

Diagnosis and Management of Foodborne Illnesses

A Primer for Physicians and
Other Health Care Professionals

Foodborne Illnesses Table: Non-infectious Agents

American Medical Association
American Nurses Association-American Nurses Foundation
Centers for Disease Control and Prevention
Center for Food Safety and Applied Nutrition
Food and Drug Administration
Food Safety and Inspection Service,
US Department of Agriculture

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Foodborne Illnesses (Non-infectious)

Etiology	Incubation Period	Signs and Symptoms	Duration of Illness	Associated Foods	Laboratory Testing	Treatment
Antimony	5 min-8 hrs. usually <1 hr	Vomiting, metallic taste.	Usually self-limited	Metallic container.	Identification of metal in beverage or food.	Supportive care.
Arsenic	Few hrs	Vomiting, colic, diarrhea.	Several days	Contaminated food.	Urine. May cause eosinophilia.	Gastric lavage, BAL (dimercaprol).
Cadmium	5 min-8 hrs. usually <1 hr	Nausea, vomiting, myalgia, increase in salivation, stomach pain.	Usually self-limited	Seafood, oysters, clams, lobster, grains, peanuts.	Identification of metal in food.	Supportive care.
Ciguatera fish poisoning (ciguatera toxin).	2-6 hrs	<u>GI</u> : abdominal pain, nausea, vomiting, diarrhea.	Days to weeks to months	A variety of large reef fish. Grouper, red snapper, amberjack, and barracuda (most common).	Radioassay for toxin in fish or a consistent history.	Supportive care, IV mannitol. Children more vulnerable.
	3 hrs	<u>Neurologic</u> : paresthesias, reversal of hot or cold, pain, weakness.				
	2-5 days	<u>Cardiovascular</u> : bradycardia, hypotension, increase in T wave abnormalities.				
Copper	5 min-8 hrs. usually <1 hr	Nausea, vomiting, blue or green vomitus.	Usually self-limited	Metallic container.	Identification of metal in beverage or food.	Supportive care.
Mercury	1 week or longer	Numbness, weakness of legs, spastic paralysis, impaired vision, blindness, coma. Pregnant women and the developing fetus are especially vulnerable.	May be protracted	Fish exposed to organic mercury, grains treated with mercury fungicides.	Analysis of blood, hair.	Supportive care.
Mushroom toxins, short-acting (muscenol, muscarine, psilocybin, coprius artemetaris, ibotenic acid)	<2 hrs	Vomiting, diarrhea, confusion, visual disturbance, salivation, diaphoresis, hallucinations, disulfiram-like reaction, confusion, visual disturbance.	Self-limited	Wild mushrooms (cooking may not destroy these toxins).	Typical syndrome and mushroom identified or demonstration of the toxin.	Supportive care.
Mushroom toxin, long-acting (amanitin)	4-8 hrs diarrhea; 24-48 hrs liver failure	Diarrhea, abdominal cramps, leading to hepatic and renal failure.	Often fatal	Mushrooms.	Typical syndrome and mushroom identified and/or demonstration of the toxin.	Supportive care; life-threatening, may need life support.
Nitrite poisoning	1-2 hrs	Nausea, vomiting, cyanosis, headache, dizziness, weakness, loss of consciousness, chocolate-brown colored blood.	Usually self-limited	Cured meats, any contaminated foods, spinach exposed to excessive nitrification.	Analysis of the food, blood.	Supportive care, methylene blue.
Pesticides (organophosphates or carbamates)	Few min to few hrs	Nausea, vomiting, abdominal cramps, diarrhea, headache, nervousness, blurred vision, twitching, convulsions, salivation and meiosis	Usually self-limited	Any contaminated food.	Analysis of the food, blood.	Atropine; 2-PAM (Pralidoxime) is used when atropine is not able to control symptoms and is rarely necessary in carbamate poisoning.
Puffer fish (tetrodotoxin)	<30 min	Paresthesias, vomiting, diarrhea, abdominal pain, ascending paralysis, respiratory failure.	Death usually in 4-6 hrs	Puffer fish.	Detection of tetrodotoxin in fish.	Life-threatening, may need respiratory support.
Scombroid (histamine)	1 min-3 hrs	Flushing, rash, burning sensation of skin, mouth and throat, dizziness, urticaria, paresthesias.	3-6 hrs	<u>Fish</u> : bluefin, tuna, skipjack, mackerel, marlin, escolar and mahi mahi.	Demonstration of histamine in food or clinical diagnosis.	Supportive care, antihistamines.
Shellfish toxins (diarrheic, neurotoxic, amnesic)	Diarrheic shellfish poisoning (DSP) – 30 min to 2 hrs	Nausea, vomiting, diarrhea, and abdominal pain accompanied by chills, headache, and fever.	Hrs to 2-3 days	A variety of shellfish, primarily mussels, oysters, scallops, and shellfish from the Florida coast and the Gulf of Mexico.	Detection of the toxin in shellfish; high-pressure liquid chromatography.	Supportive care, generally self-limiting. Elderly are especially sensitive to ASP.
	Neurotoxic shellfish poisoning (NSP) – few min to hrs	Tingling and numbness of lips, tongue, and throat, muscular aches, dizziness, reversal of the sensations of hot and cold, diarrhea, and vomiting.				
	Amnesic shellfish poisoning (ASP) – 24-48 hrs	Vomiting, diarrhea, abdominal pain and neurological problems such as confusion, memory loss, disorientation, seizure, coma.				
Shellfish toxins (paralytic shellfish poisoning)	30 min-3 hrs	Diarrhea, nausea, vomiting leading to paresthesias of mouth, lips, weakness, dysphasia, dysphonia, respiratory paralysis.	Days	Scallops, mussels, clams, cockles.	Detection of toxin in food or water where fish are located; high-pressure liquid chromatography.	Life-threatening, may need respiratory support.
Sodium fluoride	Few min to 2 hrs	Salty or soapy taste, numbness of mouth, vomiting, diarrhea, dilated pupils, spasms, pallor, shock, collapse.	Usually self-limited	Dry foods (such as dry milk, flour, baking powder, cake mixes) contaminated with sodium fluoride-containing insecticides and rodenticides.	Testing of vomitus or gastric washings. Analysis of the food.	Supportive care.
Thallium	Few hrs	Nausea, vomiting, diarrhea, painful paresthesias, motor polyneuropathy, hair loss.	Several days	Contaminated food.	Urine, hair.	Supportive care.
Tin	5 min-8 hrs. usually <1 hr	Nausea, vomiting, diarrhea.	Usually self-limited	Metallic container.	Analysis of the food.	Supportive care.
Vomitoxin	Few min to 3 hrs	Nausea, headache, abdominal pain, vomiting.	Usually self-limited	Grains such as wheat, corn, barley.	Analysis of the food.	Supportive care.
Zinc	Few hrs	Stomach cramps, nausea, vomiting, diarrhea, myalgias.	Usually self-limited	Metallic container.	Analysis of the food, blood and feces, saliva or urine.	Supportive care.

