



Effective Health Care Program

Treating and Preventing C-diff Infections

A Review of the Research for Adults and Their
Caregivers



Agency for Healthcare Research and Quality
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Is This Information Right for Me?

Yes, if:

- You are having watery diarrhea with mild cramps three or more times a day and it has lasted for several days, especially after you have been taking an antibiotic or have been in the hospital.
- Your doctor or health care professional has told you that you are infected with a germ called *Clostridium difficile*, also called “*C. difficile*” or “C-diff.”

This summary will provide information from the most recent review of research on C-diff infections to help you understand your treatment options and ways to prevent future infections.

No, if:

- Your health care professional has told you that the diarrhea or other symptoms you have—or someone you are caring for has—are the result of an infection with a different type of germ or virus.
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Where does the information come from?

The information comes from a review of 102 studies on preventing and treating C-diff infections. Independent researchers conducted this review for the Agency for Healthcare Research and Quality (AHRQ), a Federal Government agency. You can read the entire report at www.effectivehealthcare.ahrq.gov/cdiff.cfm.

Understanding Your Condition

What is *Clostridium difficile*?

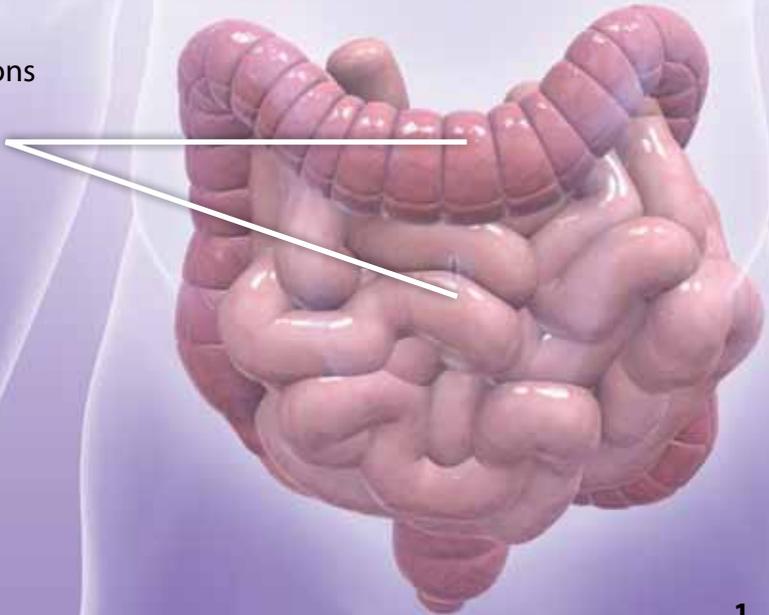
Clostridium difficile (klos-TRID-e-uhm dif-uh-SEEL) is a germ that can be found in many places, including soil, water, and air. You may hear people call it “*C. difficile*” or “C-diff.”

Certain types of C-diff germs create chemicals or “toxins.” Toxin-producing C-diff germs can make some people sick.

What causes a C-diff infection?

Your intestines have many “good” germs in them that help you digest food. A C-diff germ enters your body when you eat or swallow something that has C-diff on it. The germ moves to your intestines. A healthy person with a normal immune system and normal “good” germs may not get sick. But if your immune system is weak or these good germs have been killed by an “antibiotic” (an-tee-bye-OT-ik) you may be taking for a different kind of infection, C-diff may grow in your intestines and cause diarrhea. This is called a C-diff infection.

C-diff infections occur in your intestines, where many types of bacteria (germs) help you digest food.



What increases my risk for a C-diff infection?

You may be at a greater risk for getting a C-diff infection if:

- You have been taking an antibiotic during the past 30 days. Antibiotics can kill the “good” germs in your intestines.
- You have an immune system that is weak from a major chronic (ongoing) illness.
- You are a woman 65 or older.
- You take medicine for heartburn or to lower the acid in your stomach. These medicines include Prevacid®, Tagamet®, Prilosec®, or Nexium®.
- You have been in the hospital, especially in an intensive care unit, or you live in a nursing home.

C-diff infections occur most often in hospitals, nursing homes, and other places where there are more people who are sick or who are taking antibiotic medicines.

Can C-diff infections come back?

One out of every five people who are treated for a C-diff infection will see it return within 8 to 10 weeks after they have completely finished the medicine used to treat the infection. Researchers do not know why this happens.

Is a C-diff infection serious?

Some patients with C-diff infections can become very sick. In rare cases, a C-diff infection can lead to having your bowel removed. You could even die. It is important to know how to avoid and treat a C-diff infection, especially if you are at risk.

What are the symptoms of C-diff?

