

HUS

(Hemolytic Uremic Syndrome)

What is Hemolytic Uremic Syndrome (HUS)?

Hemolytic Uremic Syndrome, or HUS, is a rare but serious disease involving the kidneys and blood coagulation (blood clotting). The most common form of HUS is post-diarrheal HUS, which is more common in children than in adults, especially children less than five years of age. Post-diarrheal HUS occurs following acute gastrointestinal illness (usually diarrhea). It is seen worldwide and may occur following 5–10% of [Shiga toxin-producing *E. coli* \(STEC\)](#) infections in children under ten years of age (an example of a STEC infection is [E. coli O157:H7](#)).

Since the year 2000, an average of 5.5 cases of post-diarrheal HUS were reported per year in Utah. It is suspected that many more cases of post-diarrheal HUS occurred that were not reported to public health.

How is HUS caused?

Post-diarrheal HUS is preceded by infection with Shiga toxin-producing *E. coli* (STEC) bacteria. However, the majority of individuals infected with Shiga toxin-producing *E. coli* (STEC) do not develop HUS. Shiga toxin-producing *E. coli* (STEC) produces a toxin that can cause damage to the kidneys and blood clotting system. It is not clear why some people infected with Shiga toxin-producing *E. coli* (STEC) develop post-diarrheal HUS, while others do not. While most cases of post-diarrheal HUS are preceded by Shiga toxin-producing *E. coli* (STEC) infection, some are not. With such cases, individuals may be infected with another type of toxin-producing bacteria such as [Shigella](#), or may have had a diarrheal infection that was not diagnosed with laboratory tests.

HUS can also be preceded by pancreatitis, pregnancy, or certain stem cell transplant procedures, or may be induced by certain prescription drugs. These HUS cases are not post-diarrheal and are not tracked by public health.

What are the signs and symptoms of HUS?

Post-diarrheal HUS usually occurs during the two weeks following the onset of diarrhea (acute bloody diarrhea) and is characterized by the following: anemia, acute renal failure (kidney failure) and low platelet count. HUS may be mild or severe.

In severe cases, kidney function is greatly reduced and dialysis (cleansing 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 bleeding problems, and the blood count may be low (anemia). Blood transfusions are often needed in more severe cases. Most individuals with HUS recover completely and kidney function returns to normal.

What is the treatment for HUS?

The only treatment for patients with HUS is supportive care, which requires a prolonged hospital stay. There is no known treatment or therapy to stop or halt the progression of HUS.

What can be done to prevent *E. coli* O157:H7 infections and the potential complications of HUS?

To avoid exposure to bacteria that may cause diarrheal illness that can precede post-diarrheal HUS, you should do the following:

- Always wash your hands thoroughly with soap and water before eating or preparing food, after using the toilet, after changing a diaper, and after touching pets or any other animal.
- Wash hands thoroughly and frequently when ill with diarrhea or when caring for someone ill with diarrhea.
- Teach children proper [hand washing techniques](#).
- Avoid eating raw or undercooked beef.
- Avoid drinking unpasteurized (raw) milk or unpasteurized milk products.
- Avoid drinking unpasteurized fruit juices (e.g., apple juice or apple cider).
- Keep food that will be eaten raw, such as vegetables, from becoming contaminated by animal-derived food products.
- Wash fruits and vegetables thoroughly, especially those that will not be cooked.

Where can I get more information?

- Your personal doctor
- Your local health department, listed in your telephone directory
- The Utah Department of Health, Bureau of Epidemiology (801) 538-6191

Utah Department of Health
Bureau of Epidemiology
April 2008