

Food Hazards Chart

As a Manager, these are the threats to food safety of which you will need to be aware

Hazard	What is it?	Where is it found?	How is the illness contracted?	What are the dangers/symptoms?	When do symptoms appear?	How long do symptoms last?	How can it be avoided?
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Physical Hazards

Objects that can cause injury, illness, or choking if eaten, due to the size, shape, or hardness of the object

Sharp objects	Any sharp or pointed object that can cause injury or illness if eaten	Naturally or unnaturally in foods	Consuming objects such as bones; crustacean shells; fruit pits; seeds; packaging; fingernails; fragments of glass, metal, wood,	Injury, illness, even death	Immediately in most cases, though it can take longer	Dependent on severity	Being aware of possible physical hazards and preventing them from contaminating foods
Hard objects	Any hard object that can cause injury or illness if eaten						
Choking hazards	Any object that can easily lodge in the throat if eaten						

Chemical Hazards

Substances with chemical properties that can cause injury or illness when consumed in or with food

NATURALLY OCCURRING TOXINS

Harmful toxins that occur naturally in food

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Mushroom toxins	Toxins that occur naturally in some mushrooms	Some species of mushrooms	Consuming toxic mushrooms, whether raw or cooked	Illnesses range from relatively mild to quite serious--even fatal	6 hours - 2 days (6-15 hours average)	6 to 8 days	Ordering food through an approved provider
Plant toxins	Toxins that occur naturally in various parts of some plants	Fool's Parsley; rhubarb leaves; seeds and/or leaves of some fruit trees, including apples, cherries, and apricots; vines and leaves of tomato and potato plants; raw or undercooked kidney beans; etc.	Consuming toxic plant material	Illnesses range from relatively mild to quite serious--even fatal	Varies	2 weeks - 2 years	Ordering through an approved provider; preparing food properly; preventing plants that contain these toxins from contaminating foods

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FISH TOXINS
 Toxins commonly contained in fish that can cause serious illness

Scombrototoxin	Toxin that forms when an enzyme produced by certain bacteria reacts with a chemical commonly found in some fish and	Some fish, cheeses, and other foods that have spoiled (most commonly fish of the family Scombridae, which includes mackerels, tunas, and	Eating food containing high levels of	Scombroid poisoning	Immediately or up to 30	3 hours - several days	Practicing proper time and temperature control
Ciguatoxin	Toxin produced by certain algae	Tropical reef-fish that live in waters where the algae grow, including groupers, barracudas,	Consuming toxin-contaminated tropical reef-fish	Ciguatera poisoning	2 hours (gastrointestinal effects) - 6 hours (neurological effects)	A few days	Ordering food through an approved provider
Tetrodotoxin	Toxin produced naturally by puffer fish as a defense mechanism	Puffer fish organs	Consuming toxin-contaminated puffer fish	Various symptoms including respiratory failure and death	Immediately	20 minutes - 8 hours	Ordering food through an approved provider

SHELLFISH TOXINS
 Toxins that are passed on to shellfish through toxin-producing algae

Saxitoxin	Toxin produced by some algae	Shellfish	Consuming toxin-infected shellfish	Paralytic Shellfish Poisoning (PSP): numbness, tingling, dizziness, headache, gastrointestinal distress (nausea, vomiting, diarrhea), paralysis, and death	Immediately or up to several hours	2 days - 2 weeks	Ordering food through an approved provider
Brevetoxin	Toxin produced by some algae	Shellfish	Consuming toxin-infected shellfish	Neurotoxic Shellfish Poisoning (NSP): gastrointestinal distress, sensory changes such as dizziness, headache, numbness, tingling, and a reversal in sensing hot and cold temperatures	Immediately or up to several hours	1-3 days	Ordering food through an approved provider
Domoic acid	Toxin produced by some algae	Shellfish	Consuming toxin-infected shellfish	Amnesic Shellfish Poisoning (ASP): neurological effects such as memory loss, confusion, and disorientation; gastrointestinal distress, seizures, coma, and death	Gastrointestinal distress within 24 hours, neurological symptoms within 48 hours	48 hours; loss of short-term memory can be	Ordering food through an approved provider

