What is Meningococcal Disease?

Meningococcal disease is a contagious and potentially life-threatening infection that can manifest as bacterial meningitis—an infection of the membrane around the brain and spinal cord—and septicemia—a blood infection. Caused by the bacterium Neisseria meningitidis (N. meningitidis), meningococcal disease kills as many as one in every seven patients who contract it. Ninety-two percent of patients who contract meningococcal disease are hospitalized, with six days being the median time spent in the hospital. Even with early and appropriate treatment, patients can die, often within 24-48 hours of onset of symptoms.

Of those who survive, approximately one in every five will suffer permanent, devastating side effects, including amputations, seizures, paralysis, hearing loss and learning disabilities. In most cases, the resulting side effects require life-long, expensive medical treatment and ongoing assistance.

Overall incidence of meningococcal disease is cyclical, ranging between 1,000 and 3,000 cases per year in the United States.

Symptoms of Meningococcal Disease

Meningococcal disease is one of the most feared diseases because its initial symptoms are hard to diagnose. Initial symptoms appear similar to the flu and include fever, headache and nausea. Classic symptoms associated with bacterial meningitis and septicemia often do not appear for several hours, which can delay lifesaving treatment.

<table>
<thead>
<tr>
<th>Meningitis symptoms</th>
<th>Septicemia symptoms</th>
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<tbody>
<tr>
<td>Fever</td>
<td>Fever</td>
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<tr>
<td>Vomiting</td>
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<tr>
<td>Severe headache</td>
<td>Limb, joint or muscle pain</td>
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<td>Painfully stiff neck</td>
<td>Cold hands and feet</td>
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<tr>
<td>Sensitivity to light</td>
<td>Shivering</td>
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<tr>
<td>Very sleepy</td>
<td>Pale or mottled skin</td>
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<tr>
<td>Confusion</td>
<td>Breathing fast or breathless</td>
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<tr>
<td>Rash (not present in all cases)</td>
<td>Small flat or raised fine rash of red or purple spots that progresses to larger red patches or purple lesions</td>
</tr>
<tr>
<td>Seizures</td>
<td>Very sleepy</td>
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<td></td>
<td>Confusion</td>
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How Do You Get Meningococcal Disease?

At any given time, as many as one in 10 people will carry the bacteria that cause meningococcal disease in their nose and throat without showing any symptoms. Once acquired, a person can carry the bacteria for five to six months. Less than one percent of carriers will develop the disease, but they may spread the bacteria to others. The bacteria can be easily passed between people through coughing, sneezing...
and direct contact with a carrier. In fact, close contact with a carrier can increase the risk of acquiring the bacteria by 800 fold.

Most cases of meningococcal disease occur in previously healthy people without any warning. Transmission of the disease is often associated with changes in lifestyles that put people in new situations and close contact for an extended period of time, and increase the number of people they encounter.

Lifestyle changes that can increase the chances of contracting meningococcal disease include:
- Going to clubs
- Traveling
- Joining the military
- Starting college
- Smoking
- Kissing

**How to Prevent Meningococcal Disease**

When a person has been exposed to someone who has contracted meningococcal disease, he or she is often given a short-term course of antibiotics to help prevent him or her from developing the illness. This approach does not stave off future infections, though.

The most effective way to prevent meningococcal disease is through immunization using a vaccine that offers broad protection to at-risk populations. Vaccination campaigns against two other leading causes of bacterial meningitis and septicemia—*Haemophilus influenzae* type B (Hib) and *Streptococcus pneumoniae* (pneumococcus)—have been 99 percent effective in reducing disease incidence and death caused by these illnesses. Meningococcal disease is the third and final leading form of bacterial meningitis to be addressed by vaccines.

**Who’s at Risk of Getting Meningococcal Disease?**

The highest rates of meningococcal disease occur in infants and toddlers, with another spike seen in adolescents, often because they start to encounter new situations and undergo changes in their lifestyles.

Infants under 9 months of age are at the greatest risk of developing meningococcal disease and represent the greatest unmet need in terms of prevention. Adolescents and young adults, though, have unusually high death rates from meningococcal disease. A study in the United States found that nearly a quarter of meningococcal disease infections in people 15 to 24 years of age were fatal. Despite this, millions of adolescents remain at risk of developing meningococcal disease each year because they have not been vaccinated.
Understanding Different Meningococcal Disease Groups

The vast majority of all meningococcal disease infections are caused by five groups, of which four are vaccine-preventable—A, C, Y and W-135. Currently, groups C, Y and W-135 are the leading causes of infection and death from meningococcal disease, accounting for approximately half of all cases in the United States. The group that causes the most cases of meningococcal disease year over year constantly changes. In the early 1990s, group Y caused only 9 percent of cases. By 2006, the disease shifted and group Y caused the majority of meningococcal disease infections in the United States, accounting for 39 percent of all cases. Likewise, group A was responsible for a large percentage of disease in the early 1900s, but is rarely seen today.

In our modern globalized world, travelers also have the potential to acquire and to contribute to the spread of meningitis and introduce new groups to countries in which they were not previously present. Group W-135 is considered a growing threat in North America and Europe because of the increase in travelers bringing it home from endemic regions.

Vaccination Recommendations

The U.S. Centers for Disease Control and Prevention recommends vaccination against meningococcal disease for the following groups:

- Children from 2 to 10 years of age with persistent complement component deficiency, anatomic or functional asplenia and certain other conditions placing them at high risk
- Pre-teens and adolescents from 11 to 18 years of age—the optimal age for vaccination is considered between 11 and 12 years of age or between 13 and 18 years of age if not previously vaccinated
- Adults who are considered to be at high risk including persons with persistent complement component deficiency, persons with anatomic or functional asplenia, college freshmen living in dormitories, microbiologists routinely exposed to isolates of *N. meningitidis*, military recruits and travelers to or residents of countries in which *N. meningitidis* is hyperendemic or epidemic

For more information, please visit www.meningitis.com.