

Introduction and Symptoms for the *Clostridal*

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COMMENTARY

Characteristics of a clostridia bacteria

Clostridium is a genus of gram-positive, spore-forming bacteria belonging to the family Clostridiaceae. Vegetative cells are rod shaped and arranged in pairs or short chains. The majority of species are obligate anaerobes; however, some species can grow under aerobic conditions or are aero tolerant.

Clostridia infection, any of several infectious conditions in animals and humans resulting from *Clostridium* species, bacteria that are found in soil and that enter the body *via* puncture wounds or contaminated food. These bacteria synthesize and release poisonous substances called exotoxins.

Clostridia causes

All clostridia wound infections occur in an anaerobic tissue environment caused by an impaired blood supply secondary to trauma, surgery, foreign bodies, or malignancy. Contamination of the wound by clostridia from the external environment or from the host's normal flora produces the infection. *Clostridium* species are anaerobic, fermentative, spore-forming gram-positive bacteria belonging to the phylum formicates.

Overview

Clostridioides difficile is a bacterium that causes an infection of the large intestine (colon). Symptoms can range from diarrhea to life-threatening damage to the colon. The bacterium is often referred to as *C. difficile* or *C. diff*.

Illness from *C. difficile* typically occurs after use of antibiotic medications. It most commonly affects older adults in hospitals or in long-term care facilities. In the United States, about 200,000 people are infected annually with *C. difficile* in a hospital or care setting. These numbers are lower than in previous years because of improved prevention measures.

People not in care settings or hospitals also can develop *C. difficile* infection. Some strains of the bacterium in the general population may cause serious infections or are more likely to

affect younger people. In the United States, about 170,000 infections occur annually outside of health care settings, and these numbers are increasing.

The bacterium was formerly named *Clostridium difficile*.

Symptoms

Some people carry *C. difficile* bacteria in their intestines but never become sick. These individuals are carriers of the bacteria and may spread infections.

Signs and symptoms usually develop within 5 to 10 days after starting a course of antibiotics. However, they may occur as soon as the first day or up to three months later.

Mild to moderate infection

The most common signs and symptoms of mild to moderate *C. difficile* infection are:

- Watery diarrhea three or more times a day for more than one day
- Mild abdominal cramping and tenderness

Severe infection

People who have a severe *C. difficile* infection tend to become dehydrated and may need to be hospitalized. *C. difficile* can cause the colon to become inflamed and sometimes form patches of raw tissue that can bleed or produce pus. Signs and symptoms of severe infection include:

- Watery diarrhea as often as 10 to 15 times a day
- Abdominal cramping and pain, which may be severe
- Rapid heart rate
- Dehydration
- Fever
- Nausea
- Increased white blood cell count
- Kidney failure
- Loss of appetite
- Swollen abdomen
- Weight loss

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- Blood or pus in the stool

C. difficile infection that is severe and sudden, an uncommon condition, may also cause intestinal inflammation leading to enlargement of the colon (also called toxic megacolon) and

sepsis. Sepsis is a life-threatening condition that occurs when the body's response to an infection damages its own tissues. People who have these conditions are admitted to the intensive care unit.