

About...*E. coli*

What is *E. coli*?

Escherichia coli (esh-uh-rik-ee-uh koh-lie) is a bacterium that lives in the gut (intestines) of most warm-blooded animals, including humans. There are hundreds of strains of *E. coli*, and most are harmless. However, several types of *E. coli*, such as O157, and other shiga-toxin producing strains, live in the gut of healthy animals but can cause severe illness in humans. On average, there are 90 cases of *E. coli* reported in Indiana every year.

How is *E. coli* spread?

People can be infected with *E. coli* by eating contaminated foods, such as:

- Undercooked beef products, particularly ground beef
- Drinking unpasteurized milk and fruit juices, including apple cider
- Unwashed raw fruits, vegetables, or herbs that have been contaminated by feces, raw meats, fertilizers, or untreated water
- Swallowing untreated water, e.g., from lakes or streams
- Having direct contact with the stool of infected cattle, livestock, and animals at petting zoos
- Having contact with an infected person's stool (person-to-person transmission)
 - An infected person can pass the bacteria in their stool for up to 3 weeks after their symptoms have stopped. This can happen by failing to wash hands after contact with stool from a contaminated surface or diaper/linen and ingesting the bacteria. Facilities where there are clients/patients who are not toilet trained, such as child-care centers, have an increased risk of transmission. Family members and playmates of these children are also at risk of infection.

The most common sources of *E. coli* outbreaks are inadequately cooked hamburgers, produce (such as melons, lettuce, spinach, coleslaw, apple cider, and alfalfa sprouts), and unpasteurized dairy milk.

What are the symptoms of *E. coli* infection?

- Bloody or non-bloody diarrhea
- Abdominal cramps
- Little or no fever

Symptoms usually begin 3-4 days (range of 2-10 days) after exposure and last for approximately 5-10 days. Some people may only have mild diarrhea without blood or no symptoms at all.

Approximately 8 percent of people infected with *E. coli* (O157 and other shiga-toxin producing strains) can develop a condition called hemolytic uremic syndrome (HUS). This condition is very serious and can lead to kidney failure and death. Children under 5 years of age and the elderly are more likely to develop this condition.

How do I know if I have *E. coli* infection?

A person having diarrhea lasting longer than 24 hours or having bloody stool should immediately consult a health care provider. The health care provider may collect a stool, urine, or blood sample to test for *E. coli*.

How is *E. coli* infection treated?

Most people recover without medical treatment. The use of antibiotics or over-the-counter antidiarrheal agents is not recommended; the use of these can lead to greater likelihood of developing HUS. Serious infections that affect the kidneys will require hospitalization and extensive medical care.

Is *E. coli* infection a reportable disease?

Yes. Health care providers or laboratories must immediately report cases of *E. coli* infection to the local health department (LHD) or the Indiana State Department of Health (ISDH). The LHD will contact all cases diagnosed with diarrhea-producing *E. coli* infection to determine a possible exposure to help prevent others from becoming ill.

How can *E. coli* infection be prevented?

In general, *E. coli* infection can be prevented by strictly adhering to the following guidelines:

- Practice thorough, frequent hand washing.
 - Thoroughly wash hands with soap and water:
 - after using the restroom
 - after assisting someone who has diarrhea and/or vomiting
 - after contact with animals and reptiles
 - after swimming
 - before, during, and after food preparation
 - after exposure to raw meat products (please refer to [Quick Facts about Hand Washing](#))
- Separate raw and cooked foods.
 - Avoid cross-contamination by keeping uncooked meat products separate from produce, ready-to-eat foods, and cooked foods.
 - Use separate equipment and utensils for handling raw foods, especially for marinades or barbeque sauce.
 - Clean food-preparation work surfaces and utensils with soap and water before, during, and after food preparation, especially after contact with raw meat products.
- Maintain safe food temperatures.
 - Ensure proper temperatures are maintained during refrigeration (<40°F), freezing (<2°F), holding (keep food hot or at room temperature for no longer than 2 hours), and chilling (chill immediately and separate into smaller containers if needed).
 - Thoroughly cook all food items to United States Department of Agriculture (USDA) recommended safe minimum internal temperatures.
 - 145°F – steaks and roasts
 - 160°F – pork and ground beef (should not be eaten pink)
- Eat safe foods – **Remember: Contaminated foods may look and smell normal.**
 - Do not eat undercooked meat.
 - Do not eat foods past the expiration date.
 - Do not eat unpasteurized dairy products and fruit juices, including apple cider; it is illegal to sell unpasteurized dairy products in Indiana.
 - Wash all produce before eating raw or cooking.
 - Use treated water for washing, cooking, and drinking.
- Handle animals safely.
 - Wash hands after contact with farm animals or petting zoos and contact with pets, especially if they are suffering from diarrhea.
- Protect others.
 - Persons with diarrhea and/or vomiting should not prepare food or provide health care for others and should limit direct contact with others as much as possible.
 - Persons with diarrhea and/or vomiting should not attend a child-care facility or school.
 - Persons with diarrhea and/or vomiting shall be excluded from employment involving food handling (Indiana Retail Food Establishment Sanitation Requirements, 410 IAC 7-24-122).

Where can I learn more about E. coli?

To search Indiana data and statistics:

www.in.gov/isdh/dataandstats/disease/diseases_index.htm

To search the Indiana Food Protection Program:

<http://www.in.gov/isdh/regsvcs/foodprot/index.htm>

To search disease information:

http://www.cdc.gov/ncidod/dbmd/diseaseinfo/escherichiacoli_g.htm

<http://www.cfsan.fda.gov/~mow/chap15.html>

To search for national data, statistics, and outbreaks:

www.cdc.gov/mmwr/

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