

hand hygiene

# I Like to Hang Around

BY HEATHER SAUNDERS, MPH, RN, CIC

I am a round, gram-negative bacterium that appears in pairs. Before my genus and species is determined, I often appear on microbiology reports as a “gram-negative diplococci.” I am particularly fond of your nose and throat. I love it there so much that I make my home in the noses and throats of 10% of the human population. I can live there without you ever knowing. If I decide to colonize you, however, scientists will refer to you as a “carrier” because you’ll be carrying me around without being infected.

I was first discovered in 1887 by Anton Weichselbaum, a Viennese pathologist, after he isolated me from an infected patient’s cerebrospinal fluid (CSF). Early scientific documentation may have discussed one of the diseases I can cause when in 1661, English physician Thomas Willis discussed patients with fever and an “inflammation of the meninges.” In 1891, shortly after Weichselbaum’s discovery, Heinrich Quincke, a German surgeon, developed a procedure for collecting CSF for examination, known as a lumbar puncture. Today, this is one of the ways physicians identify me when I’ve infected patients. Outbreaks and epidemics have been identified over the centuries but were first recorded in 1805 and 1840, when outbreaks in Geneva, Switzerland, and sub-Saharan Africa were described. Since then, quick identification and response have remained key to outbreak control and providing lifesaving treatment.



To discover who I am, visit [InfectionControlToday.com/view/julaug-2023-bug-month](https://www.infectioncontroltoday.com/view/julaug-2023-bug-month)

If given the opportunity, I can cause brain, spinal cord, or blood infections. Most people who encounter me do not become sick. However, quick identification and treatment for those infected is imperative because the mortality rate for infection is as high as 15%. Although anyone can be infected, certain populations are at a higher risk. Infants, individuals aged 16 to 23 years, and older adults have the highest infection rates from me. People living in congregate settings, such as college students and military personnel, are also at an increased risk because of how I spread from person to person. Individuals with weakened immune systems are also more susceptible and likely to become infected if exposed. Although infection occurs throughout the world, my incidence is highest in a section of sub-Saharan Africa; travelers to this area are also at increased risk.

I spread and cause infection through shared respiratory secretions or saliva (kissing, for example) or with prolonged, lengthy contact. It takes approximately 3 to 4 days, with a range of 2 to 10 days, for susceptible individuals exposed to me to become infected. Once they are infected, the disease progresses rapidly and can be severe. Initial signs and symptoms when the brain and meninges are infected include fever, headache, and a stiff neck.

These are telltale symptoms, although additional symptoms can include nausea, vomiting, light sensitivity, and confusion. In infants, my presentation may include slow responses, vomiting, poor feeding, and a bulging anterior fontanelle (the soft spot on the skull of infants). When the blood is infected, patients will likely present with some combination of fever, chills, fatigue, vomiting, diarrhea, rapid breathing, and body aches.

Thankfully, there’s a vaccine to prevent infection from me, reducing the incidence of infection worldwide. Vaccination is recommended for all preteenagers and teenagers. Today, the annual incidence of infection in the United States is 1.33 cases per 100,000 population, a historic low for the disease. Because cases can be severe, individuals with signs or symptoms should seek medical care immediately. When the disease is suspected, providers will collect blood samples and CSF to look for my presence. Upon suspecting or confirming infection, patients will be treated with antibiotics and provided with supportive care, such as hydration.

*I am Neisseria meningitidis!* □