

U.S. Food & Drug Administration
Center for Food Safety & Applied Nutrition
**Foodborne Pathogenic Microorganisms
and Natural Toxins Handbook**

Onset, Duration, and Symptoms of Foodborne Illness

Approximate onset time to symptoms	Predominant symptoms	Associated organism or toxin
Upper gastrointestinal tract symptoms (nausea, vomiting) occur first or predominate		
Less than 1 h	Nausea, vomiting, unusual taste, burning of mouth.	Metallic salts
1-2 h	Nausea, vomiting, cyanosis, headache, dizziness, dyspnea, trembling, weakness, loss of consciousness.	Nitrites
1-6 h mean 2-4 h	Nausea, vomiting, retching, diarrhea, abdominal pain, prostration.	<i>Staphylococcus aureus</i> and its enterotoxins
8-16 h (2-4 h emesis possible)	Vomiting, abdominal cramps, diarrhea, nausea.	<i>Bacillus cereus</i>
6-24 h	Nausea, vomiting, diarrhea, thirst, dilation of pupils, collapse, coma.	Amanita species mushrooms
Sore throat and respiratory symptoms occur		
12-72 h	Sore throat, fever, nausea, vomiting, rhinorrhea, sometimes a rash.	<i>Streptococcus pyogenes</i>
2-5 days	Inflamed throat and nose, spreading grayish exudate, fever, chills, sore throat, malaise, difficulty in swallowing, edema of cervical lymph node.	<i>Corynebacterium diphtheriae</i>
Lower gastrointestinal tract symptoms (abdominal cramps, diarrhea) occur first or predominate		
2-36 h, mean 6-12	Abdominal cramps, diarrhea,	<i>Clostridium perfringens</i> , <i>Bacillus</i>

h	putrefactive diarrhea associated with <i>C. perfringens</i> , sometimes nausea and vomiting.	<i>Cereus</i> , <i>Streptococcus faecalis</i> , <i>S. faecium</i>
12-74 h, mean 18-36 h	Abdominal cramps, diarrhea, vomiting, fever, chills, malaise, nausea, headache, possible. Sometimes bloody or mucoid diarrhea, cutaneous lesions associated with <i>V. vulnificus</i> . <i>Yersinia enterocolitica</i> mimics flu and acute appendicitis.	<i>Salmonella</i> species (including <i>S. arizonae</i>), <i>Shigella</i> , enteropathogenic <i>Escherichia coli</i> , other <i>Enterobacteriaceae</i> , <i>Vibrio parahaemolyticus</i> , <i>Yersinia enterocolitica</i> , <i>Pseudomonas aeruginosa</i> (?), <i>Aeromonas hydrophila</i> , <i>Plesiomonas shigelloides</i> , <i>Campylobacter jejuni</i> , <i>Vibrio cholerae</i> (O1 and non-O1) <i>V. vulnificus</i> , <i>V. fluvialis</i>
3-5 days	Diarrhea, fever, vomiting abdominal pain, respiratory symptoms.	Enteric viruses
1-6 weeks	Mucoid diarrhea (fatty stools) abdominal pain, weight loss.	<i>Giardia lamblia</i>
1 to several weeks	Abdominal pain, diarrhea, constipation, headache, drowsiness, ulcers, variable -- often asymptomatic.	<i>Entamoeba histolytica</i>
3-6 months	Nervousness, insomnia, hunger pains, anorexia, weight loss, abdominal pain, sometimes gastroenteritis.	<i>Taenia saginata</i> , <i>T. solium</i>
Neurological symptoms (visual disturbances, vertigo, tingling, paralysis) occur		
Less than 1 h	*** SEE GASTROINTESTINAL AND/OR NEUROLOGIC SYMPTOMS (Shellfish Toxins) (this Appendix)	Shellfish toxin
	Gastroenteritis, nervousness, blurred vision, chest pain, cyanosis, twitching, convulsions.	Organic phosphate
	Excessive salivation, perspiration, gastroenteritis, irregular pulse, pupils constricted, asthmatic breathing.	Muscaria-type mushrooms

