

What is campylobacteriosis?

Campylobacteriosis is an infectious disease caused by bacteria of the genus *Campylobacter*. Most people who become ill with campylobacteriosis get diarrhea, cramping, abdominal pain and fever within 2 to 5 days after exposure to the organism. The diarrhea may be bloody and can be accompanied by nausea and vomiting. The illness typically lasts 1 week. Some persons who are infected with *Campylobacter* do not have any symptoms at all. In persons with compromised immune systems, *Campylobacter* occasionally spreads to the bloodstream and causes a serious life-threatening infection.

How common is *Campylobacter*?

Campylobacter is the most common bacterial cause of diarrheal illness in the United States. Virtually all cases occur as isolated, sporadic events, not as a part of large outbreaks. Even though surveillance is very limited, over 10,000 cases are reported to the Centers for Disease Control and Prevention (CDC) each year, equaling approximately six cases for each 100,000 persons in the population. Many more cases go undiagnosed or unreported, and campylobacteriosis is estimated to affect over 2 million persons every year, or 1% of the population. Campylobacteriosis occurs much more frequently in the summer months than in the winter. The organism is isolated from infants and young adults more frequently than from other age groups and from males more frequently than females. Although *Campylobacter* does not commonly cause death, it has been estimated that approximately 500 persons with *Campylobacter* infections may die each year.

What sort of germ is *Campylobacter*?

The *Campylobacter* organism is actually a group of spiral-shaped bacteria that can cause disease in humans and animals. Most human illness is caused by one species, called *Campylobacter jejuni*, but 1% of human *Campylobacter* cases are caused by other species. *Campylobacter jejuni* grows best at the body temperature of a bird, and seems to be well adapted to birds, which carry it without becoming ill. The bacterium is fragile. It cannot tolerate drying and can be killed by oxygen. It grows only if there is less than the atmospheric amount of oxygen present. Freezing reduces the number of *Campylobacter* bacteria present on raw meat.

How is the infection diagnosed?

Many different kinds of infections can cause diarrhea and bloody diarrhea. Doctors can look for bacterial causes of diarrhea by asking a laboratory to culture a sample of stool from an ill person. Diagnosis of *Campylobacter* requires special laboratory culture procedures, which doctors may need to specifically request.

How can campylobacteriosis be treated?

Virtually all persons infected with *Campylobacter* will recover without any specific treatment. Patients should drink plenty of fluids as long as the diarrhea lasts. In more severe cases, antibiotics such as erythromycin or a fluoroquinolone can be used, and can shorten the duration of symptoms if they are given early in the illness. Your doctor will make the decision about whether antibiotics are necessary.

Are there long-term consequences?

Most people who get campylobacteriosis recover completely within 2 to 5 days, although sometimes recovery can take up to 10 days.

Rarely, some long-term consequences can result from a *Campylobacter* infection. Some people may have arthritis following campylobacteriosis; others may develop a rare disease that affects the nerves of the body beginning several weeks after the diarrheal illness. This disease, called Guillain-Barré syndrome, occurs when a person's immune system is "triggered" to attack the body's own nerves, and can lead to paralysis that lasts several weeks and usually requires intensive care. It is estimated that approximately one in every 1000 reported campylobacteriosis cases leads to Guillain-Barré syndrome. As many as 40% of Guillain-Barré syndrome cases in this country may be triggered by campylobacteriosis.

How do people get infected with this germ?

Campylobacteriosis usually occurs in single, sporadic cases, but it can also occur in outbreaks, when a number of people become ill at one time. Most cases of campylobacteriosis are associated with handling raw poultry or eating raw or undercooked poultry meat. A very small number of *Campylobacter* organisms (fewer than 500) can cause illness in humans. Even one drop of juice from raw chicken meat can infect a person. One way to become infected is to cut poultry meat on a cutting board, and then use the unwashed cutting board or utensil to prepare vegetables or other raw or lightly cooked foods. The *Campylobacter* organisms from the raw meat can then spread to the other foods. The organism is not usually spread from person-to-person, but this can happen if the infected person is a small child or is producing a large volume of diarrhea. Larger outbreaks due to *Campylobacter* are not usually associated with raw poultry but are usually related to drinking unpasteurized milk or contaminated water. Animals can also be infected, and some people have acquired their infection from contact with the infected stool of an ill dog or cat.

How does food or water get contaminated with *Campylobacter*?

Many chicken flocks are silently infected with *Campylobacter*; that is, the chickens are infected with the organism but show no signs of illness. *Campylobacter* can be easily spread from bird to bird through a common water source or through contact with infected feces. When an infected bird is slaughtered, *Campylobacter* can be transferred from the intestines to the meat. More than half of the raw chicken in the United States market has *Campylobacter* on it. *Campylobacter* is also present in the giblets, especially the liver.

Unpasteurized milk can become contaminated if the cow has an infection with *Campylobacter* in her udder or the milk is contaminated with manure. Surface water and mountain streams can become contaminated from infected feces from cows or wild birds. This infection is common in the developing world, and travelers to foreign countries are also at risk for becoming infected with *Campylobacter*.

What can be done to prevent the infection?

There are some simple food handling practices for preventing *Campylobacter* infections. Physicians who diagnose campylobacteriosis and clinical laboratories that identify this organism should report their findings to the local health department. If many cases occur at the same time, it may mean that many people were exposed to a common contaminated food item or water source which might still be available to infect more people. When outbreaks occur, community education efforts can be directed at proper food handling techniques, especially thorough cooking of all poultry and other foods of animal origin, and common sense kitchen hygiene practices.

Some data suggest that *Campylobacter* can spread through a chicken flock in their drinking water. Providing clean, chlorinated water sources for the chickens might prevent *Campylobacter* infections in poultry flocks and thereby decrease the amount of contaminated meat reaching the market place.

Some Tips for Preventing Campylobacteriosis

- Cook all poultry products thoroughly. Make sure that the meat is cooked throughout (no longer pink), any juices run clear, and the inside is cooked to 170° F (77° C) for breast meat, and 180° F (82° C) for thigh meat.
- If you are served undercooked poultry in a restaurant, send it back for further cooking.
- Wash hands with soap before handling raw foods of animal origin.
- Wash hands with soap after handling raw foods of animal origin and before touching anything else.
- Prevent cross-contamination in the kitchen:
- Use separate cutting boards for foods of animal origin and other foods.
- Carefully clean all cutting boards, countertops and utensils with soap and hot water after preparing raw food of animal origin.
- Avoid consuming unpasteurized milk and untreated surface water.
- Make sure that persons with diarrhea, especially children, wash their hands carefully and frequently with soap to reduce the risk of spreading the infection.
- Wash hands with soap after having contact with pet feces.