



Clostridium difficile (*C. diff.*)

What is *Clostridium difficile*?

Clostridium difficile (pronounced Klo-STRID-ee-um-dif-uh-SEEL), also known as “*C. diff.*,” is a germ that can cause diarrhea. Most cases of *C. diff.* infection occur in patients taking antibiotics.

Who is at risk for *Clostridium difficile*?

The elderly and people with certain medical problems have the greatest chance of getting *C. diff.* Most cases occur in people who have been treated with antibiotics. Anyone who is taking antibiotics is susceptible, although most cases occur in people who have been hospitalized.

What are the symptoms of *Clostridium difficile*?

The most common symptoms include watery diarrhea, fever, loss of appetite, nausea and tenderness. In severe cases, *C. diff.* causes the colon to become inflamed (colitis) or to form patches of raw tissue that can bleed or produce pus (pseudomembranous colitis). Signs and symptoms of severe infection include watery diarrhea ten to fifteen times a day, abdominal cramping and pain, fever, nausea, dehydration and weight loss.

How soon do symptoms appear?

Some people who have *C. diff.* never become sick; however, they can still spread the infection. Illness usually develops during or shortly after a course of antibiotics, but signs and symptoms may not appear for weeks or even months afterward.

How is *Clostridium difficile* spread?

C. diff. is spread through direct person-to-person contact, usually by hand-to-hand contact, or via contact with environmental surfaces that have been contaminated with the live bacteria or spores. This can be any surface such as towels and bed sheets, as well as doorknobs and telephones.

How is a person diagnosed?

A stool sample is tested for the presence of *C. difficile* toxin. Some labs use a polymerase chain reaction (PCR) test, the most accurate diagnostic test available.

What is the treatment?

Under the direction of your physician, stopping antibiotics you are currently taking can eliminate the symptoms and sometimes doctors will treat with specific antibiotics. However, in recent years *C. diff.* infections have become more frequent, more severe and more difficult to treat. The drugs used to treat *C. diff.* can often kill the germs but not the spores, which can germinate and eventually produce toxins. This is why 20 percent of people treated for *C. diff.* may have a relapse one week to two months after treatment. People with relapsing *C. diff.* are prone to further relapses, making eradication more difficult with each one.

Does past infection make a person immune?

No. People can be reinfected with the *C. diff* bacteria or dormant spores.

Should children or others be excluded from day care, school, work or other activities if they have *Clostridium difficile*?

Once they have no fever, loose stools can be contained (with infants for example, if stool can be contained within their diaper) and they have completed their prescribed antibiotics, they can return to their normal daily activity.

What can be done to prevent the spread of *Clostridium difficile* infection?

Hand washing is the key prevention effort you can do to prevent the spread of *C. diff*. Hands should be washed using soap and water. Alcohol-based hand rubs do not kill the *C. diff* spores. Hands should be washed immediately after using the bathroom, assisting someone, and immediately before preparing food and eating. Hands also should be washed after handling soiled clothing or bedding/towels. People who live with you should wash their hands often.

Environmental cleaning also is very important. This includes hard surfaces throughout the living area including doorknobs, telephones and remotes as well as bathroom fixtures and counter tops. Cleaning with one part bleach to nine parts water is recommended. You also may use an Environmental Protection Agency (EPA)-registered disinfectant to clean hard surfaces.

When your physician prescribes you antibiotics, make sure you take them until completed. Do not take half doses or start and stop your antibiotics. Always follow the labeled instructions.

Additional Information:

Additional information is available at www.ndhealth.gov/disease/hai or by calling the North Dakota Department of Health at 1.800.472.2180.

Resources:

1. Centers for Disease Control and Prevention (CDC). *Clostridium difficile* Infection. Retrieved from www.cdc.gov/HAI/organisms/cdiff/Cdiff_infect.html
2. Mayo Clinic. *C. difficile*. Retrieved from www.mayoclinic.com/health/c-difficile/DS00736
3. U.S. Environmental Protection Agency (EPA). Guidance for the Efficacy Evaluation of Products with Sporicidal Claims against *Clostridium difficile*. Retrieved from www.epa.gov/oppad001/cdif-guidance.html