

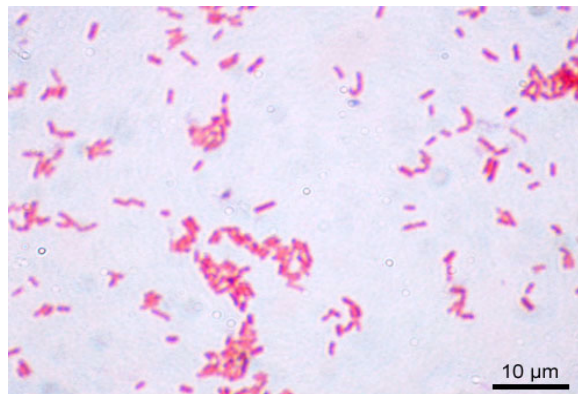
# ESCHERICHIA COLI

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## What Is E. coli?

- 1-Escherichia coli is a bacteria that lives in our intestines, it is part of the healthy digestive systems of humans and animals.
- 2-it is a **Gram-negative**, facultative anaerobic, rod-shaped bacterium.
- 3- It can survive for extended periods **outside of the host**.



## When you think something is wrong?

- 1-When you eat a hearty meal and then feel that your stomach's turning upside down.
- 2-If ground beef and raw vegetables are part of your meal, you may have infected with E. coli.
- 3-drinking untreated water and swimming in contaminated water.



### **Although E.coli is harmful, it is also important for human...**

Several types of *E. coli* are part of the normal flora of the human gut and have many beneficial functions, such as the production of vitamin K2.

They also prevent harmful bacteria, from establishing themselves in the intestine.

**Serotype O157:H7**, which can cause food poisoning in humans and may cause death.



### **Symptoms of E. coli O157:H7 infection**

Symptoms start within three to four days after being exposed to the bacteria, in some cases they may appear within a day or a week later.

#### **General symptoms:-**

- 1-Abdominal pain (severe abdominal cramping that comes on suddenly).
- 2- Diarrhea a few hours after the sudden abdominal pain.
- 3- A day later there may be bright red bloody stools.

4- Nausea

### **Not common symptoms:-**

- Vomiting - Fever

### **Treatment**

#### **First:-**

Drink plenty of fluids and get rest (to prevent dehydration caused by diarrhea)

#### **Second:-**

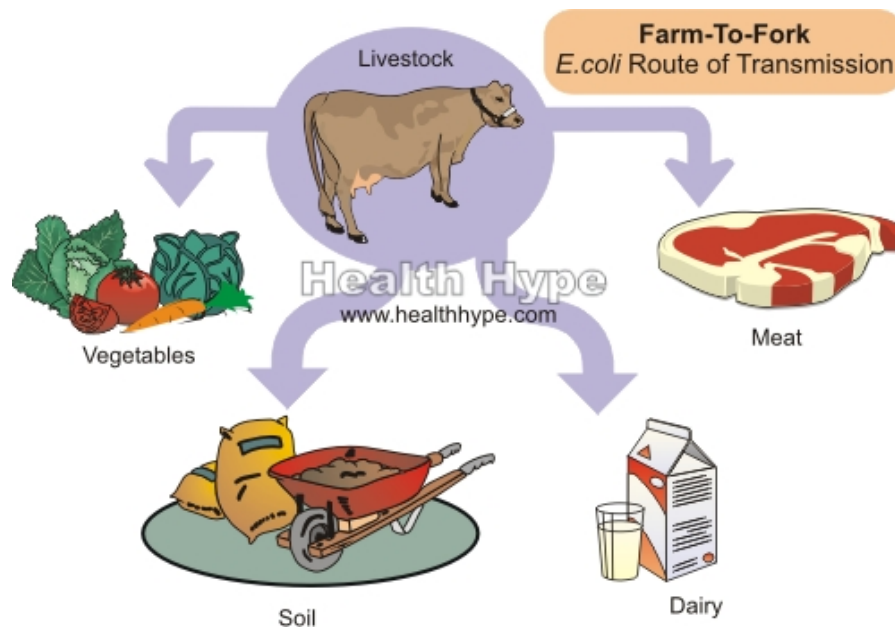
If your symptoms are severe (including blood in your stools or severe abdominal pain), call your doctor.

### **How you can avoid infection?**

- 1- Avoid eating undercooked ground beef.
- 2- Avoid drinking unpasteurized milk or juice, soft cheeses made from unpasteurized milk.
- 3- Use a food thermometer to make sure that ground beef has reached a safe internal temperature of 160° F.
- 4- Wash hands before preparing food, and after contact with cows, sheep, or goats, their food, or their living environment.

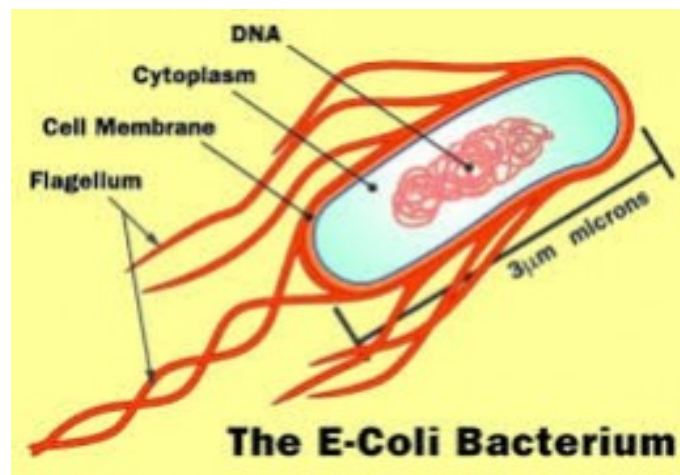
### **How E.coli spread from one person to another one?**

It can spread from one person to another, when an infected person does not wash his or her hands well after a bowel movement. *E. coli* can spread from an infected person's hands to other people or to objects.



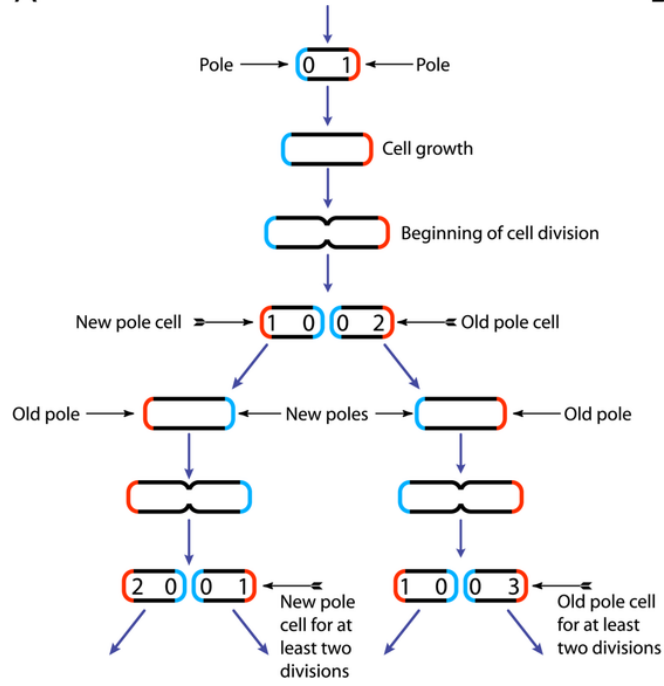
## What about DNA of E.coli?

E. coli and related bacteria has the ability to transfer DNA via bacterial conjugation, transduction or transformation, which allows genetic material to spread horizontally through an existing population.



## Life cycle of Escherichia coli...

A



B

