

**OVERVIEW OF SHIGA-TOXIN PRODUCING *E. COLI*
INFECTION INCLUDING NEW DEVELOPMENTS
AND IMPLICATIONS FOR FOOD SAFETY**

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Shiga-toxin producing *E. coli* (STEC) bacteria are of serious public health concern because of their association with massive outbreaks of gastroenteritis, which may be complicated by the hemolytic uraemic syndrome (HUS). STEC-associated HUS is the leading cause of acute renal failure in children and carries a significant morbidity and mortality. Ruminants, especially cattle, are the main reservoirs of STEC. Infection is acquired typically through the ingestion of contaminated food or water, via person-to-person transmission or by direct animal contact. Although over 200 different OH serotypes of STEC have been associated with human illness, a majority of reported outbreaks and sporadic cases have been associated with serotype O157:H7. However, non-O157 STEC serotypes are increasingly being recognized in serious human diseases as highlighted by the massive 2011 outbreak in Europe associated with serotype O104:H4. Prevention and control of food-borne STEC-associated illness requires attention at all levels in the chain of transmission, including the farm, abattoir, food processing, packaging and distribution, the wholesaler, retailer and the consumer. Modeling studies suggest interventions at the farm or abattoir levels can have the greatest impact in reducing the flow of STEC laterally and down the food chain. Advanced molecular methods are facilitating rapid detection and mitigation of human outbreaks and of contamination in the food chain, and novel approaches are being developed to reduce excretion of STEC serotype O157 strains by cattle, and to decontaminate foods. Policies for screening food for different STEC serotypes vary in different countries based on surveillance data.

Keywords: *E. coli* (STEC), Shiga-toxin, food poison

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