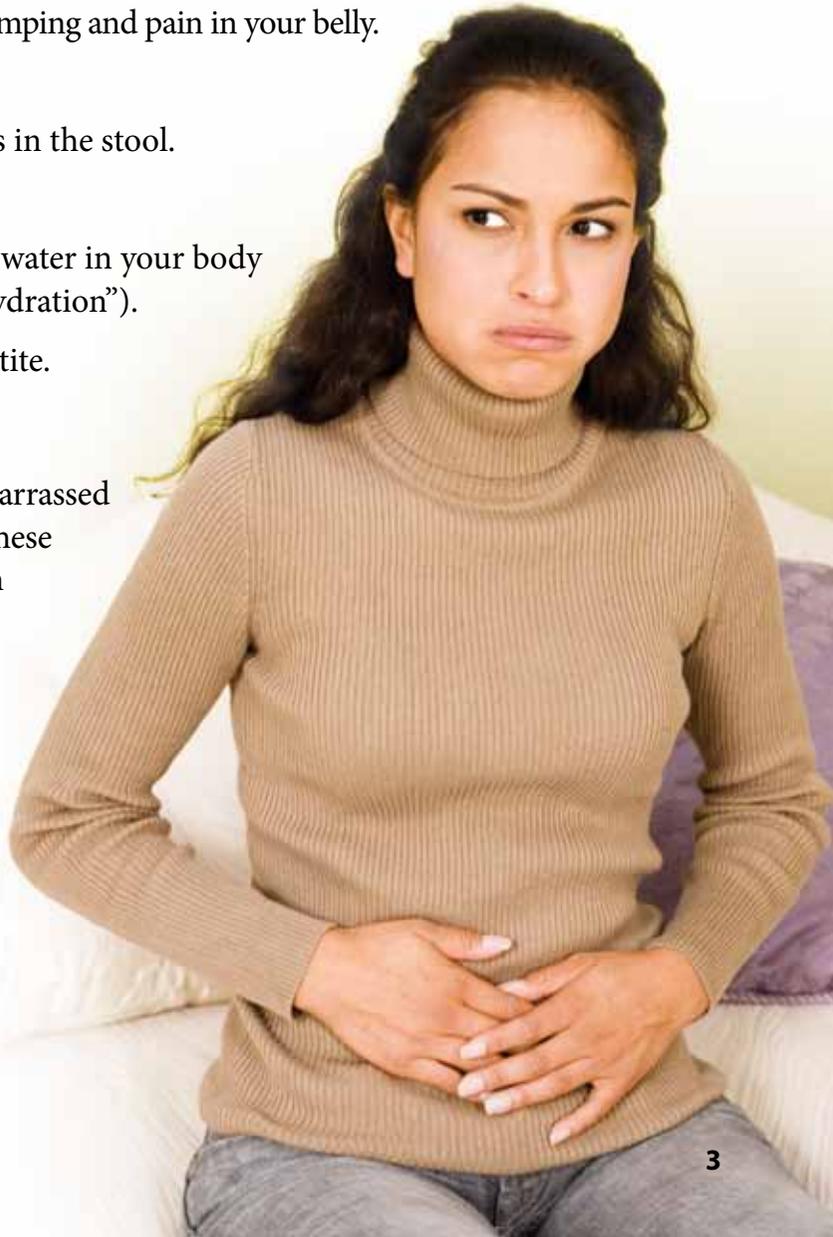
Symptoms of a mild to moderate C-diff infection are:

- Watery diarrhea 3 or more times a day for 2 days or more.
- Mild cramping and tenderness in your belly.

Severe symptoms of a severe C-diff infection include:

- Watery diarrhea many times throughout the day and night.
- Very bad cramping and pain in your belly.
- Fever.
- Blood or pus in the stool.
- Nausea.
- Not enough water in your body (called “dehydration”).
- Loss of appetite.
- Weight loss.

Do not be embarrassed talking about these symptoms with your doctor. C-diff is a serious illness that needs treatment!



Understanding Your Choices

What treatments work to treat C-diff Infections?

Antibiotics for first-time C-diff infections

C-diff is a germ, which means it can usually be killed by medicines called antibiotics. Your doctor may prescribe one of these antibiotics:

- **Fidaxomicin (fid-ex-oh-MY-sin).** The common brand name for this medicine is Dificid®.
- **Metronidazole (meh-troh-NID-uh-zole).** The common brand name of this medicine is Flagyl®.
- **Oral Vancomycin (vank-oh-MY-sin).** The common brand name for this medicine is Vancocin®.

Research found that all three antibiotics can cure your first C-diff infection about the same. However, less people had one type of C-diff infection (called the non-North American Pulsed Field type I strain, or non-NAP1) come back after taking fidaxomicin.



Always take your antibiotics as you are told by your doctor. That means taking all of the medicine you have been given to treat the infection.

What can I do if my C-diff infection comes back?

It is common for people to get a C-diff infection again—maybe several times—after the first infection. If this happens, your doctor may prescribe another round of the same or different antibiotic, or may try different doses or combinations of these medicines.

