

E. coli O157:H7 on the Farm

What is *E. coli* O157:H7?

Escherichia coli O157:H7 (*E. coli* O157:H7) is one of hundreds of types of the bacterium *E. coli*. Most types of *E. coli* are harmless and naturally live in the intestines of healthy humans and animals. However, *E. coli* O157:H7 produces a powerful toxin that can cause severe illness in humans.

What are the symptoms? How long does it last?

Symptoms of an *E. coli* O157:H7 infection include diarrhea and severe stomach cramps. Diarrhea usually starts out watery and then after 1 to 3 days turns bloody. People usually get sick 2 to 5 days after ingesting the bacteria. Their illness usually last for 5 to 10 days. Sometimes people infected with *E. coli* O157:H7 have no symptoms at all, but can still pass the bacteria to others.

Around 5% of *E. coli* O157:H7 infections lead to a severe complication called hemolytic uremic syndrome (HUS). HUS can stop a person's kidneys from working properly and can destroy the person's red blood cells. This can lead to the need for blood transfusions. About 5% of HUS cases are fatal. Even in non-fatal cases, the average hospital stay is 11 days, and health problems can continue for life.

If a person develops HUS, on average it will occur within 1 week after their diarrhea started. Clues that a person is developing HUS include fatigue and decreased frequency of urination.

HUS most commonly affects young children and adults over 60 years of age, but may affect any age group.

What treatment is available for an *E. coli* O157:H7 infection?

People with mild symptoms usually recover on their own without treatment. Antibiotics are not helpful for treating *E. coli* O157:H7 diarrhea and may even increase the likelihood of developing HUS. Antidiarrheal agents should not be used either.

How is *E. coli* O157:H7 spread?

E. coli O157 naturally lives in the intestines of healthy ruminant animals including cattle, goats, sheep, and deer with cattle being the major source. It can be found in water, food, soil, or surfaces that have been contaminated with the feces of infected humans or animals.

People become infected with *E. coli* O157:H7 by swallowing the bacteria. This can happen in several ways:

- Contact with farm animals, especially cattle.
- Drinking raw milk.
- Eating raw or undercooked meat.
- Drinking untreated water from lakes, rivers, streams, ponds, or shallow wells.

What should I do if I have symptoms?

- Contact your health care provider.
- Wash your hands often. Use soap and running water and wash for 20 seconds.
- Do not prepare food for others while you are ill.

Where is *E. coli* O157:H7 found on the farm?

Cattle are the most common farm animals to have *E. coli* O157:H7. Since cattle and other ruminants naturally have *E. coli* O157:H7 in their intestines without it making them ill, you would not be able to tell if an animal had *E. coli* O157:H7 by looking at it.

The bacteria can be found anywhere that fecal contamination occurs, such as animal bedding, food and water containers, and on gates and pens.

How can *E. coli* O157:H7 be prevented in livestock and the farm environment?

E. coli O157:H7 can be found on nearly all cattle farms. Because *E. coli* O157:H7 is very common in farm animals and they don't show signs of illness, it is not practical to identify and remove infected animals. If an animal does have diarrhea, it is important to isolate the animal so it can't spread any germs it might have to other animals or the environment.

- Good hygiene and sanitation practices can lower the levels of *E. coli* O157:H7 found on the farm.
- Design feeders and waterers to keep manure out.
- Work with a veterinarian to diagnose and treat sick animals.

How can I prevent the spread of *E. coli* O157:H7 and other germs from animals to humans?

- **Wash your hands** with soap and running water for 20 seconds before eating or drinking, especially after working on the farm or handling materials that might be contaminated with manure.
- If no running water and soap is available, hand sanitizer may be used until you are able to wash your hands with soap and running water.
- Avoid eating or drinking in barns or other areas where animals are housed.
- Wear dedicated clothing or coveralls and shoes when out in the barn. Remove barn clothing and shoes prior to entering the main part of the house to keep manure out of the house.
- Inform visitors to the farm of the importance of hand washing for preventing infections with *E. coli* and other germs.
- People with weakened immune systems (children < 5 years, people > 65 years, pregnant woman, and people with certain

medical conditions) should avoid the barn and other animal areas if possible. People with weakened immune systems may stay sick for longer and have a harder time getting rid of the infection than those with a healthy immune system.

- Keep house pets out of the barn to keep them from becoming infected or tracking manure into the house.
- Provide play areas for children that are away from areas of the farm that may be heavily contaminated with manure.
- Do not drink raw milk.
- If the farm has well water, it is a good idea to test the water once a year for total coliform bacteria. These bacteria do not cause any illness but their presence indicates that contamination has found its way into the well and disease organisms may also be present.

How can I prevent the spread of *E. coli* O157:H7 and other germs in my home?

- Cook all ground beef thoroughly.
- Prevent cross-contamination in the kitchen by washing hands, cutting boards, countertops, knives, utensils, and other surfaces after handling raw beef. For example, when grilling burgers, do not place cooked burgers back on the same plate the raw burgers were on.
- Wash your hands with warm, soapy water for at least 20 seconds
 - ✓ After using the bathroom
 - ✓ After changing diapers
 - ✓ After touching animals
 - ✓ Before eating
- Wash your hands more often when you or someone in your house is sick.

For more information, please visit the Minnesota Department of Health website at www.health.state.mn.us or contact Carrie Klumb at 651-201-5414. For more information about the Upper Midwest Agricultural Safety and Health (UMASH) Center, please visit the website at www.umash.umn.edu