

## Hemolytic Uremic Syndrome (HUS)

*Disease Fact Sheet Series*

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### **What is Hemolytic Uremic Syndrome?**

Hemolytic Uremic Syndrome (HUS) is a serious disease that affects the kidneys and blood clotting system. It is a rare disease but is more common in children, especially those less than five years of age, than in adults.

### **What are the symptoms of Hemolytic Uremic Syndrome?**

HUS may be mild or severe. In severe cases, kidney function is greatly reduced and dialysis (purification of an individual's blood with an artificial kidney) may be necessary to temporarily take over the function of the kidneys. Abnormalities of the blood clotting system can create a bleeding tendency, and the blood count may be low (anemia). Transfusions of blood or blood clotting factors (platelets) are often needed in severe cases. Most individuals with HUS recover completely and kidney function returns to normal. However, a prolonged hospital stay is often required.

### **What causes HUS?**

In most cases, HUS is caused by infection with the bacteria *E. coli* O157:H7. However, the majority of individuals infected with *E. coli* O157:H7 do not develop HUS. These bacteria produce a toxin that can cause damage to the kidneys and blood clotting system. 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 individuals may be infected with another type of toxin-producing bacteria.

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

HUS cannot be diagnosed with a single laboratory test. Physicians use the results of several tests and their medical evaluation to determine if an individual 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 is a special type of culture that is not a routine part of an enteric bacterial screen. When appropriate, a specific request must be made to the laboratory to screen the individual's stool for this bacterium.

### **Is there any treatment for infection with *E. coli* O157:H7 bacteria?**

Diarrhea caused by *E. coli* O157:H7 infection usually resolves over a few days without any specific treatment. Treatment with antibiotics has not been shown to be effective. Antibiotic treatment does not alter the severity or duration of diarrhea, or shorten the period of time someone had *E. coli* O157:H7 in their stool. More importantly, antibiotic treatment does not reduce the risk of developing complications of *E. coli* O157:H7 infection, and in fact may increase the risk of developing HUS. It is important to prevent and treat dehydration. HUS requires hospitalization for kidney dialysis.

### **Is this a new disease?**

Diarrhea caused by *E. coli* O157:H7 was first recognized in 1982. HUS and TTP have been known to exist for many years but their association with *E. coli* O157:H7 infections have only recently been identified.

**How can *E. coli* 0157:H7 infections and the potential complication of HUS be prevented?**

- Avoid eating raw or undercooked beef (steak tartare or rare hamburgers, for example).
- Avoid drinking unpasteurized (raw) milk or unpasteurized milk products.
- Avoid drinking unpasteurized fruit juices (e.g., apple juice or apple cider).
- Always carefully wash your hands with plenty of soap and water after bowel movements, and before and after food preparation. Parents should stress proper hand washing habits to their children.
- Wash hands following contact with cattle and cattle fecal material including manure used for farming or domestic gardening practices.