

COMMON FOODBORNE PATHOGENS

| Pathogen B=bacteria V=virus P=parasite | Estimated incidence (Foodborne) | Estimated Cost (Millions of Dollars) | Disease Severity | Common Food Sources | Food-Handling Error(s) Associated with Pathogen | Primary Control Factor |
|---|------------------------------------|---|--|---|--|--------------------------------------|
| Norovirus (V) | 5,462,000 | 8,160 | Mild to moderate | Contaminated shellfish and prepared foods handled by infected food handlers | Poor personal hygiene or infected food handlers | Personal hygiene |
| <i>Shigella spp.</i> (B) | 131,000 | 34 | Moderate to severe | Prepared foods handled by infected food handlers | Poor personal hygiene or infected food handlers | Personal hygiene |
| Hepatitis A (V) | 1,570 | 21 | Moderate to severe | Contaminated shellfish and prepared foods handled by infected food handlers | Poor personal hygiene or infected food handlers | Personal hygiene |
| <i>Clostridium perfringens</i> (B) | 966,000 | 46 | Mild, self-limiting | Meat, poultry products, and beans | Bacterial spores survive cooking; multiply when food is in Danger Zone | Keep food at safe temperatures |
| <i>Staphylococcus aureus</i> (B) | 241,000 | 85 | Mild to severe (rarely) | High-protein foods handled frequently during preparation | Food handler contaminates cooked food, <i>S. aureus</i> produces toxin while food is in Danger Zone (toxin not destroyed by cooking) | Keep food at safe temperatures |
| <i>Bacillus cereus</i> (B) | 63,400 | 11 | Mild, self-limiting | Cooked rice and pasta | Bacterial spores survive cooking; multiply when food is in Danger Zone | Keep food at safe temperatures |
| <i>Campylobacter spp.</i> (B) | 845,000 | 1,798 | Mild to moderate | Raw milk, poultry, beef, pork, shellfish | Inadequate cooking, fecal/environmental contamination | Adequate cooking/cross contamination |
| <i>Salmonella spp.</i> (B) | 1,029,000 | 1,190 | Mild to severe | Meat, poultry, raw milk, eggs, fresh produce | Inadequate cooking, fecal/environmental contamination | Adequate cooking/cross contamination |
| <i>Toxoplasma gondii</i> (P) | 86,700 | 1,247 | Mild to severe | Pork, ground beef, other meats | Inadequate cooking, fecal/environmental contamination | Adequate cooking/cross contamination |
| <i>Yersinia enterocolitica</i> (B) | 97,700 | 77 | Mild to moderate | Pork, milk, or milk products | Inadequate cooking, fecal/environmental contamination | Adequate cooking/cross contamination |
| <i>Escherichia coli</i> 0157:H7 (B) | 63,200 | 205 | Moderate to severe | Ground beef, raw milk, lettuce, unpasteurized apple cider | Inadequate cooking, fecal/environmental contamination | Adequate cooking/cross contamination |
| <i>Listeria monocytogenes</i> (B) | 1,600 | 29 | Mild to severe. Can cause still-birth. | Raw milk, soft cheeses, raw vegetables, raw meat sausages | Inadequate cooking, post-pasteurization contamination, lengthy refrigeration | Avoid food from unsafe source |
| <i>Clostridium botulinum</i> (B) | 55 | 1 | Severe | Home-canned or fermented vegetables, meat, fish | Inadequate processing time for low-acid food; poor fermentation | Avoid food from unsafe source |

(Medeiros, L., et al., 2001. Estimated incidence updated using Scallan et al., 2011.)