	Tingling and numbness, dizziness, pallor, gastro- hemorrhage, and desquamation of skin, fixed eyes, loss of reflexes, twitching, paralysis.	Tetradon (tetrodotoxin) toxins
1-6 h	Tingling and numbness, gastroenteritis, dizziness, dry mouth, muscular aches, dilated pupils, blurred vision, paralysis.	Ciguatera toxin
	Nausea, vomiting, tingling, dizziness, weakness, anorexia, weight loss, confusion.	Chlorinated hydrocarbons
2 h to 6 days, usually 12-36 h	Vertigo, double or blurred vision, loss of reflex to light, difficulty in swallowing. speaking, and breathing, dry mouth, weakness, respiratory paralysis.	Clostridium botulinum and its neurotoxins
More than 72 h	Numbness, weakness of legs, spastic paralysis, impairment of vision, blindness, coma.	Organic mercury
	Gastroenteritis, leg pain, ungainly high-stepping gait, foot and wrist drop.	Triorthocresyl phosphate
Allergic symptoms (facial flushing, itching) occur		
Less than 1 h	Headache, dizziness, nausea, vomiting, peppery taste, burning of throat, facial swelling and flushing, stomach pain, itching of skin.	Histamine (scombroid)
	Numbness around mouth, tingling sensation, flushing, dizziness, headache, nausea.	Monosodium glutamate
	Flushing, sensation of warmth, itching, abdominal pain, puffing of face and knees.	Nicotinic acid
Generalized infection symptoms (fever, chills, malaise, prostration, aches, swollen lymph nodes) occur		
4-28 days, mean	Gastroenteritis, fever, edema about	<i>Trichinella spiralis</i>

9 days	eyes, perspiration, muscular pain, chills, prostration, labored breathing.	
7-28 days, mean 14 days	Malaise, headache, fever, cough, nausea, vomiting, constipation, abdominal pain, chills, rose spots, bloody stools.	<i>Salmonella typhi</i>
10-13 days	Fever, headache, myalgia, rash.	<i>Toxoplasma gondii</i>
10-50 days, mean 25-30 days	Fever, malaise, lassitude, anorexia, nausea, abdominal pain, jaundice.	Etiological agent not yet isolated -- probably viral
Varying periods (depends on specific illness)	Fever, chills, head- or joint ache, prostration, malaise, swollen lymph nodes, and other specific symptoms of disease in question.	<i>Bacillus anthracis</i> , <i>Brucella melitensis</i> , <i>B. abortus</i> , <i>B. suis</i> , <i>Coxiella burnetii</i> , <i>Francisella tularensis</i> , <i>Listeria monocytogenes</i> , <i>Mycobacterium tuberculosis</i> , <i>Mycobacterium</i> species, <i>Pasteurella multocida</i> , <i>Streptobacillus moniliformis</i> , <i>Campylobacter jejuni</i> , <i>Leptospira</i> species.
Gastrointestinal and/or Neurologic Symptoms - (Shellfish Toxins)		
0.5 to 2 h	Tingling, burning, numbness, drowsiness, incoherent speech, respiratory paralysis	Paralytic Shellfish Poisoning (PSP) (saxitoxins)
2-5 min to 3-4 h	Reversal of hot and cold sensation, tingling; numbness of lips, tongue & throat; muscle aches, dizziness, diarrhea, vomiting	Neurotoxic Shellfish Poisoning (NSP) (brevetoxins)
30 min to 2-3 h	Nausea, vomiting, diarrhea, abdominal pain, chills, fever	Diarrheic Shellfish Poisoning (DSP) (dinophys toxin, okadaic acid, pectenotoxin, yessotoxin)
24 h (gastrointestinal) to 48 h (neurologic)	Vomiting, diarrhea, abdominal pain, confusion, memory loss, disorientation, seizure, coma	Amnesic Shellfish Poisoning (ASP) (domoic acid)

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