

## Clostridium Difficile (*C. Diff*) Infection: Prevention and Risk Factors

### What Is *C. Diff*?

*Clostridium difficile* (pronounced klo-strid-ee-um dif-uh-seel)—commonly referred to as “*C. diff*”—is a type of bacteria (germ) that can infect the gastrointestinal tract. The gastrointestinal tract includes the stomach, the small intestine, and the colon. When *C. diff* grows out of control in the colon, it can lead to *C. diff* infection (CDI). CDI causes diarrhea and stomach pain due to inflammation (swelling) of the intestines. For more information about *C. diff* and CDI, see the Peggy Lillis Foundation’s (PLF’s) *Clostridium Difficile (C. Diff) Infection* factsheet at [www.peggyfoundation.org](http://www.peggyfoundation.org).

*C. diff* is found throughout the environment in soil, air, water, human and animal feces, and in contaminated food products, such as processed foods. *C. diff* bacteria can survive in harsh conditions for long periods of time by producing spores (rugged, seed-like structures). These spores can tolerate the acidic condition in the stomach.

CDI is a serious infection that can cause a lot of pain and suffering for patients. In some cases, it can cause serious complications and even death. Patients with CDI can also be reinfected (called *recurrent* CDI) if they are not careful. Additionally, the financial cost of treating patients with CDI is very high.

### How Can the Overuse of Antibiotics Cause CDI?

The colon has several “good” bacteria that prevent the growth of *C. diff*. However, in people taking antibiotics to treat other infections (for example, a respiratory tract infection caused by a different kind of bacteria), some of the “good” bacteria in the colon are killed. When this happens, it allows *C. diff* to multiply quickly and replace the “good” bacteria, leading to a CDI.

Viruses that cause the flu and common cold are very different from bacteria. Although antibiotics can kill bacteria, these medications are ineffective against viruses. Taking antibiotics when you have the flu or a cold will not cure a viral infection. In addition to killing “good” bacteria and allowing *C. diff* to grow and cause CDI, overuse of antibiotics can also lead to bacterial *resistance* to antibiotics (bacteria are able to withstand the effects of

antibiotics and continue to cause harm). Additionally, antibiotics can have side effects. Therefore, it is important to only use antibiotics when your doctor prescribes them to you for an infection.

### How Does CDI Spread?

CDI can quickly spread from person to person when *C. diff* spores are present on the immediate surroundings. When these spores enter the body through the mouth (for example, if a person touches a bathroom faucet that has *C. diff* spores on it and then eats something with their hands without washing them first), they travel through the stomach and into the colon. Once in the colon, the spores produce *C. diff* bacteria, leading to a CDI.

### How Can You Prevent CDI?

The following recommendations can help prevent CDI:

- Only take antibiotics as prescribed by your doctor when absolutely needed for an infection.
- Wash your hands frequently with soap and water before eating. This is very important because *C. diff* spores can live for long periods of time on objects in the environment such as door knobs, bed linens, bathroom fixtures, and toilet seats.
- Certain probiotics (live bacteria that are good for your digestive health) have been shown to be effective in the prevention of CDI. Discuss with your doctor whether probiotics may help you prevent CDI and which specific probiotics you should take.

### How Can You Prevent Getting CDI From Someone Else?

The following steps should be taken as long as a patient with CDI has diarrhea. It is also advisable to continue taking these precautions after the patient is discharged from the hospital. This is because *C. diff* bacteria may be present in the patient’s feces even after he/she no longer has diarrhea.

- If you are visiting a patient with CDI in the hospital or their home, wear a gown and gloves as soon as you enter the hospital room or other areas where the patient is staying.



# KNOW THE FACTS

- Thoroughly wash your hands with soap and water if you come into contact with someone with CDI. Hand sanitizers that contain alcohol such as Purell® are not effective and should not be used. Alcohol does not kill the *C. diff* spores, and these disinfectants may spread the spores to other parts of the skin. Even soap and water may not remove all the *C. diff* spores. Therefore, it is important to wear gloves when visiting someone with CDI.
- If possible, infected patients should stay in rooms by themselves until the diarrhea has stopped. Since *C. diff* bacteria may be present in feces, patients should also use separate bathrooms.
- The patient's surroundings should be cleaned and disinfected. All surfaces that the patient with CDI may have touched, especially bathroom surfaces, should be cleaned with chlorine bleach-based solutions or other chemicals that will kill the *C. diff* spores. Precautions should be taken when preparing and using chlorine bleach-based products and include wearing of gloves and a mask to prevent inhalation.
- Disposable medical equipment should be used as much as possible to prevent the spread of infection through infected equipment. Rectal thermometers should not be used on patients known to have CDI. Forehead temperature scanners can be used instead.
- Reusable medical equipment and items should be cleaned after each use, preferably with a chlorine bleach-based product if permitted by the manufacturer. If not, a disinfectant wipe, while it may not be as reliable, should be used if possible. It is important to follow manufacturer's instructions for handling and cleaning of all medical equipment.

It is important to recognize that while some of these steps are specific for the hospital, some of them (for example, hand washing and disinfection practices) should also be used at home after a patient with CDI is discharged from the hospital to prevent spreading the infection to others and to keep the patient from having a recurrent CDI.

## What Are the Risk Factors for CDI?

A risk factor for CDI is anything that increases your chances of getting the infection.

The chances of getting CDI for the first time or the chances of the infection returning (recurrent infection) are higher if one or more of the following apply:

- Prolonged use of antibiotics, especially exposure to certain types of antibiotics (eg, antibiotics called fluoroquinolones and cephalosporins) up to 90 days before diagnosis of CDI
- Age >65 years or <1 year and having significant health problems
- Male gender
- Admission to the hospital for more than 8 hours, especially if admitted through the hospital emergency room
- Admission to the intensive care unit
- Residence in a nursing home
- Long-term use of antibiotics for infections other than CDI even after diagnosis of CDI
- Use of acid-reducing medications (antacids) at the same time as antibiotics
- Insufficient response by the body's immune system, which recognizes and eliminates toxins (harmful substances) produced by *C. diff* bacteria
- Pregnancy (it is possible for women to get CDI during the last few months of pregnancy or during the first few months after giving birth)
- Health conditions such as cancer, kidney problems, cystic fibrosis, diabetes, blood cell abnormalities, or inflammatory bowel diseases (eg, Crohn's disease and ulcerative colitis)
- Gastrointestinal surgery
- Use of chemotherapy drugs
- Malnutrition
- Low levels of a substance in the blood called serum albumin
- Eating contaminated meat or other foods

Having one or more of these risk factors does not mean that you will get CDI, but these are important to keep in mind. For more information about how to care for yourself or others with CDI, see the PLF's *Clostridium Difficile (C. Diff) Infection: Caring for Yourself and Others* factsheet at [www.peggyfoundation.org](http://www.peggyfoundation.org).

### The Peggy Lillis Foundation

266 12th Street, #6  
Brooklyn, NY 11215  
Phone: 917.364.4658  
[www.peggyfoundation.org](http://www.peggyfoundation.org)

Follow us:

