

Not a magic wand - massager original hitachi magic wand

[Science](#), [Biology](#)



Bacteria are invisible to the naked eye, yet hold the potential to bring down entire organisms. Bacteria can affect a wide range of organisms, but most are specified to a particular species. My personal encounter with the bacteria was with *E. coli*. More specifically, the EHEC or O157: H7 serotype of *E. coli*. This happened when I was just a mere one and a half year old. The route of infection: ingestion of undercooked hamburger. While attending a graduation party for a family friend, my mom had fed me the hamburger unaware that it had not been properly prepared. The meat had not been cooked to 160 degrees fahrenheit required to kill *E. coli* bacteria. A few days later, I began showing symptoms and was taken to the hospital. The infection developed to Hemolytic Uremic Syndrome, and was affecting me to the extent that the doctors were unsure if I would survive. Luckily enough I did. Now that I have learned a bit about medical microbiology and immunology, I began to wonder what really happened to me, and what that bacteria is on a cellular level.

As there are many different strains of *Escherichia coli*, for the purpose of this paper I will be discussing solely the EHEC or O157: H7 serotype. *Escherichia coli* itself is a motile, facultative anaerobe, gram negative bacilli. To be defined as EHEC, it would hold characteristics like the expression shiga-like toxin, which causes severe food-borne illnesses, leading to hemorrhagic colitis and hemolytic uremic syndrome. With that being said, the transmission of Enterohemorrhagic *E. coli* is through the ingestion of contaminated food, water or even soil. If the transmission is due to soil, it is likely because the soil had been contaminated with ruminant feces, typically of cattle as EHEC typically lives in normal cattle intestinal flora. Colonization

in cattle is asymptomatic, due to there not being Gb3 receptors on the vascular epithelium in their gastrointestinal tract. It is because of this that the shiga toxins are not able to internalize and circulate in the cattle's bloodstream. However, the bacteria are still able to survive in this environment, allowing cattle to excrete it in it's feces. There has also been a few reports that the bacteria can be transmitted from human-human contact, although this has not been fully confirmed.