

Enterohemorrhagic *E. coli* (STEC/EHEC)

What is *STEC/EHEC* infection?

E. coli is a bacteria that normally lives in the intestines of humans and animals. There are many strains of *E. coli* such as O121, O11, O26 and the most common strain O157:H7.

These strains of *E. coli* are known to produce a toxin that can cause serious illness.

Who gets *STEC/EHEC* infection?

All age groups can be infected with *STEC/EHEC*, but young children, the elderly, and those with compromised immune systems are the most severely affected.

How does one get infected with *STEC/EHEC*?

The infection is acquired by eating food containing the bacteria. The bacteria live in the intestine of some healthy cattle, and contamination of the meat may occur in the slaughtering process. Eating meat, especially ground beef that is rare or not fully cooked is the most common way of getting the infection.

Other possible sources of infection include unpasteurized milk, drinking or swimming in water that is contaminated with sewage, or eating unwashed fruits or vegetables that have been fertilized with cow manure.

Person-to-person transmission can occur if infected persons do not wash their hands after using the toilet or after changing diapers.

What are the symptoms of *STEC/EHEC* infection?

People infected by *STEC/EHEC* strains such as O157:H7 can develop a range of symptoms. Some infected people may have mild diarrhea or no symptoms at all. Most cases develop severe diarrhea and abdominal cramps. Blood is often seen in the stool. Usually little or no fever is present.

How soon after the exposure do symptoms appear?

The symptoms usually appear about three days after exposure, with a range of one to nine days.

What is the treatment for infection with *STEC/EHEC*?

Most persons recover without antibiotics or other specific treatment in five to ten days. The usefulness of antibiotic treatment is unproven, and anti-diarrheal medication should be avoided. As with all types of diarrhea, it is important to avoid dehydration by drinking plenty of fluids, and keep your doctor informed of your symptoms.

What complications can result from infection with *STEC/EHEC*?

In some persons, particularly children under five years of age, the infection can cause a complication called hemolytic uremic syndrome (HUS). This is a serious disease in which red blood cells are destroyed and the kidneys fail. Transfusions of blood or blood clotting factors as well as kidney dialysis may be needed. A prolonged hospital stay is often required. Fortunately, most people with HUS recover completely, but it can be fatal in about 3-5% of the cases.

How long can a person spread *STEC/EHEC*?

The illness usually lasts 5 to 10 days (about two weeks in cases of HUS) and most people are not infectious about a week after diarrhea stops. However, in young children the organism can persist in the stool for weeks.

How can infection with *STEC/EHEC* be prevented?

1. Do not eat hamburger or other ground beef products that have not been fully cooked. Cook all ground beef and hamburger thoroughly. Make sure the cooked meat is brown throughout (not pink), and the juices run clear.
2. Drink only pasteurized milk and milk products.
3. All fruits and vegetables should be washed thoroughly before serving.
4. Make sure infected persons, especially children, wash their hands carefully with soap after using the toilet.
5. Water which is possibly infected (when pipes leak or are undergoing repairs, for example) should be treated with adequate levels of chlorine or other effective disinfectants or boiled to guard against chance contamination.

Information of food handling for the prevention of *STEC/EHEC*

General Handling:

1. Ground beef should be frozen or refrigerated at 45°F or less as soon as possible after it is purchased and kept refrigerated until it is used.
2. Ground beef should be packaged and stored so that its juices (blood) do not drip onto other foods.
3. Wash hands thoroughly with soap and warm water before and after handling raw meat.
4. Never reuse packaging materials.
5. Be careful not to recontaminate meat by placing cooked meat on the same platter or surface that held the raw meat, or by using utensils which have been contaminated by raw meat.
6. Utensils, dishes and surfaces which come in contact with raw meat should be washed with soap and water before they are used again.

Storing:

1. Ground beef should be stored at 45°F or below.
2. Ground beef may be stored frozen for up to four months and in the refrigerator for 1-2 days.

Cooking:

1. Cook ground beef until it is completely cooked throughout (no pink in the middle) and the juices run clear. Ground beef should be cooked to 155°F or above. Do not cook ground beef in a microwave oven because cooking may be uneven.
2. Any cooked hamburger left at room temperature for more than 2 hours should be discarded.
3. After cooking, ground beef can be stored in the refrigerator for 3-4 days or frozen for up to 3 months.

Reheating:

1. Reheat fully cooked ground beef and hamburger patties to 165°F or above.

Where can I get more information?

- Your personal doctor
- Your local health department, listed in your telephone directory
- The Utah Department of Health, Bureau of Epidemiology (801) 538-6191.