

What is E. coli? ^[1]

Dear Alice,

What is E. coli?

Answer

Dear Reader,

What do unwashed greens, raw meat, and stagnant well-water have in common? All right, enough racking your brain — the answer is: they're all potential carriers of *Escherichia coli* (more commonly known as *E. coli*), a bacterium infamous for causing illness and, sometimes, even death. While there are hundreds of harmless strains of *E. coli* found in nature, the one most commonly responsible for illness in the United States is *E. coli* O157:H7. The Centers for Disease Control and Prevention (CDC) ^[2] report about 95,400 cases of *E. coli* O157:H7 in the US every year. You may have heard about *E. coli* O157:H7 through the media at some point — but keep in mind that, according to the CDC, only about 20 percent of reported cases are part of an outbreak. Now that you know what it is, you may be wondering how the *E. coli* infection spreads. Transmission commonly occurs through:

- Undercooked or raw beef
- Unwashed sprouts and other produce
- Un-pasteurized milk, apple juice, and apple cider
- Contaminated water (from wells, rivers, lakes, or under-chlorinated swimming pools)
- Direct contact with an infected person or contaminated feces

What happens after someone is exposed? *E. coli* O157:H7 produces a poison, called Shiga toxin, which can damage the lining of the intestines and kidneys. Typically, symptoms start off as mild abdominal pain and non-bloody diarrhea about three to four days after exposure (though it can be as little as one or as many as ten days). Symptoms tend to worsen over time and can include bloody diarrhea, nausea, vomiting, severe abdominal cramping, and fever. If someone is experiencing symptoms, they'll probably need to rest and stay close to the bathroom until the misery, well... passes. In children or people with weakened immune systems, more serious health issues may occur, such as kidney failure. The good news is that most folks recover in about five to seven days without visiting a health care provider. However, if diarrhea persists for

more than three days, following up with a medical professional is advised. Since the symptoms of *E. coli* are similar to other gastrointestinal ailments, a stool sample can be tested to determine if *E. coli* may be a root cause for a given set of symptoms.

You may also be wondering: what's the best way to treat *E. coli*? For most, the standard recommendation is to rest and drink plenty of water to avoid dehydration — similar to what you would do for a bout of food poisoning. Yep, that's it! Anti-diarrheal medicines generally aren't recommended, as the body needs to expel the harmful bacteria, unpleasant as this may be. Additionally, antibiotics don't actually help *E. coli* O157:H7. In fact, overuse of antibiotics has led to increased antibiotic resistance in the most harmful strains of bacteria. A recent strain of *E. coli* has been found in the US that is resistant to the antibiotic colistin, which is the heaviest artillery currently available against bacteria — it's used as a last-ditch effort to treat people with multiple drug resistant infections. Continued overuse of antibiotics causes more strains of bacteria to become resistant to last-resort drugs. Due to this, it's recommended to avoid using antibiotics when they're not necessary.

Since treatment is mostly about waiting for the storm to pass, prevention might be your best chance to avoid being down in the dumps with *E. coli*. Some options to consider to prevent *E. coli* include:

- Wash hands ^[3] thoroughly before eating, after using the bathroom, and after changing diapers. The bacteria can be shed in feces for several weeks, even after symptoms resolve, especially in younger children.
- Wash hands after sexual activity, especially if there's been any contact with the anus.
- Eat only thoroughly cooked ground beef.
- Avoid un-pasteurized milk products and juices.
- Wash fresh fruits and vegetables thoroughly.
- Wash hands, counters, cutting boards, and cooking utensils after they come into contact with raw meat and poultry, and especially before touching other foods to avoid cross contamination.
- Avoid swallowing water when swimming, especially in untreated water.

Hopefully this clued you in to some ways you can recognize and avoid *E. coli* and its symptoms. If you're proactive about your food preparation, swimming choices, and diligent about washing your hands, there's a higher chance you'll remain *E. coli*-free.

With clean hands,

Alice!

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[3] <https://goaskalice.columbia.edu/how-to-wash-hands>

[4] <https://goaskalice.columbia.edu/category/general-health>

[5] <https://goaskalice.columbia.edu/category/stomach-other-gastrointestinal-grumblings>

[6] <https://goaskalice.columbia.edu/category/nutrition-physical-activity>

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[13] <https://goaskalice.columbia.edu/resource/medical-services-cuimc>