

What is verotoxigenic E Coli O157?

A verotoxigenic E. coli, known as VTEC, is a harmful strain of a bacterium called *Escherichia coli*. Most *E. coli* strains are harmless and live in the gut of humans and other animals without causing any problems. VTEC, however, is capable of producing a toxin that can cause serious illness.

Where does it come from?

The bacteria live in the gut of farm and wild animals, especially sheep and cattle, often without causing illness. The surface of meat can become contaminated during slaughter and processing. However, if the meat is minced, contamination can be spread throughout the whole meat product. Therefore, care should be taken to ensure that items such as burgers and meat loaf are cooked all the way through. No pink areas should be seen in the centre. Unpasteurised milk, contaminated raw vegetables and contaminated water are also potential sources of infection. People, especially children, visiting farms, zoos and wildlife parks may pick up these bacteria on their hands by touching animals, their droppings, or contaminated surfaces.

How does it spread?

You may have heard that the illness is often associated with the consumption of burgers and pre-cooked meats, including cold cuts. This is an over-simplification as it is probably spread in a number of different ways. These may include:

- *Eating / drinking: contaminated food / drinks including milk / water.*
- *Direct contact with infected animals.*
- *Indirect contact with infected animals e.g. objects (clothing) contaminated with animal manure.*
- *Person-to-person spread.*

Adequate cooking should destroy E coli O157 in food, but the bacteria may be spread from contaminated to non-contaminated food if hygiene and catering practices are substandard. It needs very few bacteria to produce illness so the risk of person-to-person spread is high if hand washing practices are inadequate.

What are the symptoms?

Symptoms associated with E. coli O157 usually present around 2-4 days after ingesting the bacteria. These may include:

Stomach cramps

Diarrhoea, - often bloody

Nausea / vomiting

Fever (uncommon)

Some people show few or no symptoms.

For the majority of people, the illness resolves in 5-10 days. In small children under 5, and the elderly, E coli O157 may lead to a condition called Haemolytic Uraemic Syndrome (HUS). This is characterised by a serious disturbance of the clotting of the blood and kidney failure as a result of a release of a bacterial toxin and requires urgent treatment.

Will I need treatment?

There is no evidence that antibiotics improve the course of the disease. If you do become infected, remember to drink plenty of fluids. E coli O157 can cause the body to lose a large amount of water through vomiting and diarrhoea. Adequate fluid intake will replace the lost water and prevent dehydration.

Individuals who are at greatest risk of developing HUS (e.g. young children and the elderly) will require urgent

specialist care. If symptoms become severe, contact your GP immediately for further advice.

Can I prevent infection?

Adhering to the following can reduce the risk of contracting or spreading E coli O157 :

1. Always wash your hands.

Regular, thorough hand washing is essential and should be done:

Before:

- *Food handling and cooking*
- *Eating*
- *Feeding young children or the elderly*
- *Departing a farm, zoo or wildlife park even if there is no contact with animals.*

and After:

- *Using the toilet*
- *Handling animals*
- *Changing nappies*
- *Handling raw meat or poultry*

2. Always ensure that food is thoroughly cooked.

- *Meat should be cooked until the juices run clear, not pink.*
- *Hamburgers should be cooked through the centre. Remember that during processing of minced beef, bacteria originally on the outer surface may be distributed throughout the meat.*

3. Practise safe food preparation techniques.

- *Check 'use by' dates - use only food within the recommended period*
- *Do not use the same chopping board for raw food and other foodstuffs.*

Can I prevent infection?

(continued from overleaf)

- Clean knives and utensils between use when preparing raw food and other foodstuffs.
 - Clean food preparation areas with detergent and hot water.
 - Prepare and store raw and cooked foods separately.
 - Store all raw meat including beef and poultry in the fridge on the shelf below cooked foods to avoid drip contamination.
 - Defrost poultry, meat and other products thoroughly before cooking. These items should be cooked until the juices run clear and there are no pink bits inside. Always follow manufacturer's instructions.
 - Once cooked, consume food immediately or cool rapidly and refrigerate or freeze.
 - Keep perishable products in the refrigerator operating below 5°C. (*E coli O157* can multiply on food at room temperature.)
 - If you re-heat food, make sure it is piping hot.
 - Wash salad items and other foods to be eaten raw.
 - Exclude pests and pets from the kitchen.
4. Avoid consuming unpasteurised dairy products, particularly unpasteurised milk, and untreated water from private water supplies, fords and streams.
 5. If visiting a farm or zoo, food and drink should be consumed well away from areas where animals are kept, and hands should be washed with soap and water after touching animals and before eating or drinking
 6. Avoid swimming pools until diarrhoea has ceased for 2 weeks.

When can I return to work?

Infected individuals in special risk groups should not return to educational/employment environments until two negative faecal samples have been obtained 24 hours apart. This particularly applies to children attending nursery school and food handlers. Faecal samples will often be negative after 1 to 2 weeks. It is not uncommon however for infected individuals, particularly young children, to remain positive for 4 to 8 weeks.

Some contacts of infected individuals will also be required to provide two negative faecal samples since as little as 30% of infected individuals may show symptoms during an outbreak. Get in touch with your environmental health department for further details.

If you suspect you have contracted E-coli you will need to provide a stool specimen to confirm this, in which case you should contact your General Practitioner (GP).

If you would simply like more information contact either your GP or the Public Health Protection Unit at Greater Glasgow & Clyde NHS Board.

Tel: 0141-201-4917

E-coli O157

- and other verotoxigenic *E. coli*