

Bacteria That Cause Foodborne Illness

Handout 1

Bacteria	Found	Transmission	Symptoms
Salmonella (over 30 types)	Intestinal tracts and feces of animals; Salmonella Enteritidis in eggs	Raw or undercooked eggs, poultry and meat, raw milk and dairy products, seafood, and food handlers	Stomach pain, diarrhea, nausea, chills, fever and headache usually appear 8 to 72 hours after eating; may last 1 to 2 days.
Clostridium perfringens	Soil, dust, sewage, and intestinal tracts of animals and humans. Grows only in little or no oxygen.	Called “the cafeteria germ” because many outbreaks result from food left for long periods in steam tables or at room temperature. Bacteria destroyed by cooking, but some toxin-producing spores may survive.	Diarrhea and gas pains may appear 8 to 24 hours after eating; usually last about 1 day, but less severe symptoms may persist for 1 to 2 weeks.
Staphylococcal aureus	On humans (skin, infected cuts, pimples, noses and throats).	Person-to-person through food from improper food handling. Multiply rapidly at room temperature to produce a toxin that causes illness.	Severe nausea, abdominal cramps, vomiting and diarrhea occur 1 to 6 hours after eating; recovery within 2 to 3 days – longer if severe dehydration occurs.
Escherichia coli (E.coli) 0157:H7	Intestinal tracts of some mammals, raw milk, unchlorinated water; one of several strains of E. coli that can cause human illness.	Contaminated water, raw milk, raw or rare ground beef, unpasteurized apple juice or cider, uncooked fruits and vegetables; person-to-person.	Diarrhea or bloody diarrhea, abdominal cramps, nausea, and malaise; can begin 2 to 5 days after food is eaten, lasting about 8 days. Some, especially the very young, have developed hemolytic-uremic syndrome (HUS) that causes acute kidney failure. A similar illness, thrombotic thrombocytopenic purpura (TTP), may occur in adults.
Clostridium botulinum	Widely distributed in nature, soil, water, on plants and intestinal tracts of animals and fish. Grows only in little or no oxygen.	Bacteria produce a toxin that causes illness. Improperly canned foods, garlic in oil, vacuum packaged and tightly wrapped food.	Toxin affects the nervous system. Symptoms usually appear 18 to 36 hours, but can sometimes appear in as few as 4 hours or as many as 8 days after eating; double vision, droopy eyelids, trouble speaking and swallowing, and difficulty breathing. Fatal in 3 to 10 days if not treated.

Bacteria	Found	Transmission	Symptoms
Shigella (over 30 types)	Human intestinal tract; rarely found in other animals.	Person-to-person by fecal-oral route; fecal contamination of food and water. Most outbreaks result from food, especially salads, prepared and handled by workers with poor personal hygiene.	Disease referred to as “shigellosis” or bacillary dysentery. Diarrhea containing blood and mucus, fever, abdominal cramps, chills and vomiting; 12 to 50 hours from ingestion of bacteria; can last a few days to 2 weeks.
Listeria monocytogenes	Intestinal tracts of humans and animals, milk, soil, leaf vegetables; can grow slowly at refrigerator temperatures.	Ready-to-eat foods such as hot dogs, luncheon meats, cold cuts, fermented or dry sausage, and other deli-style meat and poultry, soft cheeses and unpasteurized milk.	Fever, chills, headache, backache, sometimes upset stomach, abdominal pain and diarrhea; may take up to 3 weeks to become ill; may later develop more serious illness in at-risk patients (pregnant women and newborns, older adults and people with weakened immune systems).

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