

E. coli is a Mixed Blessing

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What is *E. coli*...?

It's an enterohemorrhagic strain of the bacterium *Escherichia coli* Gram-negative, Rod-shaped, facultative, anaerobic and motile with flagella. *E. coli* is normally found in the lower intestine of warm-blooded animals. As most strains are harmless (normal flora of the gut) which benefit hosted by producing Vitamin K2 and Vitamin complex or preventing the establishment of the pathogenic bacteria within the intestine.



Figure 1

Let's talk about the pathogenic strains of *E. coli*. There are many pathogenic strains of *E. coli*, such as enterohemorrhagic *E. coli* (EHEC) known as *E. coli* O157:H7 that cause hemorrhagic colitis. The second strain is the enteroinvasive *E. coli* (EIEC) like Shigellosis that causes gastroenteritis. The third strain is the enterotoxigenic *E. coli* (ETEC) and causing food poisoning Traveler's diarrhea. The last strain is the enteropathogenic *E. coli* (EPEC) also causing food Poisoning (Infant diarrhea).

How can I get *E. coli*? Infection can occur from (oral) contaminated food, ingesting particularly raw or undercooked ground beef. Direct contact with the feces of infected animals can also be a source of exposure.

And now we'll talk about the main symptoms. *E. coli* O157:H7 infection often causes severe and acute hemorrhagic diarrhea. Enteroinvasive *E. coli* causes gastroenteritis similar to bacillus dysentery of *Shigella*. Enterotoxigenic *E. coli* causes severe diarrhea that contaminates food or water causing infection (Traveler's diarrhea). Enteropathogenic *E. coli* causes infant diarrhea and may lead to death in children under 5 years.

How can we make a diagnosis? We can detect the bacterium by taking a stool smear, then the sample is cultured on sorbitol-MacConkey agar. So, O157 colonies appear clear due to their inability to ferment sorbitol, while the colonies of the usual of *E. coli* appear red.

How is an *E. coli* infection treated? For some types of *E. coli* associated with diarrhea, such as the watery travelers' diarrhea, antibiotics can shorten the length of time you have symptoms and might be used in moderately severe cases.



Figure 2

But if you have a fever or bloody diarrhea or if your doctor suspects Shiga toxin-producing *E. coli*, antibiotics should not be taken. They can increase the production of Shiga toxin and worsen your symptoms.

It's important to rest and get plenty of fluids to replace what your body is losing through vomiting or diarrhea.

Don't take over-the-counter medications that fight diarrhea. You don't want to slow down your digestive system, because that will delay your body's shedding of the infection.

When you start to feel better, stick to low-fiber foods at first such as: crackers, toast, eggs and rice.

Dairy products and foods that are high in fat or fiber can make your symptoms worse.

One of the most important things you can do to protect yourself and your family against *E. coli* is proper hand washing particularly before you prepare food, after handling raw meat, before preparing food for infants and after you've had contact with animals, even your pets.

The risk of an *E. coli* infection can be reduced by using safe food preparation methods, avoiding raw milk and raw meat and don't "cross-contaminate" a cooking surface.

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