



What is *E. coli*?

Simply put, *E. coli* is a bacterium. *E. coli* is the abbreviated name of the bacterium named *Escherichia coli*.

Where do you find *E. coli*?

E. coli bacteria are everywhere in the environment. *E. coli* and other kinds of bacteria are found in our intestines and are necessary for us to digest food and remain healthy. *E. coli*, along with other species of bacteria in our intestine, provide many necessary vitamins including Vitamin K and B-complex vitamins. We have billions of *E. coli* bacteria in our bodies, making things we need, helping digest our food and maintaining our health. Because these bacteria can be found in human and animal intestines, you can find these bacteria in the waste (feces) we produce. Sanitarians and those who test water look for these bacteria to alert people to the possible dangers and suggest proper treatments to remove the *E. coli* bacteria from the water.

Can *E. coli* harm your health?

Although most *E. coli* are harmless and are a needed bacterium for health, there are some strains of *E. coli* bacteria that can be very harmful to our health. A **rare** strain of *E. coli* that you may have seen in the news can cause potentially dangerous outbreaks and illness. This strain is *E. coli* O157:H7. This *E. coli* can produce a toxin called Shiga-like toxin (SLT).



How do you come in contact with *E. coli*?

By ingesting (eating and drinking) *E. coli* bacteria-contaminated items. Again, *E. coli* bacteria are everywhere in the environment. Because they are found in virtually all animals, any time we eat something, drink something or put our hands on something that has been near where persons or animals are, there is always the potential we might ingest these bacteria. The harmful *E. coli* bacteria have been found in unpasteurized apple juice and milk, meat (especially ground beef), sprouts, lettuce, salami and in sewage-contaminated water.

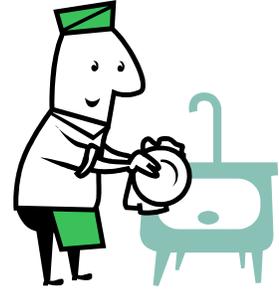
What are some of the health effects of harmful *E. coli*?

The harmful strain of *E. coli* bacteria can cause abdominal cramping, diarrhea* and occasionally vomiting. Usually little or no fever is present. Dehydration, even in mild cases of diarrhea, can easily occur. Normally the illness resolves in 5 to 10 days. In 5%-10% of cases, hemolytic uremic syndrome (HUS), which is characterized by kidney failure and loss of red blood cells, can occur. In severe cases of the disease, 2%-7% may have permanent kidney damage. Dehydration is particularly dangerous to small children who are too small to tolerate much blood and fluid loss. The presence of these bacteria can also be very dangerous to the elderly population or persons who are already ill.

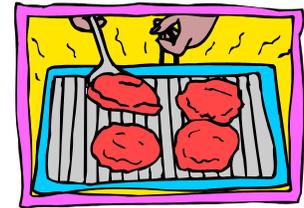
* Sometimes persons may have bloody diarrhea.

How to avoid *E. coli* contamination:

- ❖ Always wash hands, counters and utensils with hot, soapy water after they touch raw meat.
- ❖ Never use the same plate, tray or utensils for the cooked meat that you use for the raw meat, unless you thoroughly wash the plate, tray or utensils in between uses.
- ❖ Do not place ready-to-eat foods near raw meat.



- ❖ Always cook meat, especially ground meat, until the juices run absolutely clear (pink is not cooked enough).
- ❖ Cook a hamburger to the temperature of 160° F. Measure the internal temperature at its thickest section of the patty.
- ❖ Wash fruits and vegetables thoroughly, especially those that will not be cooked.
- ❖ Drink only pasteurized milk, juice or cider.
- ❖ Drink municipal water that has been treated with chlorine or other effective disinfectants.
- ❖ Use proper water well construction.
- ❖ Use disinfection and filtration water treatment systems on other private water sources (cisterns, springs and ponds) to remove harmful bacteria.
- ❖ Avoid swallowing lake or pool water while swimming.
- ❖ Persons with diarrhea, especially children and their caregivers, should wash their hands carefully with soap after bowel movements to reduce the risk of spreading infection. Anyone with a diarrheal illness should avoid swimming in public pools or lakes, sharing baths with others and preparing food for others.



References:

Centers for Disease Control and Prevention, National Center for Infectious Diseases, Division of Bacterial and Mycotic Diseases. January 27, 2004.

U.S. Food & Drug Administration, Center for Food Safety & Applied Nutrition, Foodborne Pathogenic Microorganisms and Natural Toxins Handbook, "Bad Bug Book," Escherichia coli O157:H7.

University of Kansas, Department of Molecular Biosciences, What the Heck is an E. coli? John (Jack) C. Brown Ph.D., 2001. (electronic: <http://people.ku.edu/~jbrown/ecoli.html>)



The Ohio Department of Health is in cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR), Public Health Service, U.S. Department of Health and Human Services.

This document was created by the Ohio Department of Health, Bureau of Environmental Health, Health Assessment Section and supported in whole by funds from the Comprehensive Environmental Response, Compensation and Liability Act trust fund.

