

Classification of Illnesses Attributable to Foods
Bacterial

ILLNESS	CAUSATIVE AGENT	INCUBATION PERIOD AND SYMPTOMS	FOODS INVOLVED	CONTROL MEASURES
SALMONELLOSIS (Infection)	Members of the genus Salmonella e.g. S. typhimurium, Newport, oranienburg, montevideo, Newington, enteritidis, choleraesuis, pullorum, and others, including Arizona group	5-72 hours, commonly 12-36 hours Diarrhea, abdominal pain, chills, fever, vomiting, dehydration, prostration, anorexia, headache, malaise. Duration of several days. Enteritis or fecal infection may also occur.	Meat, poultry, and eggs and their products. Other incriminated foods include coconut, yeast, cottonseed protein, smoked fish, dry milk.	Chill foods rapidly in small quantities, cook foods thoroughly, pasteurize eggs products and milk, avoid cross contamination from raw to cooked foods, sanitize equipment. Heat treat feed and feed ingredients. Process meat and poultry in sanitary manner. Maintain farm sanitation. Practice personal hygiene. Protect food and feed from animal, human, bird, insect, rodent excreta.
CLOSTRIDIUM PERFRINGENS (Infection)	Clostridium perfringens (welchi)	8-24 hours, median 12 hours. Acute abdominal pain, gas, diarrhea. Occasional dehydration and prostration. Nausea, vomiting, fever, and chills are rare. Short duration of 1 day or less.	Cooked meat and poultry that has stayed at room temperature for several hours or cooled slowly. Gravy, stew, and meat pies.	Chills foods rapidly in small quantities, practice personal hygiene, cure meats adequately, dispose of sewage in a sanitary manner. Thorough cooking will destroy vegetative cells but no heat resistant spores.
SHIGELLOSIS (Infection)	Members of the genus Shigella	7-48 hours longer, usually 24-48 hours Extremely variable, mild to severe symptoms: abdominal cramps, fever, chills, diarrhea, watery stools (frequently containing blood, mucus, or pus), tenesmus, headache, lassitude, prostration, nausea, dehydration.	Moist, mixed foods. Milk, beans, potato, tuna, shrimp, turkey, and macaroni salads, and apple cider.	Practice personal hygiene. Chill foods rapidly in small quantities, prepare food in a sanitary manner, cook foods thoroughly, protect and treat water, dispose of sewage in a sanitary manner, control flies.
STAPHYLOCOCCAL (Intoxication)	Enterotoxin-producing staphylococcus (preformed enterotoxin)	1-7 hours, usually 2-4 hours. Sudden onset of nausea, salivation, vomiting, retching, diarrhea, abdominal cramps, dehydration, sweating, weakness, prostration. Fever usually doesn't occur. Short duration of not more than a day or two.	Cooked ham, meat products; cream filled pastry; potato, ham poultry, and fish salads; milk and cheese; hollandaise sauce; bread pudding; poultry and dressings; sauces and gravies. High protein leftover foods.	Chill foods rapidly in small quantities, practice personal hygiene, exclude the ill (with diarrhea, infected cuts, colds) from work, sanitize equipment. Thorough cooking, reheating, pasteurization destroys the organism but not the toxin.
BOTULISM (Intoxication)	Toxins	2 hours to 6 days, usually 12-36 hours Nausea, vomiting, and diarrhea may appear early. Headache, dizziness, lassitude, double vision, loss of reflex to light, weakness, difficulty in swallowing, constipation, respiratory distress, respiratory paralysis. Partial paralysis may persist for 6-8 months. Sensorium is usually clear. Case fatality rate: 50-65% fatal in 3-10 days.	Improperly canned low acid foods, smoked vacuum-packed fish, fermented foods.	Heat cans at high temperatures under pressure for sufficient time, cook home canned foods thoroughly (boil and stir for 15 minutes), acidify, keep foods refrigerated, cure in sufficient concentration of salt. Bivalent A-B and monovalent A, B, and E antitoxins and polyvalent A-B-E and A-B-E-F (unlicensed) are available.

Food Intoxication: Disease caused by the toxins (poisons) which some bacteria release in food, or by poisonous chemicals.

Food Infection:

Disease caused by organisms which invade the body through food and increase to large numbers.

Classification of Illnesses Attributable to Foods Chemical

ILLNESS	CAUSATIVE AGENT	INCUBATION PERIOD AND SYMPTOMS	FOODS INVOLVED	CONTROL MEASURES
ZINC POISONING	Galvanized ware	10 minutes-3 hours Pain in mouth, throat and abdomen; nausea, vomiting, dizziness, collapse.	Lemonade, cooked apples, mashed potatoes, spinach, chicken, and tomatoes, fruit punch.	Avoid using galvanized containers for storing and cooking acid food and drink.
CADMIUM POISONING	Plating metal	15-30 minutes Nausea, vomiting, cramps, diarrhea, retching, shock. Headache, vertigo, sensory disturbances in hands and arms, convulsions, and prostration reported in severe cases.	Lemonade, punch, fruit gelatin, dessert, Popsicles.	Avoid using cadmium-plated containers for storing or cooking acid foods.
COPPER POISONING	Copper food-contact surfaces	Few minutes to 8 hours. Metallic taste, nausea, vomiting, diarrhea, abdominal pain. Vomitus is often green.	Carbonated beverages, acid foods.	Avoid using copper pipes and containers in contact with acid foods and drink. Prohibit use of copper decorations on cakes.
LEAD POISONING	Pesticides	30 minutes or longer. Metallic taste, burning of pharynx, abdominal pain, vomiting (milky), diarrhea (stools may be bloody or black) or constipation, foul breath, salivation, headache, shock, weakness, general aching and stiffness, insomnia, vertigo, anemia, blue lines where teeth meet gums.	Acid fruits, maple syrup, beer, cider, vinegar, sardines, ice, moonshine whiskey.	Avoid using lead containers in contact with foods for distillation.
ORGANIC PHOSPHOROUS POISONING	Organic phosphorous insecticides DDVP, DVP, diazinon, malathion, parathion, TEPP, and others	Few minutes-8 hours Nausea, vomiting, abdominal cramps, diarrhea, excessive salivation, headache, giddiness, nervousness, blurred vision, weakness, chest pains, tearing, respiratory tract secretions, cyanosis, papilledema, confusion, uncontrollable muscle twitching, convulsions, coma, loss of reflexes and sphincter control.	Parathion: bread, pastry, cereal, sugar. Carbophenothion: tortillas, diazonon: mistaken for wine. Any food accidentally contaminated with these insecticides.	Avoid spraying just before harvest. Store in an area separate from foods. Patients respond to atropine sulfate.
CHLORINATED HYDROCARBON POISONING	Chlorinated hydrocarbon insecticides aldrin, chlordane, DDE (DDD), DDT, dieldrin, endrin, heptachlor, lindane, toxophene, others.	½-8 hours. Nausea, vomiting, paresthesia of tongue, lip, part of face and extremities. Apprehension, disturbance of equilibrium, dizziness, confusion, muscular weakness, anorexia, weight loss. Inhaled vapor of Lindane: Severe headache, nausea, and irritation of eyes, nose, and throat.	BHC: Grain. Toxaphene: Leafy vegetables. Any food accidentally contaminated with insecticides.	Store in an area separate from food. Avoid spraying just before harvest. Wash or blanch foods. Avoid use of DDT. Avoid use of Lindane vaporizers.