

HEMOLYTIC UREMIC SYNDROME (HUS) Q&A

What is hemolytic uremic syndrome (HUS)?

Hemolytic uremic syndrome, or HUS, is a rare but serious disease that affects the kidneys and blood clotting system. HUS is caused by a powerful toxin produced by certain strains of bacteria, usually *E. coli* O157. It is a complex, potentially deadly condition that is the leading cause of acute kidney failure in infants and young children. Characteristically, HUS is marked by the destruction of red blood cells, damage to the lining of blood vessel walls, and kidney failure (in severe cases).

Transfusions of blood or blood clotting factors (platelets) and dialysis are often needed in severe cases. Fortunately, most people with HUS recover completely and kidney function returns to normal. However, a prolonged hospital stay is often required.

What are the symptoms of HUS?

Early in its course, HUS may involve abdominal pain, vomiting and bloody diarrhea. In severe cases, problems in the bowel and colon may develop. The patient may develop paleness, fatigue, irritability, and weakness. Urine output decreases dramatically and may almost cease. The body's inability to rid itself of excess fluid and waste may then cause hypertension, swelling of the hands and feet, and generalized fluid accumulation (edema).

What causes HUS?

In most cases, HUS is caused by an infection in the digestive system with the bacteria *E. coli* O157:H7, which is found on contaminated food like meat, dairy products, and juice. The bacterium produces a toxin, which can cause damage to the kidneys and blood clotting system. However, the majority of people infected with these bacteria do not develop HUS. It is not clear why some people infected with these bacteria develop HUS, while many others do not.

Some cases of HUS are not caused by *E. coli* O157:H7; these people may be infected with another type of toxin-producing bacteria. On rare occasions, the disease may result from other causes.

How are HUS and *E. coli* O157:H7 infection diagnosed?

- HUS cannot be diagnosed with a single laboratory test. Physicians use the results of several tests and their medical evaluation to determine if a person has HUS. These include tests of kidney function, blood clotting factors, and blood counts.
- Infection with *E. coli* O157:H7 can be diagnosed by a stool culture. This type of culture is not performed at all laboratories. When appropriate, physicians can specifically request a culture for these bacteria, and the specimen will be sent to a laboratory that can perform the test. In general, 3 to 5 days are necessary to perform the test after the specimen has been received in the laboratory.

What is the treatment for HUS?

Once a child has been infected with *E. coli* O157:H7, there is no known medical treatment that will prevent the development of HUS. Fortunately, the majority of children will not develop this complication. For those that do, most treatments are aimed at easing the immediate symptoms of this disease and at preventing further complications. This may include supportive treatment for kidney function (dialysis) and blood clotting (transfusion). A treatment regimen will be established by a physician based on the patient's individual condition.

How can HUS be prevented?

Since hamburger and ground beef may be contaminated with *E. coli* O157:H7, thorough cooking is essential to prevent illness. Hamburger should never be served rare, and the inside of the hamburger should be brown rather than pink. The meat should be raised to

a temperature of 160° F to kill the bacteria present. This recommendation applies to hamburger prepared at home as well as hamburger served in restaurants.

Person-to-person spread of *E. coli* O157:H7 bacteria is a particular risk for people who live in the same house with an infected child. People can become infected after ingesting only a few organisms. It is also a risk to other children if an infected child is in daycare. Good hygiene and hand washing with warm water and soap are the best defense against person-to-person spread.

Young children known to have *E. coli* O157:H7 infection should be isolated from contact with other children (restricted from attending daycare) or elderly individuals until 2 stool cultures (obtained at least 2 days apart) have tested negative for the bacteria. School-age children who have recovered from their illness may attend school as long as the child demonstrates good hygiene, since spread in the school setting is much less likely than spread in the daycare setting.

Where can I get additional information on HUS?

Contact the Georgia Division of Public Health, Epidemiology Branch, by email at gaepinfo@dhr.state.ga.us

The following web site may also be helpful:

- CDC *Escherichia coli* O157:H7 fact sheet – http://www.cdc.gov/ncidod/dbmd/diseaseinfo/escherichiacoli_g.htm

