

Common Foodborne Pathogens: *E. coli* O157:H7



What is *E. coli* O157:H7?

Escherichia coli is a common bacterium found in the human intestinal tract and vital to the proper functioning of our digestive system. While most strains of *E. coli* are beneficial to humans, a few are pathogenic. The most infamous example is *E. coli* O157:H7.

While this bacterium is too small to be seen without the aid of a microscope, *E. coli* O157:H7 is capable of causing serious damage to our digestive tract. First discovered as a foodborne pathogen in 1982, numerous *E. coli* O157:H7 foodborne outbreaks have been documented.

Symptoms of *E. coli* O157:H7 Infection

The most common symptoms of *E. coli* O157:H7 infection includes bloody diarrhea, stomach cramps, and vomiting. Symptoms typically appear within 3 to 4 days and illness can last one to two weeks unless complications occur. Severe cases of infection can also result in Hemolytic Uremic Syndrome (HUS) a type of kidney damage most likely seen in children.

Who gets *E. coli* O157:H7 Infection?

Foodborne infections from *E. coli* O157:H7 are obtained through eating contaminated food or water as well as coming in contact with animals in locations such as petting zoos. While children and the elderly are more likely to develop serious complications, any age can become infected.

Proper Food Handling Techniques to Avoid Infection

Do not eat undercooked ground beef products. Using a meat thermometer, make sure meat reaches the correct internal temperature; just because it looks done, doesn't mean it is! Drink only pasteurized milk, juice or cider. Rinse fruits and vegetables thoroughly with tap water, especially those that will not be cooked. Make sure infected people, especially children, wash their hands carefully with soap after using the toilet and petting animals to reduce the risk of spreading the disease.

Recent *E. coli* O157:H7 Outbreaks in the U.S.

September 2006: an outbreak of *E. coli* O157:H7 occurred from infected, bagged spinach grown in San Benito Valley, California. The CDC traced the bacterium to contaminated (from animal feces) water used in irrigation. Over two hundred people were infected with three resulting deaths and thirty-one individuals developed HUS. The outbreak spread across twenty-six states.

September 2007: an outbreak of *E. coli* O157:H7 occurred from Topps brand frozen ground beef patties. Thirty-seven cases spanned eight states. Of those cases, twenty-one were hospitalized with two developing HUS.

Commonly Associated Foods

- Ground Beef
- Fermented Meat
- Lettuce and other leafy greens
- Unpasteurized Milk
- Unpasteurized Apple Cider
- Alfalfa sprouts



Safe Food Handling Checklist

- Wash hands often
- Wash counter and utensils
- Keep foods separated
- Rinse fruits and vegetables
- Cook foods thoroughly
 - Ground Beef = 160°F
 - Steak:
 - Rare = 145°F
 - Medium = 160°F
 - Well Done = 170°F
- Refrigerate ingredients and leftovers immediately after use



For More Information Contact:
Renee R. Boyer, Ph.D.
Extension Specialist
rboyer@vt.edu