



FOOD SAFETY UPDATE

Escherichia Coli O157:H7

Escherichia coli O157:H7 (E. coli O157:H7) is a leading cause of foodborne illness.

In September of this year, 199 persons from 26 states were infected from eating contaminated raw bagged spinach. On December 12, 2006, an E. coli outbreak

was linked to Taco Bell restaurants in Northeastern United States.

Though the incidence of E. Coli is on the decline, we seem to be hearing more about it in the media.

This newsletter will answer frequently asked questions about Escherichia coli O157:H7.



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Source:
Center for Disease Control
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<http://www.cdc.gov/>

What is Escherichia coli O157:H7?

E. coli O157:H7 is one of hundreds of strains of the bacterium Escherichia coli. Although most strains are harmless, this strain produces a powerful toxin that can cause severe illness. E. coli O157:H7 has been found in the intestines of healthy cattle, deer, goats, and sheep.

E. coli O157:H7 was first recognized as a cause of illness in 1982 during an outbreak of severe

bloody diarrhea; the outbreak was traced to contaminated hamburgers. Since then, more infections in the United States have been caused by eating undercooked ground beef than by any other food.

The combination of letters and numbers in the name of the bacterium refers to the specific markers found on its surface and distinguishes it from other types of E. coli.

How is E. coli O157:H7 Spread?

E. coli O157:H7 lives in the intestinal tracts of game, livestock and poultry. These meats can become contaminated during slaughter or when beef is ground.

Eating meat, especially ground beef, that has not been cooked sufficiently to kill E. coli O157:H7 can cause infection.

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How is *E. coli* Spread? *(continued from Page 1)*

Contaminated meat looks and smells normal. The number of organisms required to cause disease is very small.

Produce, such as sprouts, lettuce, and spinach, can also become infected with *E. coli* O157:H7 through cross contamination. Vegetables grown close to the ground, just downstream or down the hill from a feedlot or cow pasture might come in contact with feces of infected animals or with water contaminated with feces of infected animals.

Fruit juice made from fruit that has fallen from

the tree can be contaminated. Bacteria present on the cow's udders or on equipment may get into raw milk. For these reasons, always drink pasteurized milk and juice as this process kills *E. coli* O157:H7.

One can also become infected by swimming in or drinking sewage-contaminated water. Bacteria of infected persons can be passed from one person to another if hygiene or hand washing habits are inadequate. This is particularly likely among toddlers who are not toilet trained.

**Cook ground
beef to
160°F.**

What Illness Does *E. coli* O157:H7 Cause?



People generally become ill from *E. coli* O157:H7 two to eight days (average of 3-4) after being exposed to the bacteria. The infection often causes severe bloody diarrhea and abdominal cramps. Sometimes the infection causes non-bloody diarrhea or no symptoms. Usually little or no fever is present, and the illness resolves in 5 to 10 days.

In some persons, particularly children under five

years of age and the elderly, the infection can also cause a complication called Hemolytic Uremic Syndrome (HUS), in which the red blood cells are destroyed and the kidneys fail. About 8% of persons whose diarrheal illness is severe enough that they seek medical care develop this complication. In the United States, HUS is the principal cause of acute kidney failure in children, and most cases of HUS are caused by *E. coli* O157:H7.

How is *E. coli* O157:H7 Infection Diagnosed and Treated?

E. coli O157:H7 infection is diagnosed by detecting the bacterium in the stool. All persons who suddenly have diarrhea with blood should get their stool tested for *E. coli* O157:H7.

Most people recover without antibiotics or other treatment within 5 to 10 days. Antibiotics should not be used to treat this infection. There is no evidence that antibiotics improve the course of disease, and it is thought that treatment with some

antibiotics could lead to kidney complications. Anti-diarrheal agents should be avoided.

An infected person who develops Hemolytic Uremic Syndrome (HUS) is usually treated in an intensive care unit. Blood transfusions and kidney dialysis are often required. With intensive care, the death rate for Hemolytic Uremic Syndrome is 3%-5%.



What Can You Do to Prevent E. coli O157:H7 Infection?

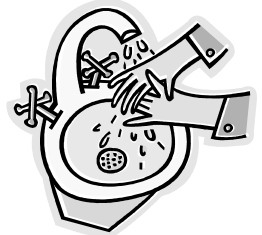
- **Cook all ground beef and hamburger thoroughly.** Because ground beef can turn brown before disease-causing bacteria are killed, use a digital instant-read meat thermometer to ensure thorough cooking. Ground beef should be cooked until a thermometer inserted into several parts of the patty, including the thickest part, reads at least 160°F.



- **If you are served an undercooked hamburger or other ground beef product in a restaurant, send it back for further cooking.** Ask for a new bun and a clean plate, too.
- **Avoid spreading harmful bacteria in your kitchen.** Keep all raw meats separate from ready-to-eat foods. Wash hands, counters and utensils with hot soapy water after they touch raw meat. Never place cooked beef, chicken, fish, pork, etc. on the unwashed plate that previously held raw meats. Wash meat thermometers in between tests of meats that require further cooking.
- **Drink only pasteurized milk, juice or cider.** Commercial juice with an extended shelf-life that is sold at room temperature (e.g., juice in cardboard boxes, vacuum sealed juice in glass containers) has been pasteurized, although not generally indicated on the label. Pasteurization kills E. coli 157:H7.
- **Wash fruits and vegetables under running water, especially those that will not be cooked.** Be aware that bacteria are sticky, so

even thorough washing may not remove all contamination. Remove that outer leaves of leafy vegetables. Children under five years of age, immunocompromised persons, and the elderly should avoid eating alfalfa sprouts until their safety can be assured. Persons at high risk of complications from foodborne illness may choose to consume cooked vegetables and peeled fruits.

- **Drink municipal water that has been treated with chlorine or another effective disinfectant.**
- **Avoid swallowing lake or pool water while swimming.**
- **Make sure that persons with diarrhea, especially children, wash their hands carefully with soap after bowel movements to reduce the risk of spreading infection, and that persons wash hands after changing soiled diapers.** Anyone with a diarrheal illness should avoid swimming in public pools or lakes, sharing baths with others, and preparing food for others.



For more information about reducing your risk of foodborne illness, visit the U.S. Department of Agriculture's Food Safety website at <http://foodsafety.nal.usda.gov>.