

# Your Health

by Dr. Paul Roumeliotis

## E. Coli Infections and Hamburger Disease

The E. coli bacteria are one of many that can cause diarrhea and other problems such as urinary infections. There are different types of E. coli bacteria. Some cause damage to the intestine and thus symptoms, others cause disease by a toxin or poison they secrete. Clearly, one of the most dangerous types is E. coli 0157 - the E. coli that has been the cause of the tragedy in Walkerton, Ontario and the cause of "Hamburger Disease".

This particular type of E. coli is found in the intestines of cows and can contaminate ground beef. The infection is contracted by eating ground beef which contains this bacteria. E. coli 0157 can also infect humans if it gets into drinking water or swimming pool water. The infection usually is limited to diarrhea with some blood in it, and severe abdominal pain.

The complication of this infection, which occurs in 2-7% of people (mostly the young or very old), is called Hemolytic Uremic Syndrome (HUS). HUS can occur within a week or two after the initial infection. In HUS, the E. coli bacteria produce a toxin called verotoxin that causes the red blood cells to break down, resulting in severe anemia and the need for transfusion. This toxin also shuts down the kidneys, causing kidney failure which in many cases requires dialysis. I remember when I was a medical student in the early 1980s, I saw children with HUS, and we really did not know the cause. With time, research discovered that E. coli 0157 was the culprit.

Unfortunately, HUS has a mortality rate of close to 5%. Among the survivors there can be a high rate of long-term complications. Antibiotics do not help. A stool test can easily confirm that a person is infected with this particular bacteria, for which there really is no specific treatment. Prevention of this infection is our best defense.

Here are some ways to prevent E. coli 0157 infection:

- Make sure hamburger (ground beef) meat is well cooked - grey is not enough; the temperature of the meat should be 71°C .
- Be careful not to put cooked burgers on the same plate as the raw (uncooked) burgers.
- Make sure that frozen hamburgers are well cooked as they tend to need longer cooking times.
- Make sure that drinking water and water you swim in is chlorinated and properly monitored.
- If a child has the infection, make sure you prevent its spread by very thorough handwashing.
- Avoid unpasteurized juices and raw milk.
- Wash uncooked fresh foods thoroughly.
- Clean and disinfect all cooking surfaces after use.
- Always practice good personal hygiene (handwashing, etc).

Have a safe summer and barbeque season!

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