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## Clostridium difficile Infection

### Overview

#### What is *Clostridium difficile*?

*Clostridium difficile* (say: "klo-STRID-ee-um dif-uh-SEEL"), or *C. diff.*, is a type of bacteria that lives in many people's intestines. For these people, *C. diff.* is part of the normal balance of bacteria living in the intestines. It's also present in the environment, such as in the soil, water and in animal feces.

Most people never experience any problems with *C. diff.* But if something throws off the balance in your intestines, *C. diff.* may begin to grow out of control. The bacteria start to release toxins that attack the lining of the intestines. This is what leads to symptoms of *C. diff.* infection.

### Symptoms

#### What are the symptoms of *C. diff.* infection?

Typical symptoms of a mild *C. diff.* infection include:

- Frequent, watery diarrhea (3 or more times each day for several days)
- Abdominal pain or tenderness

Symptoms of a more severe *C. diff.* infection include:

- Frequent, watery diarrhea (up to 15 times each day)
- Severe abdominal pain or tenderness
- Loss of appetite
- Low-grade fever of up to 101°F in children or 100°F to 102°F in adults
- Blood or pus in the stool

#### When should I call my doctor?

Call your doctor if your symptoms begin after you started taking an antibiotic. Also call if you have symptoms that last longer than three days or get worse.

### Causes & Risk Factors

#### Who is at risk for developing a *C. diff.* infection?

If you are in good health, you will probably not get a *C. diff.* infection. The most common risk factor for *C. diff.* is the use of antibiotic medicine. Antibiotics can disrupt the normal balance in the intestines.

Risk factors for *C. diff.* infection include:

- Antibiotic use, especially a type of antibiotic that is broad-spectrum (is able to treat a wide variety of bacteria) or if you have been taking antibiotics for an extended period of time
- Surgery of the gastrointestinal (GI) tract
- Abdominal surgery that requires moving the intestines aside
- Hospitalization
- Living in a nursing home or extended-care facility
- Colon problems, such as inflammatory bowel syndrome or colorectal cancer
- Weakened immune system
- Previous *C. diff.* infection
- Being 65 years of age or older

## Diagnosis & Tests

### How is *C. diff.* diagnosed?

Tests of stool samples can determine if you have *C. diff.* Sometimes, follow-up tests are needed to confirm the diagnosis. In certain scenarios, your doctor may do an X-ray or computerized tomography (CT) scan of your colon.

You may test positive for *C. diff.* without having any symptoms. This is known as *C. diff.* colonization. Some people are carriers for *C. diff.* but do not have *C. diff.* infection. A positive test result plus symptoms indicate that you have an active *C. diff.* infection.

## Treatment

### How is *C. diff.* infection treated?

If you were taking an antibiotic when your symptoms started, your doctor will probably ask you to stop taking it. You may be watched for dehydration if you have had bouts of severe diarrhea. About 25% of patients show improvement 2 to 3 days after they stop taking the antibiotic that was causing *C. diff.* infection.

For more serious cases, your doctor may prescribe a 10-day dose of an antibiotic that has proved effective in treating *C. diff.* infection, such as metronidazole or vancomycin. You should improve after 72 hours of starting the medicine, although the diarrhea may return temporarily. In about 15% to 35% of cases, another round of antibiotics is needed.

Certain probiotics, or “good bacteria,” such as *Saccharomyces boulardii*, may be helpful against repeat *C. diff.* infection when taken along with the antibiotics your doctor prescribes. Be sure to talk to your doctor before taking any supplements.

Home care includes:

- Drinking plenty of fluids to replace fluids your body has lost due to diarrhea
- Temporarily avoiding milk products and foods that contain wheat flour (your digestive tract may be very sensitive to them for a few days) and high-fiber foods (such as fruits, corn and wheat bran)

If you have diarrhea and think it could be caused by *C. diff.*, check with your doctor before using antidiarrhea medicine. These drugs could make your infection worse.

# Complications

## What complications can *C. diff.* cause?

If the infection worsens, you may become dehydrated or be unable to pass your stool. Rarely, *C. diff.* infection can lead to sepsis (a serious infection that spreads through the blood) or a perforation (a hole) in the intestines.

# Prevention

## How can I avoid getting *C. diff.*?

Since *C. diff.* spores (inactive bits of *C. diff.*) can live a long time on surfaces (such as toilet seats, telephones and doorknobs) you should use good hygiene to avoid the bacteria.

- Wash your hands often and thoroughly, using soap and water.
- Use disposable gloves when caring for someone who may have *C. diff.*
- Use chlorine bleach-based products to disinfect surfaces or items that may have come in contact with an infected person.
- Wash clothing that may be soiled with stool with detergent and chlorine bleach.
- If you are visiting someone in a health care facility, wash your hands before, during and after your visit, especially if you use the restroom facilities.
- Don't use antibiotics unless your doctor recommends them.
- If you have *C. diff.* infection, wash your hands with soap and water before eating and after using the restroom. Use a chlorine bleach-based product to clean surfaces you may have touched (doorknobs, telephones or keyboards, for example) to avoid spreading the infection to others.

# Questions to Ask Your Doctor

- Should I stop taking my antibiotic?
- If I have diarrhea, when should I call my doctor?
- How did I get Clostridium difficile infection?
- My mother is in a nursing home, and they're currently having an epidemic of Clostridium difficile infections. Should she be tested?
- I've been diagnosed as a "Clostridium difficile carrier." What precautions should I take for my friends and family?
- I have diverticulitis. Am I at risk for Clostridium difficile infection?
- What treatment is best for me?
- If I've had Clostridium difficile infection once, am I at greater risk of getting it again?

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