Please call the state health department for more information on specific foodborne illnesses. These telephone numbers are available at: <http://www.cdc.gov/mmwr/international/relres.html>.

See the reverse side for information hotlines and list of notifiable diseases.

Foodborne Diseases and Conditions Designated as Notifiable at the National Level – United States 2003

In the United States, requirements for reporting diseases and conditions are mandated by state and territorial laws and/or regulations. However, physicians are highly encouraged to report foodborne illness that they may encounter in the event that an outbreak situation may be present. Reporting will facilitate the tracking of the outbreak and in fact, the case identified may even be the sentinel case!

Differences exist between states and territories as to which diseases and conditions are reportable. The Council of State and Territorial Epidemiologists (CSTE) and the Centers for Disease Control and Prevention (CDC) collaborate on which diseases and conditions are designated as nationally notifiable. Details on specific state requirements are located at www.cste.org/nndss/reportingrequirements.htm. This information is also available by contacting CSTE at:

The Council of State and Territorial Epidemiologists (CSTE)
Suite 303 – 2872 Woodcock Boulevard
Atlanta, Georgia 30341
Phone: 770 458-3811

Notifiable Bacterial Foodborne Diseases and Conditions

Anthrax

Botulism

Brucellosis

Cholera

Enterohemorrhagic *Escherichia coli*

Hemolytic uremic syndrome, post-diarrheal

Listeriosis

Salmonellosis (other than *S. Typhi*)

Shigellosis

Typhoid fever (*S. Typhi* and *S. Paratyphi* infections)

Notifiable Viral Foodborne Diseases and Conditions

Hepatitis A

Notifiable Parasitic Foodborne Diseases and Conditions

Cryptosporidiosis

Cyclosporiasis

Giardiasis

Trichinellosis

References

Council of State and Territorial Epidemiologists. Available at:
www.cste.org/nndss/reportingrequirements.htm

Centers for Disease Control and Prevention. Available at
www.cdc.gov/epo/dphsi/phs/infdis2003.htm

Toll-free Information Phone Numbers

USDA Meat and Poultry Hotline: 800 535-4555

FDA Safe Food Hotline: 888 SAFE-FOOD (723-3366)

CDC Voice Information System: 888 CDC-FAXX (232-3299)