What other treatments might I hear about? Do they work?

You may read or hear about “non-standard” (not antibiotic) treatments that a doctor might use if standard antibiotic treatments do not work to keep you from getting repeat C-diff infections. These options are not used as often, and they may be used with antibiotics. Some of these options may not be covered by regular medical insurance policies or be available in your area.

Treatments that show some promise but are not yet proven:

- ***Clostridium difficile* immune whey (CDIW).**

CDIW is made from the milk of cows that are immune to (not able to get infected by) C-diff. You take this milk-like liquid like any other drink.

- **Prebiotics.**

Prebiotics are food for the good germs in your body. They can help defend your intestines against bad germs like C-diff. They occur naturally in certain foods or can be taken as supplements.

- **Toxin-neutralizing antibodies.**

Toxin-neutralizing antibodies are a type of medicine that blocks the toxins produced by C-diff germs. These medicines are given through an IV (an intravenous tube that is held in your arm with a needle).

- **Restoring healthy germs (fecal flora reconstitution).**

Doctors take normal fecal matter containing healthy germs from a close family member who is not infected and place it into the intestine of the patient.

Treatments that did not show promise:

- **Probiotics.**

Probiotics are good germs that you can eat to help you fight disease. Some research found that adding probiotics to antibiotic treatment did NOT help cure C-diff infections. Researchers found that critically ill patients with a C-diff infection who take certain probiotics may be at an increased risk for getting a life-threatening fungal infection.

How can C-diff infections be prevented?

Using antibiotics wisely

- Take an antibiotic only when you have an infection caused by bacteria. Antibiotics cannot help cure all infections. For example, antibiotics do not help the common cold and other viruses. Your doctor can help you decide if you need an antibiotic for an illness.
- When you do need an antibiotic, it is best to use one made to kill the specific type of germ infecting you (called a “narrow-spectrum” antibiotic) if it is available. Antibiotics that kill many types of germs (called “broad-spectrum”) may also kill the good germs that protect you from C-diff. Be sure to ask your doctor if the antibiotic that was prescribed to you has a high risk for C-diff infection.
- If you have an infection, your doctor may use a broad-spectrum antibiotic. Your doctor may then switch you to a narrow-spectrum antibiotic based on test results showing which germs are causing your infection.
- Always be sure to take only the antibiotics that have been prescribed for *you* and to take all of the antibiotic medicine given to you.

If you have C-diff at the hospital or nursing home

C-diff germs can remain on bed linens, bed rails, bathroom fixtures, and medical equipment.

- Doctors and nurses should wear disposable gloves and gowns when taking care of you.
- All doctors, nurses, and other staff should always follow proper hand hygiene policies put in place by the hospital or nursing home where you are staying.
- The hospital or nursing home should use cleaning products that can kill C-diff germs.

If you are visiting someone with C-diff at the hospital or nursing home

C-diff infections usually do not occur in people who are not taking antibiotics. If you are not at risk for C-diff, you are not likely to get the infection. However, you can spread the germ without knowing it.

- Only the patient with C-diff should use the bathroom in the patient's room.
- You may need to wear disposable gloves and gowns when visiting.
- Wash your hands with soap and water when entering or leaving the room.

If at home

- Wash your hands often with soap and water, especially after using the bathroom and before eating or preparing food.
- Everyone in your home should wash their hands often.





Talking to your doctor about C-diff

Here are a few questions to ask your doctor or health care professional about C-diff infections.

When you have been prescribed an antibiotic for an infection other than a C-diff infection:

- Is this a broad-spectrum or a narrow-spectrum antibiotic?
- If I am at risk for getting a C-diff infection, is there a narrow-spectrum antibiotic that I can take?

If you are experiencing a C-diff infection for the first time:

- Which antibiotic do you think will work best for my C-diff infection?
- How long will it take for my symptoms to go away?
- If my symptoms go away and come back, does this mean I have a C-diff infection again?
- Is there a treatment plan that can help make sure that the C-diff infection doesn't come back?

Other questions to ask your doctor or other health care professional:

Write your answers here:

Source

This summary was prepared by the John M. Eisenberg Center for Clinical Decisions and Communications Science at Baylor College of Medicine, Houston, TX.

It is based on a larger research report produced by the University of Minnesota Evidence-based Practice Center through funding by the Agency for Healthcare Research and Quality (AHRQ).

For a copy of the report or for more information about AHRQ and the Effective Health Care Program, go to www.effectivehealthcare.ahrq.gov/cdiff.cfm.

The information in this guide comes from the report *Effectiveness of Early Diagnosis, Prevention, and Treatment of Clostridium difficile Infection*, December 2011. Findings from this report were also published in the article, “Comparative Effectiveness of *Clostridium difficile* Treatments. A Systematic Review” in the *Annals of Internal Medicine* on December 20, 2011.

