

## Steps for Proper Hand Washing

1. Use hand washing soap and warm water
2. Lather for 20 seconds, scrubbing all surfaces of hands and wrists (especially under and around fingernails)
3. Rinse hands under running water with fingers pointing down
4. Dry hands with paper towel
5. Use paper towel to turn off water faucet

# Understanding *Clostridium difficile* Infection

A Patient's Guide

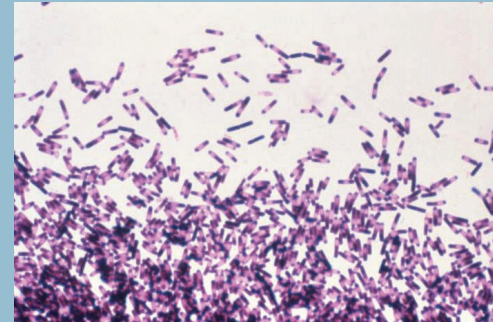


Photo courtesy of CDC/Dr. Gilda Jones

## Defining *Clostridium difficile*

### What is *Clostridium difficile*?

*Clostridium difficile*, also known as “C. diff” or “C. difficile”, is a bacterium found in the intestines. In healthy people, *C. difficile* does not cause problems because it is balanced with good bacteria. *C. difficile* infection (CDI) occurs when something, such as taking antibiotics, upsets the balance of bacteria in the intestines. Antibiotics may cause normal intestinal bacteria to die and allow *C. difficile* to grow too quickly, causing an infection.

### Symptoms of CDI

Although some patients with CDI may not become sick, many do develop symptoms such as watery diarrhea and abdominal cramping. With a more severe infection, the colon may become inflamed (colitis). People who develop more severe infections typically have more episodes of watery diarrhea (10-15 times a day), and may see blood or pus when having a bowel movement. Additionally, severe CDI may cause fever, nausea, dehydration, weight loss, and loss of appetite.

## Treatment of CDI

### Antibiotic Therapy

After a stool sample is obtained, ironically, an antibiotic is typically prescribed as standard treatment for CDI. Metronidazole taken by mouth for 10 days effectively treats most patients. The most common side effects of metronidazole are nausea and a bitter, metallic taste. People taking this drug should avoid drinking alcohol. If the infection does not respond to metronidazole, another oral antibiotic, vancomycin, may be prescribed.



Photo courtesy of NIH/DHHS

It is important to take medications for CDI exactly as prescribed and to finish the entire course of therapy, usually 10 days. For people who develop another CDI after finishing treatment, the duration of treatment may be more than 10 days.

### Other Treatments

As a general rule, anti-diarrheal medications are avoided in CDI. *C. difficile* produces a toxin that causes damage to the intestines. The best course of therapy is to not stop diarrhea, but rather let the toxin continue to pass from the body.

Probiotic agents contain organisms, such as bacteria and yeast, which help replenish “good organisms” normally found in healthy intestine. If used, probiotics are typically ordered along with antibiotic treatment for CDI.

## Preventing the Spread of CDI

### How is *C. difficile* Spread?

*C. difficile* is found in stool (bowel movement) and is very contagious. CDI spreads as a result of contact with infected people or touching environmental surfaces contaminated with *C. difficile*.

### Prevention

Frequent hand washing, particularly after using the restroom, is key in preventing the spread of CDI. According to the Centers for Disease Control, either soap and water or an alcohol-based gel may be used to clean hands; however, use of soap and water is preferred. Hand washing should include thorough cleansing of the entire surface of the hand, with particular attention to the fingertips and nails. Additionally, environmental surfaces, such as toilet seats, flush handles, and sink faucets, should be thoroughly cleaned at least daily (or when visibly soiled) with a bleach-based solution.



Photo courtesy of CDC/ K. Smith, C. Ford

In the hospital setting, people with CDI will typically be placed in a private room with “contact precautions”. Those caring for patients with CDI will wear protective gowns and gloves to prevent transmitting the infection to other patients. All health care workers should wash hands with soap and water when entering and exiting the room. Visitors should also exercise strict hand washing, and may be asked to wear protective apparel, as well.

## Risk Factors

### Antibiotic Use

Recent treatment with antibiotics places people at risk for developing CDI, particularly if the antibiotic kills a broad range of germs. Use of more than one antibiotic or taking antibiotics for an extended period of time increases the likelihood of developing CDI. Avoiding unnecessary use of antibiotics is an important step in addressing the problem of CDI.

### Health Care Facilities

Admission to a hospital increases the risk of contracting CDI, especially in the elderly. People who live in a nursing home or long term care facility are also at an increased risk of developing CDI.



Photo courtesy of NIH/DHHS

### Other Illnesses

People who have decreased immune function, either as a result of a medical condition (such as HIV) or treatment (such as chemotherapy) contract CDI at higher rates. Patients who have had surgery on the gastrointestinal system, and those with inflammatory bowel disease, such as Crohn's Disease, also are at a higher risk of developing CDI.