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Okadaic acid	Toxin produced by some algae	Shellfish	Consuming toxin-infected shellfish	Diarrhetic Shellfish Poisoning (DSP): minor gastrointestinal symptoms	30 minutes - a few hours	A few days	Ordering food through an approved provider

ENVIRONMENTAL CONTAMINANTS

Environmental contaminants	Harmful chemicals that contaminate food during the growth and production of the food's ingredients, including pesticides, fungicides, insecticides, fertilizers, antibiotics, growth hormones, and various land and water	Foods grown in polluted environments or treated with unapproved or potentially harmful chemicals	Consuming foods that contain environmental	Poisoning or cancer		Dependent upon exposure and	Ordering food through an approved provider
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TOXIC METALS
 Metals that can cause illness if consumed

Mercury	A toxic metal that is often found in fish	Fish	Regularly eating fish that contain high levels of mercury	Mercury poisoning, skin disorders, impaired senses,	Dependent upon exposure and age		Not eating too much fish of varieties that typically contain high levels of mercury
Copper	Micronutrient that can become toxic in excessive amounts	Cookware	Consuming excessive amounts of copper	Liver problems and death			Using proper cookware
Lead	Metal frequently found in food facilities	Crystal drinking vessels, china, ceramics, paint, and pewter vessels	Consuming food contaminated with lead	Effects vary widely based on the level and duration of exposure, but can range from abdominal pain and headache to seizures, coma, and death			Using proper cookware

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PRESERVATIVES AND FOOD ADDITIVES

Chemicals intentionally added to food in order to modify the food's natural shelf-life, flavor, color, nutritional value, or other properties; safe in small doses, unless hypersensitive to them

Sulfiting agents	Preservative added to food in order to increase its shelf-life and limit fungal growth and spoilage	Alcoholic beverages, imported seafood, and other processed foods	Consuming an excessive amount of food treated with sulfiting agents, especially if hypersensitive to them	Allergic reaction	Within 5	15-30 minutes	Ordering food through an approved provider; checking ingredients on food labels
Nitrates	Preservative added to food in order to increase its shelf-life and limit fungal growth and spoilage	Cured meats	Consuming an excessive amount of foods treated with nitrates, especially if hypersensitive to them	Methemoglobinemia, which causes respiratory, cardiologic, circulatory, and neurological problems, and possibly cancer	Dependent upon exposure and age		Ordering food through an approved provider; checking ingredients on food labels

CLEANING AND MAINTENANCE SUPPLIES

Cleaning and maintenance supplies	Chemicals used for cleaning or maintenance including cleaners, sanitizers, machine lubricants, paints, etc.	In the food service establishment	Ingesting foods contaminated with these chemicals	Illness, injury, or death	Dependent upon exposure and		Avoiding cross-contamination
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BIOLOGICAL HAZARDS
 Microscopic organisms that cause foodborne illness (aka "foodborne pathogens")

BACTERIA
 Tiny, single-celled microorganisms that are almost everywhere around us all the time

