



E. coli Infection

What is *E. coli* infection?

E. coli infection is a type of food-borne illness caused by bacteria called *Escherichia coli*. It affects the digestive tract and, in serious cases, the kidneys. There are many strains of *E. coli*, and most are harmless.

E. coli are also used as indicators of water and food quality, and the bacteria can tell us if there is fecal contamination in the water or food.

The strain of *E. coli* that most often makes people sick is *E. coli* O157:H7. For simplicity, we will refer to it just as *E. coli*.

What are the symptoms?

Symptoms of *E. coli* infection include:

- watery diarrhea, which in serious cases may become bloody
- vomiting
- stomach cramps
- mild fever

The symptoms can start 2 to 10 days after eating food contaminated with *E. coli*. Usually, symptoms start within 3 to 4 days and last between 5 and 10 days.

In a few cases, *E. coli* can cause a serious and sometimes fatal illness called hemolytic uremic syndrome (HUS). This can result in kidney failure, anemia and internal bleeding. HUS can be especially harmful for young children and the elderly.

Where does the disease come from?

E. coli can be found in the stomachs and manure of many healthy animals, especially cattle and sometimes goats, sheep, deer, and elk.

During the butchering process, *E. coli* sometimes gets onto the surfaces of the meat. When the meat is ground, the *E. coli* on the

surface are mixed throughout the meat. This is why ground meat is more likely to cause illness than whole cuts of meat such as steaks or roasts. Whole cuts of meat usually only have *E. coli* on the surface, which makes them easier to kill by cooking. In ground meat, *E. coli* can survive unless the interior is properly cooked. Infection often happens when people eat undercooked hamburgers.

E. coli are also sometimes found in other foods including fruits and vegetables, as well as in unpasteurized milk, juice, cider, and untreated water.

Contaminated drinking water can also cause infections, as can swimming in contaminated recreational water that drains cattle pastures.

How do I avoid getting sick?

To reduce the risk of *E. coli* infection:

- Refrigerate or freeze meat as soon as possible after buying it.
- Always thaw meat thoroughly in the refrigerator before you start to cook it. Ensure it is wrapped well and kept away from other foods. Do not try cooking frozen or partially frozen meat.
- Wash your hands thoroughly **before** preparing food, **after** handling raw meat, and **after** using the toilet. *E. coli* can also be spread to others through infected feces.
- Always wash and then sanitize all utensils, cutting boards and counters that have touched raw meat to prevent *E. coli* from contaminating other foods. Make an effective sanitizing solution by mixing 5 ml (1 teaspoon) of bleach in a litre of water.
- Properly cook the outside of all whole cuts of meats such as steaks, roasts or chops by searing or cooking them quickly with high heat.
- Cook ground beef, such as hamburger patties, meat loaf and rolled roasts (beef roulade),

until the middle reaches a temperature of 71°C (160°F) or hotter and remains there for at least 15 seconds. Measure the internal temperature of the meat with a good probe thermometer.

- **Never** put cooked meat back on the same unwashed surface that held the raw meat. The juices from the raw meat can be contaminated with *E. coli*, which can then contaminate the cooked meat.
- Do not use marinade as a sauce on cooked meat.
- Serve cooked meats right away or keep them hot. They should be at least 60°C (140°F) or hotter, until you are ready to serve them.
- Wash any fruits and vegetables with cold running water before eating them raw. Use a scrub brush on fruits and vegetables with rough skin, such as a cantaloupe, even if they will be peeled or cut.
- Avoid drinking unpasteurized milk, juice and cider.
- Do not drink untreated surface water from a spring, stream, river, lake, pond or shallow well. Assume it is contaminated with animal feces.
- Avoid swimming in water that may drain pastureland.

In B.C., water is routinely tested for *E. coli* contamination.

Is there a treatment for the disease?

Anyone who has diarrhea for more than a few days and/or bloody diarrhea should see a doctor.

Drinking lots of clear fluids is important to replace lost fluids and prevent dehydration. **Do not** take anti-diarrhea medicine unless you first talk to your doctor.

Serious cases may require hospitalization, blood transfusion, and dialysis.

For more information about food safety, see the following HealthLink BC Files:

[#03 Pasteurized and Raw Milk](#)

[#22 Home Canning: How to Avoid Botulism](#)

[#59a Food Safety: Ten Easy Steps to Make Food Safe](#)

[#59b Food Safety for Fresh Fruits and Vegetables](#)

[#59c Food Safety: Instructions on Food Labels](#)

[#72 Unpasteurized Fruit Juices: A Potential Health Risk](#)

[#76 Foods to Avoid for People at Risk of Food-borne Illness](#)



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