

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



Escherichia coli (*E. coli*) is a bacterium commonly found in the faeces of people and many animals. Most *E. coli* found in the gut are harmless but some may produce toxins such as Shiga toxin, which can cause disease. STEC infection may cause no symptoms or diarrhoea or, rarely, the Hemolytic uraemic syndrome (HUS)/thrombotic thrombocytopenic purpura (TTP) spectrum.



STEC, HUS and thrombotic thrombocytopenic purpura (TTP) are notifiable conditions¹

How STEC is spread

Usually *E. coli* that carry Shiga toxin genes cause isolated infections, but occasionally outbreaks occur. The common sources of Shiga toxin producing *Escherichia coli* (STEC) infections include:

- > eating raw or undercooked beef mince
- > eating uncooked fermented meat products (for example mettwurst and salami)
- > eating vegetables, salads and fruit juices contaminated with animal faeces
- > contact with farm animals
- > swallowing contaminated water.

Signs and symptoms

Infection with STEC may produce no symptoms, or people may have:

- > simple diarrhoea
- > bloody diarrhoea
- > abdominal cramps.

Often there is little or no fever or vomiting.

A small percentage of patients with STEC may develop the Hemolytic uraemic syndrome (HUS)/thrombotic thrombocytopenic purpura (TTP) spectrum in which there is damage to various body parts such as the kidney and brain. Children and the elderly are more susceptible. Other medical conditions besides STEC infection can also cause HUS and TTP.

Diagnosis

Diagnosis is made by growing the bacteria in a faecal sample, or by detecting *E. coli* in a faecal specimen using a PCR (polymerase chain reaction) test in a pathology laboratory.

Blood tests may provide additional clues to the diagnosis.

Incubation period

(Time between becoming infected and developing symptoms)

Usually ranges from 3 to 8 days but may be longer.

Infectious period

(time during which an infected person can infect others)

3 to 4 days, usually with a range from 2 to 10 days.

Treatment

Treatment for complications such as dehydration and kidney failure may require hospitalisation, sometimes in intensive care. In most cases antibiotics should not be used.

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Prevention

- > Exclude people with STEC or HUS from childcare, preschool, school and work until there has been no diarrhoea for 24 hours. If working as a food handler in a food business, the exclusion period should be until there has been no diarrhoea or vomiting for 48 hours.
- > Infants, children and adults with STEC infection should not swim until there has been no diarrhoea for 24 hours.
- > All animal products, particularly from cattle and sheep, which are not thoroughly cooked or pasteurised may harbour STEC or other harmful bacteria.
- > Avoid cross contamination in the kitchen. Keep raw meats, including pet meat, away from items that won't be cooked, and use hot water and detergent to thoroughly wash knives, trays, chopping boards, and any other surfaces or items that might be contaminated.
- > All fruits and vegetables including lettuce and sprouts, especially if consumed raw, should be protected from contamination from raw meat or its juices and should be washed before consumption.
- > Meat should be cooked thoroughly, until the juices run clear.
- > Do not drink unpasteurised milk or juices.
- > Hand washing will prevent most person-to-person transmission. Hands should be washed after contact with animals, after visiting petting zoos, before preparing or eating food and after using the toilet.

- > Babies and small children without diarrhoea who are not toilet trained should wear tight fitting waterproof pants or swimming nappies in swimming pools and changed regularly in the change room. When faecal accidents occur, swimming pools should be properly disinfected.

Useful links

Food Safety website www.sahealth.sa.gov.au/foodsafety

- > Pasteurised milk v's raw milk
 - > Thawing, cooking, cooling and reheating food
- SA Health website www.sahealth.sa.gov.au
- > Collecting a faecal sample
 - > Exclusion periods from childcare, preschool, school and work
 - > Hand hygiene
 - > Keeping areas clean
 - > When you have a notifiable condition

¹ The law requires doctors and laboratories to report some infections or diseases to SA Health. These infections or diseases are commonly referred to as 'notifiable conditions'.

You've Got What? 5th Edition

Communicable Disease Control Branch

Telephone: 1300 232 272 Email: HealthCommunicableDiseases@sa.gov.au

The SA Health Disclaimer for this resource is located at www.sahealth.sa.gov.au/youvegotwhat



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Interpreter



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