Salmonella	A class of bacteria naturally present in the intestinal tracts and feces of animals, particularly poultry	Poultry	Consuming foods contaminated with salmonella	Salmonellosis, which causes diarrhea, abdominal cramps, and fever; salmonella typhi, which causes	6 hours - 2 days	4-7 days	Properly cooking food and avoiding any cross-contamination
Escherichia coli (e. coli)	A class of bacteria naturally present in the intestinal tracts and feces of animals, particularly cattle	Beef, milk, and produce	Consuming foods contaminated with E. coli	E. coli poisoning, which includes abdominal cramps, vomiting, and mild fever; severe diarrhea (usually bloody); and Hemolytic Uremic Syndrome (HUS), a kidney defect	1-8 days	5-10 days	Properly cooking food and avoiding any cross-contamination
Shigella	Potent pathogen present in human feces	Food contaminated with shigella-infected human feces	Consuming foods contaminated with shigella	Shigellosis, which includes diarrhea (containing blood, mucus, or pus), stomach cramping, and vomiting	4-7 days	1 day - 1 week	Properly cooking food and avoiding any cross-contamination
Campylobacter	A strain of bacteria naturally found in the intestinal tracts of animals, especially poultry	Food contaminated with campylobacter-infected animal feces	Consuming foods contaminated with campylobacter	Campylobacteriosis, which includes fever, cramps, diarrhea, and in severe cases urinary tract infections, meningitis, or Guillain-Barre	2-5 days	2-10 days	Properly cooking food and avoiding any cross-contamination
Listeria monocytogenes	A bacterial pathogen	Raw meat and meat products, soft cheeses, deli meats, hot dogs, sausages, deli salads, and melons, particularly cantaloupe	Consuming foods contaminated with listeria	Listeriosis, which causes septicemia, meningitis, and miscarriage	9 hours - 2 days for gastrointestinal symptoms; 2-6 weeks for invasive disease	Varies	Properly cooking food and avoiding any cross-contamination



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BACTERIA CONT.

Tiny, single-celled microorganisms that are almost everywhere around us all the time

Vibrio	A genus of bacteria commonly found in salt water	Seafood, especially raw or undercooked	Eating vibrio-infected seafood	Vibrio gastroenteritis or, in severe cases, cholera	4 hours - 4 days	2-5 days	Properly cooking food and avoiding any cross-contamination
Yersinia enterocolitica	A species of bacteria that is naturally found in the intestinal tract of animals, especially pigs	Pork and pork products, especially chitterlings	Eating yersinia-infected	Yersiniosis, which includes abdominal pain, fever, and bloody	1-2 days	1-2 days on average; up to 3 weeks	Properly cook food and avoid any cross-contamination
Clostridium perfringens	A pathogen that creates a harmful toxin in foods not held at safe temperatures	Meats, meat products, and gravies	Consuming foods that contain high amounts of Clostridium	Severe abdominal pain and diarrhea	8-22 hours	1 day - 2 weeks	Properly cooking food and avoiding any cross-contamination
Clostridium botulinum	Bacteria commonly found in water and soil that produces	Foods that provide a low-oxygen environment, such as damaged or improperly packaged foods (often indicated by bulging)	Consuming foods infected with botulism neurotoxins	Botulism, which includes nausea, vomiting, weakness, double vision, difficulty in speaking and swallowing, and, if left untreated, death	12 hours - 3 days	Varies	Discarding bulging or dented canned food; properly cooking food
Staphylococcus aureus (staph)	A type of bacteria, existing in 30-50% of human noses, that produces a heat-resistant toxin	Egg, tuna, chicken, macaroni salads, and deli meats	Consuming foods infected with staph	Nausea, vomiting or retching, and abdominal cramps	1-6 hours	1-2 days	Properly caring for wounds; practicing proper hygiene
Bacillus cereus	A class of bacteria capable of surviving harsh conditions and commonly found in the soil	Cooked meat products, vegetables, and milk	Eating foods contaminated with Bacillus cereus	Vomiting illness, including nausea and vomiting; diarrheal illness, including watery diarrhea, abdominal pain, and nausea	30 minutes - 6 hours for vomiting illness; 6-15 hours for diarrheal illness	1-2 days	Ordering food through an approved provider

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VIRUSES
Microscopic structures containing genetic material that replicate inside the cells of a living host organism

