and travel to at-risk countries. Several types of bacteria can cause meningitis: Haemophilus influenzae, Neisseria meningitidis, Streptococcus pneumoniae, and Listeria monocytogenes.

* ***Haemophilus meningitis*** is most frequently caused by Haemophilus influenza type b. Also known as Hib, this bacterium was once the leading cause of bacterial meningitis in children. The new Hib vaccines have greatly reduced the number of cases of this type of meningitis.
* ***Meningococcal disease***, caused by Neisseria meningitidis, is often severe and can be deadly. The bacteria can cause infections of the lining of the brain/spinal cord (meningitis) and a severe blood infection called meningococcal septicemia or meningococcemia. Doctors treat meningococcal disease with antibiotics, but quick medical attention is extremely important. Even with antibiotic treatment, 10 to 15 in 100 people infected with meningococcal disease will die and 11 to 19 will have long-term disabilities, such as loss of limb(s), deafness, nervous system problems, or brain damage. Keeping up to date with recommended vaccines is the best defense against meningococcal disease.
* ***Pneumococcal meningitis*** is an illness caused by bacteria called pneumococcus. It is often mild, but can cause serious symptoms, lifelong disability, or death. Children younger than 2 years old are among those most at risk for the disease.
* ***Listeria monocytogenes***bacteria can also cause meningitis and occurs most often in newborns, older adults, and people with long-term illnesses or impaired immune systems. About 10% of cases of bacterial meningitis each year in the US are caused by Listeria monocytogenes. It can be a serious illness, causing death in some cases.

**How is it spread?**

Both viral meningitis and bacterial meningitis can be spread through direct contact with nose and throat secretions. Healthy persons, who have no signs of illness, can have these bacteria in their nose or throat, and spread them to others. Sharing a glass, cup or eating utensil, coughing or sneezing into the face of another person, or sharing a cigarette are some examples of how the disease can be spread. Certain bacteria can also enter the body through contaminated food or water.

Viral meningitis can be transmitted by fecal contamination (in addition to respiratory secretions) when an infected person sheds or excretes virus in his/her stool.

**What are the symptoms of meningitis?**

Meningitis symptoms include sudden onset of fever, headache, and stiff neck. There are often other symptoms, such as nausea, vomiting, photophobia (increased sensitivity to light), and altered mental status (confusion). Symptoms can develop as soon as two to three days.

In newborns and infants, the classic findings of fever, headache, and stiff neck may or may not be present. An infant may have no other symptoms than being listless, irritable and sleepy, having little interest in feeding and possibly vomiting. Also, a purplish red rash may appear with meningococcal meningitis.

It is very important to see a healthcare provider right away if you think you (or your child) might have meningitis; a doctor can determine if you have the disease, the type of meningitis, and the best treatment.

**How is meningitis diagnosed?**

Cerebrospinal fluid or blood can be tested to determine what is causing the meningitis. Such identification is important in selecting effective antibiotics for treating bacterial meningitis cases.

**How is meningitis treated?**

Treatment for persons who have viral meningitis usually consists of reducing fever and making sure they take plenty of liquids. All forms of bacterial meningitis, however, require the immediate medical attention of a physician and can be treated with a number of antibiotics. It is important to start treatment as soon as possible.

**How is meningitis prevented?**

The most effective way to protect you against certain types of bacterial meningitis is to get vaccinated. There are vaccines for three types of bacteria that can cause meningitis: Neisseria meningitides, Streptococcus pneumoniae, and Hib – more below. There are no vaccines to protect against viral meningitis. You can take the following steps to help lower your chances of getting infected:

* Wash your hands often with soap and water following exposure to respiratory secretions, including handling of soiled tissues/handkerchiefs, after changing diapers, using the toilet/assisting others, or coughing or blowing your nose. Use proper hand washing technique: Wet hands with soap and warm water. Rub hands for 10 to 20 seconds, making sure you clean under fingernails. Rinse under warm running water. Dry hands on a clean towel or paper towel. When paper towels are available, use a paper towel to turn off the water faucet and throw the towel away.
* Avoid close contact such as kissing, hugging, sharing straws, cups, glasses, water bottles used during sports or recreation, eating utensils, cigarettes, etc., and wash all dishes thoroughly
* Cover your coughs and sneezes with a tissue or your upper shirt sleeve, not your hands.
* Clean and disinfect frequently touched surfaces, such as toys and doorknobs, especially if someone is sick.
* Stay home when you are sick.

If someone has bacterial meningitis, household contacts and others who have had close personal contact with infected persons are recommended to receive a preventive antibiotic, often rifampin, which kills bacteria living in nose and throat secretions. For contacts to certain cases of Haemophilus influenzae meningitis, rifampin also may be recommended. Even if rifampin or another preventive antibiotic is taken, close contacts should be observed for any signs of disease and should be promptly evaluated by a physician if symptoms occur. Since the recommendations for use of rifampin and other preventive antibiotics vary according to the specific situation, it is best to consult with a physician or local health department for recommendations.

**Is there a vaccine to protect me from getting sick?**

Yes, there are 3 different meningococcal vaccines.

* Quadrivalent meningococcal conjugate vaccine (Menactra and Menveo) protects against 4 serotypes (subgroups), A, C, W, and Y, of meningococcal disease. It is recommended for all children 11-12 years of age, with a booster dose at 16 years old. Adolescents and young adults who have not been vaccinated according to routine recommendations should talk to their healthcare provider about vaccination according to the “catch up” schedule.

In certain situations, other children and adults are recommended to get meningococcal vaccines.

College freshmen, military recruits and other newly enrolled college students living in dormitories who are not yet vaccinated are also recommended to receive meningococcal conjugate vaccine. Those adults traveling to or residing in countries in which the disease is common, people who are part of a population identified as higher-risk because of an outbreak, microbiologists or other health care providers who are routinely exposed to Neisseria meningitidis, as well as others with certain medical conditions should also get the conjugate vaccine.

* Meningococcal serogroup B vaccine (Bexsero and Trumenba) protects against serogroup B meningococcal disease. It is recommended for people with certain relatively rare high-risk health conditions age 10 or older (examples: persons with a damaged spleen or whose spleen has been removed and, those with persistent complement component deficiency)., Again, microbiologists and others working with Neisseria. meningitidis, and people who are part of a population identified to be at increased risk may have been exposed during an outbreak should get this vaccine). Adolescents and young adults (16 through 23 years of age) may also 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.
* Quadrivalent meningococcal polysaccharide vaccine (Menomune) also protects against 4 types (A, C, W, Y) of the 13 serogroups (subgroups) of Neissseriameningitidis that cause serious diseases. It is recommended for people 56 years of age or older with certain high-risk conditions, travelers, or during community outbreaks.

**Should I get vaccinated?**

Some students may have received a vaccination as a requirement of state law. Other students may not have received the vaccination. Beginning fall term 2016 – 2017, all new students under the age of 22 are required to show proof of having at least one dose of meningococcal conjugate on or after the age of 16. A 2nd vaccine MUST be given if the 1st vaccine was given before age 16. Although not required by the University for students over the age of 22, it is highly recommended that all students receive this immunization. All Rush students are encouraged to consult with their physician or healthcare provider regarding any questions about meningitis or the vaccination as they consider the best course of action.

Sources:

Centers for Disease Control and Prevention

Illinois Department of Public Health