

Foodborne Pathogens and Disease

Etiology	Disease Symptoms and Characteristics	Incubation Period	Duration of Illness	Foods Associated
<i>Bacillus cereus</i>	Vomiting, diarrhea, abdominal pain Sporeformer, produces toxin	8 to 16 h	24 to 48 h	Cooked foods stored at room temperature or inadequately reheated leftovers
<i>Campylobacter jejuni</i>	Diarrhea (often bloody), abdominal pain, fever; Long-term sequela: Guillain-Barré Syndrome	2 to 10d, usually 2 to 5 d	2 to 10 d	Undercooked poultry, unpasteurized milk, contaminated water
<i>Clostridium botulinum</i>	Blurred vision, bilateral paralysis, difficulty swallowing (GI); Sporeformer, preformed neurotoxin	2 h to 8 d, usually 12 to 48 h	Days to months	Inadequately processed canned (especially home-canned) low-acid foods, smoked/fermented seafood, cooked potatoes
<i>Clostridium perfringens</i>	Diarrhea, abdominal cramps Sporeformer, endoenterotoxin	8 to 22 h	24 to 48 h	Temperature-abused cooked meats, gravy, beans
<i>Escherichia coli</i> (Enterohemorrhagic or verotoxigenic)	Diarrhea (often bloody), abdominal cramps; Can lead to hemolytic uremic syndrome, chronic kidney disease; antibiotic therapy may be counter indicated	1 to 10 d, typically 2 to 5 d	5 to 10 d	Undercooked beef, raw produce including unpasteurized juice
<i>Escherichia coli</i> (Enterotoxigenic)	Watery diarrhea, abdominal pain, vomiting, low grade fever	12 h to 3 d	3 to >7 d	Uncooked foods, soft cheese, water, fecally-contaminated foods
<i>Listeria monocytogenes</i>	Diarrhea, abdominal cramps, fever. If invasive, meningitis, neonatal sepsis, fever; stillbirth, miscarriage	3 to 70 d, usually 4 to 21 d	Variable	Soft cheese, unpasteurized milk, RTE meats, hot dogs
<i>Salmonella</i> spp.	Fever, abdominal pain, vomiting, diarrhea	6 to 72 h, typically 18 to 36h	4 to 7 d	Undercooked eggs, poultry, unpasteurized milk or juice, raw produce, chocolate
<i>Shigella</i> spp.	Diarrhea (often bloody), fever, abdominal cramps	12h to 6d, usually 2 to 4 d	4 to 7 d	Fecally-contaminated RTE food
<i>Staphylococcus aureus</i>	Vomiting, diarrhea, abdominal pain; Intoxication due to preformed toxin	1 to 8h, usually 2 to 4h	24 to 48 h	Improperly refrigerated meats, cream-filled pastries, high protein leftover foods
<i>Vibrio</i> spp.	Vomiting, diarrhea, abdominal pain, septicemia, fever (depending on species)	1 to 7 d	2 to 8 d	Undercooked seafood, contaminated water
<i>Yersinia</i> spp.	Diarrhea, abdominal pain (often severe), fever, nausea, vomiting	1 to 7 d	1 to 3 wks	Unpasteurized milk, tofu, contaminated water, undercooked pork
<i>Cryptosporidium parvum</i>	Diarrhea, nausea, vomiting, fever	1 to 12 d, typically 7 d	Wks to months with relapse	Drinking water, foods contaminated by handler and without subsequent inactivation treatment
<i>Cyclospora cayetanensis</i>	Fatigue, protracted diarrhea, often relapsing Humans only known reservoir	1 to 11d, median: 7d	Wks to months with relapse	Fresh produce (raspberries, lettuce, basil), contaminated water
<i>Giardia lamblia</i>	Diarrhea, gas, cramps, nausea, fatigue Treated with metronidazole	3 to 25d	Days to weeks	Salads, contaminated water, salmon
<i>Toxoplasma gondii</i>	Flu-like symptoms Vertical transmission (mother to fetus) possible	10 to 13 d	Months	Undercooked meat
<i>Trichinella spiralis</i>	Gastroenteritis, fever, edema around eyes, muscular pain, labored breathing	1 to 2d for intestinal phase	Months	Undercooked meat
Hepatitis A Virus	Diarrhea, jaundice, dark urine, fatigue, anorexia, nausea; Vaccine available, treated with Immune globulin within 14 days of exposure	15 to 50d, median: 28 d	2 wks to 3 months	Shellfish from contaminated waters, fresh produce, fecally-contaminated RTE foods
Norovirus	Vomiting, cramps, diarrhea, headache	15 to 77 h, usually 24 to 48 h	12 to 60 h	Fecally-contaminated foods. Shellfish, fresh produce, RTE handled foods.
Rotavirus	Vomiting, watery diarrhea, low-grade fever Vaccine available	1 to 3 d	4 to 8 d	Fecally-contaminated foods
Astrovirus, calicivirus, adenovirus	Vomiting, cramps, diarrhea, headache	15 to 77 h, usually 24 to 48 h	2 to 9 d	Fecally-contaminated foods, shellfish