Hepatitis A (HAV)	A virus that travels from person to person, usually using food or water as a vector	Food contaminated with HAV-infected human feces	Eating food contaminated with HAV	Fatigue, fever, nausea, abdominal pain, diarrhea, and jaundice	2 weeks - 2 months (1 month average)	2 weeks - 3 months	Practicing proper hygiene habits like washing hands and
Norovirus	A highly-contagious virus	Food contaminated with Norovirus-infected human feces	Eating food contaminated with Norovirus	Nausea, abdominal pain, vomiting, and	12 hours - 2 days	12 hours - 3 days	Practicing proper hygiene habits like washing hands and
Rotavirus	A highly-contagious virus	Food contaminated with Rotavirus-infected human feces	Eating food contaminated with Rotavirus	Nausea, abdominal pain, vomiting, severe diarrhea, and, if left untreated,	2 days	3-8 days	Practicing proper hygiene habits like washing hands and

PARASITES
Organisms that have adapted to living inside a host body, and can cause illness; they often spread through food or water

Anisakis simplex	A type of roundworm, commonly known as the herring worm, that enters human hosts through the	Raw or undercooked seafood	Eating Anisakis-infected foods	Anisakiasis, including nausea and abdominal pain, and in some cases, coughing up worms; surgery may be required to remove the worms	A few hours - more than a week	Until the worms are removed, either surgically or naturally; usually resolves	Ordering food through an approved provider
Giardia	Microscopic parasite that is transmitted via the fecal-oral route	Unfiltered, untreated water from wells, streams, and other sources; seafood harvested from contaminated water; or fruits or vegetables that were washed in contaminated water	Drinking or ingesting Giardia-infected	Giardiasis which includes gradual, sustained weight loss, diarrhea, cramps, and greasy, floating stool; with children, Giardiasis can stunt growth and physical	1-2 weeks	2-6 weeks	Avoiding untreated water; practicing proper
Cryptosporidium (crypto)	A parasite similar to Giardia that is often found in water contaminated with fecal	Water contaminated with fecal matter	Ingesting cryptosporidium-infected water	Cryptosporidiosis (or crypto), which includes watery diarrhea, dehydration, nausea, vomiting, fever, and weight loss	2-10 days	3-4 days on average; up to 2 weeks	Avoiding untreated water; practicing proper
Toxoplasma gondii	Parasite transmitted to humans through food, often due to contamination by cats or rodents	Cats, rodents, and undercooked meat and meat products	Eating food infected with Toxoplasma gondii	Toxoplasmosis, which causes flu-like symptoms, or, in severe cases, eye damage and death	1 week - 1	Up to several weeks, depending upon the health of the infected	Avoiding contamination by animals and pests; properly cooking food

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FUNGI
 Organisms that often play a role in spoiling foods (though some varieties are edible)

Molds	Types of fungi that often cause spoilage; some varieties also create harmful mycotoxins	Cured meats like ham, salami, and bacon; jams and jellies	Consuming food contaminated with mold If allergic	Nausea and vomiting; allergic reactions in those who are allergic; mycotoxins can cause much more severe symptoms	Dependent upon amount eaten, presence of mycotoxins, allergies, and		Practicing proper time and temperature control; discarding moldy food
Yeasts	Types of fungi often used in the creation of foods, but that can also cause spoilage	Carbohydrate-rich items that are completely or partially liquid	Consuming foods with high levels of	Nausea and vomiting; allergic reactions in those who are allergic	Dependent upon amount eaten, allergies, and other factors		Practicing proper time and temperature control; discarding spoiled food

FOOD ALLERGENS
 Biological trait that causes immune systems to react negatively with certain proteins in food

Food allergens	Biological trait that causes immune systems to react negatively with certain proteins in food	A variety of foods, especially milk, eggs, fish and shellfish, wheat, soy and soy products, peanuts, and tree nuts like almonds, pecans, and walnuts	Consuming allergenic foods when hypersensitive to them	Various symptoms ranging from mildly annoying to fatal, including swelling and irritation, difficulty breathing, itchy sensation, or hives	Immediately or up to a few hours	Varies	Knowing common allergenic foods and avoiding cross-contact
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SOURCES
www.biosignlabs.com www.cdc.gov www.doh.wa.gov www.drcordas.com www.fda.gov www.who.edu