

Bacterial hazards of concern in meat and poultry

Of the microbiological hazards of concern in meat and poultry, the most important are bacteria. Illness from meat and poultry is primarily caused by bacterial pathogens. The pathogens that are most likely to be found in livestock (cattle, sheep, and swine) and poultry (chicken and turkey) include *Salmonella*, *Campylobacter*, and *Listeria monocytogenes*. *Listeria monocytogenes* also is widespread in the environment. *Escherichia coli* is also found in livestock and poultry, but most strains are not pathogenic; the pathogenic *E. coli* of primary concern is known as *E. coli* O157:H7 and is found in beef. (Although the organism has occasionally been found in chickens and pigs, it has not been known to cause illness from those animals.) *Yersinia enterocolitica* is a pathogen most commonly associated with pork; only certain serotypes (strains) are pathogenic. *Clostridium perfringens* can also be found in meat and poultry; the spores may survive cooking and grow to high numbers in foods due to temperature abuse. *Clostridium botulinum* is rare in meats. When present, it is there in very low numbers (estimates are 0.1 spore to 7 spores per kg meat). *Bacillus cereus* is another sporeformer of concern in meat and poultry products, especially those containing spices, which is a common source of the spores.

All of these pathogens have been implicated in food borne disease outbreaks associated with the consumption of meat and poultry products in which these hazards were not properly controlled. Proper cooking or thermal processing, fermentation, cooling, and storage of food can destroy and/or prevent growth of these bacteria.