



Shiga toxin producing *E. coli* (STEC) and haemolytic uraemic syndrome (HUS)

What is STEC infection and HUS?

Escherichia coli (*E. coli*) are bacteria normally found in the gut and faeces (poo) of people and animals. Most types of *E. coli* are harmless, but some, such as Shiga toxin producing *E. coli* (STEC), produce toxins (poisons) which can damage the digestive tract.

A small number of people with STEC infection may develop kidney failure and anaemia (due to destruction of the red blood cells that carry oxygen around the body). This is called haemolytic uraemic syndrome (HUS).

Children under 5 and the elderly are at greatest risk of developing this condition. HUS can also be fatal in a small number of people. This syndrome can also be caused by other types of bacteria and medical conditions.

How do I get STEC infection?

STEC is mainly found in the faeces of cows and sheep. You become infected with STEC by ingesting the bacteria through your mouth. This can be by:

- eating undercooked minced beef and lamb meat (for example in hamburgers)
- drinking unpasteurised milk
- drinking contaminated water
- contact with farm animals, particularly sheep and cattle, and their faeces
- eating contaminated fresh produce, such as salad vegetables.

Person-to-person spread can happen if you come into contact with microscopic amounts of faeces from an ill person. This may occur directly by close personal contact, or indirectly by touching contaminated surfaces such as taps, toilet flush buttons, toys and nappies.

Signs and symptoms

Symptoms of STEC infection start between 1 to 10 days (usually 2 to 4 days) after you have ingested the bacteria and usually last for 5 to 7 days.

Symptoms can include:

- stomach cramps
- bloody diarrhoea
- vomiting and fever are less common.

Signs and symptoms of HUS can include:

- decreased urination
- swelling of limbs
- high blood pressure
- jaundice (yellowish discolouration of the skin and the whites of the eyes)
- seizures (fits) or other neurological symptoms
- bleeding into the skin.

How do I know if I have STEC infection?

There are many causes of gastroenteritis, and laboratory testing of a faecal specimen is necessary to confirm that symptoms are due to STEC infection.

Treatment of STEC infection

People with confirmed or suspected STEC infection should:

- Drink plenty of fluids such as plain water or oral rehydration drinks (available from pharmacies) to avoid dehydration. Dehydration is especially dangerous for babies and the elderly.
- Avoid anti-vomiting or anti-diarrhoeal



medications unless prescribed or recommended by a doctor.

People with confirmed or suspected HUS usually require hospitalisation.

If you experience severe or prolonged symptoms you should visit a doctor.

While you have the infection

- Do not go to work or school for at least 24 hours after symptoms have finished, or 48 hours if you work in or attend a high risk setting, such as health-care, residential care or child-care, or handle food as part of your job.
- People with STEC infection who work in a high risk setting as detailed above, may be contacted by their local public health unit to discuss extra precautions.
- Wash and dry your hands thoroughly after going to the toilet.
- Avoid preparing or handling food and drinks for other people in your household until at least 24 hours after your symptoms have finished. If you must prepare or handle food, thoroughly wash your hands beforehand to reduce the risk of spreading the infection to others.
- Immediately remove and wash using detergent and hot water any clothes or bedding contaminated with diarrhoea.
- After an episode of diarrhoea or vomiting, clean contaminated surfaces (for example benches, floors and toilets) immediately using detergent and hot water. Then disinfect surfaces using a bleach-based product diluted according to manufacturer's instructions.
- Clean carpet or soft furnishings contaminated with diarrhoea or vomit immediately using detergent and hot water and then steam clean

How can STEC infection be prevented?

- Avoid contact with people who have gastroenteritis symptoms.
- Wash and dry hands thoroughly after handling animals, changing nappies, going to the toilet, cleaning up vomit or diarrhoea, and before eating or drinking. If hand washing facilities are not available use an alcohol-based gel.
- Raw meats can contain STEC bacteria. Keep raw foods separate from cooked and ready-to-eat foods (for example salads) to prevent cross-contamination. Store raw meat below ready-to-eat food in the refrigerator and use separate chopping boards and knives for raw and ready-to-eat foods.
- Cook foods thoroughly. Make sure minced meat (such as burgers and sausages) is cooked to an internal temperature of 75°C, or until meat juices run clear and are not pink.
- Keep cold food below 5°C and hot food above 60°C.
- Do not drink unpasteurised milk

When travelling

When travelling to developing countries, especially in Asia, the Pacific islands, Africa, the Middle East and Central and South America you should avoid:

- salads and fruit juices
- raw or cold seafood, including shellfish
- raw or runny eggs
- cold meat
- unpasteurised milk and dairy products (including ice-cream)
- ice in drinks and flavoured ice blocks.

Fruit that you peel yourself is usually safe. Remember –'cook it, boil it, peel it, or leave it'.



Use bottled water or disinfect water (by boiling, chemical treatment or purifiers) for drinking and brushing teeth.

Read more about [healthy international travel](#).

Where to get help

- See your doctor.
- Visit a GP after hours.
- Ring healthdirect Australia on 1800 022 222.

Remember

- Safe food preparation and thorough cooking, and washing your hands after contact with raw meats and animals can help prevent STEC infection.
- Children under 5 are most at risk of developing HUS.
- HUS can lead to permanent kidney damage and death.

Acknowledgements Public Health

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See also

- [Gastroenteritis](#)
- [Food safety tips](#)
- [Healthy international travel](#)

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