

What is E. Coli?

Science Facts and Analysis from Science for Georgia

What is *E. coli*?

Escherichia coli (*E. coli*) are a type of bacteria that exist naturally in the intestines of nearly 90% of humans¹. *E. coli* are some of the most common types of bacteria found in our intestines. Within the human gut, *naturally occurring E. coli* is not only harmless, but also beneficial in facilitating digestion². *Naturally occurring E. coli* strains found in our bodies are good for human health.

However, the problem is that there are hundreds of *E. coli* strains. *Harmful E. coli* strains (those that do not occur naturally in our gut) cause a host of illnesses, ranging from diarrhea or nausea to kidney disease or septic shock¹.

Why do we test for it?

Because *E. coli* is found in the intestines of most living things, scientists measure the presence of *E. coli* in water. **High concentrations of *E. coli* point to contamination of a water system** via wastewater system overflow, excessive animal waste runoff or other harmful bacteria, including viruses. People should avoid waterways with high *E. coli* concentrations, as there is a high likelihood of getting sick from *harmful E. coli*.

How does *E. coli* make you sick?

There are a few potential ways of developing a *harmful E. coli* infection. We come in contact with *harmful E. coli* via person to person, food-borne, and fecal to oral transmission. This is why it is always good to cover your cough, clean and cook your food properly, and wash your hands⁶!

People who are carrying *harmful E. coli* may pass the infection onto other people. Farm animals can serve as excellent hosts for *harmful E. coli*, as they are found often in the gut of cattle⁷. By not washing our hands or our phones, we may unknowingly come in contact with *harmful E. coli* from feces. Infected feces also can enter into waterways via farm runoff, storm overflows, and wastewater spills.

I hear it is in my food?

Yes. Sometimes harmful *E. coli* can end up in food. Which is what it is very important to wash your food.

Common foods that may contain *E. coli*.

Raw fruits and vegetables (e.g., sprouts, spinach, and leafy greens)^{3,4}

Raw or undercooked meats (e.g., ground beef and chicken)^{3,4}

PREVENTING E COLI.
SCIENCE FOR GEORGIA

1) MAKE SURE TO WASH HANDS AFTER USING THE BATHROOM AND BEFORE COOKING OR EATING.

2) KEEP RAW PRODUCE AND MEAT SEPARATE.

3) COOK MEAT ALL THE WAY THROUGH.

145°F
160°F
165°F

4) CLEAN WELL TO AVOID CROSS CONTAMINATION.

TIP: YOU CAN MIX ONE TSP OF BLEACH WITH ONE GALLON OF HOT WATER.

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Preventing Infection

To prevent *E. coli* infection at home, eating out, or on the job, it is crucial to practice proper hygiene.

- Wash hands thoroughly for 20 seconds with warm soap and water after using the bathroom and before cooking and eating⁷.
- When preparing meals, keep raw fruits and vegetables separated from raw meats. Meats should also be cooked to optimal internal temperature.
 - According to the CDC, raw beef steaks and roasts should reach an internal temperature of 145°F. Pork and ground beef should be cooked to an internal temperature of 160°F, and lastly, chicken must be cooked until it reaches 165°F⁸. Meat thermometers are a handy kitchen tool to ensure the proper temperature is reached – be sure to clean the thermometer thoroughly to avoid cross-contamination.

Maintain cleanliness in fridges, freezers, cabinets, and pantries to prevent possible contamination. A cleaning mix of one tbsp bleach and one gallon hot water is a suitable alternative sanitizer⁹.

FAQs:

What do *E. coli* infection symptoms look like?

Symptoms include abdominal cramps, diarrhea, vomiting, and a mild to moderate fever. Symptoms can last upwards of 7 days and illness can range from very mild to incredibly severe, to sometimes, fatal. Symptoms usually start off mildly and get worse each day over several days. If you experience blood in your stool or urine, see a medical professional immediately¹⁰.

How long does it take for symptoms of *E. coli* infection to appear?

This period of developing symptoms following exposure varies from person to person. The average period of time is three to four days; but symptoms can appear in as short as one day and as long as 10 days^{10,11}.

Are certain individuals more vulnerable to infection than others?

Yes, children under the age of 5 and adults aged 65 and over are at risk of developing a severe illness due to *E. coli* infection. They are also more likely to develop kidney problems or damage. Additionally, individuals with compromised immune systems should be cautious when handling raw meats and produce, as they are more susceptible to infection¹⁰.

What is the best treatment for *E. coli* infections?

First, it is imperative to visit your doctor if you suspect you have an *E. coli* infection, especially if you have persistent diarrhea or blood in your stool¹². They will likely use a stool sample test to determine if you have an infection. The best treatment for infection from *E. coli* is sufficient hydration. Antibiotics and antidiarrheal medications are *not* recommended for *E. coli* infections because sometimes they worsen symptoms¹². A medical professional can determine what, if any, medication is appropriate for you.



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