

Diagnosis and Management of Foodborne Illnesses

A Primer for Physicians and
Other Health Care Professionals

Foodborne Illnesses Table: Parasitic 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 (Parasitic)

Etiology	Incubation Period	Signs and Symptoms	Duration of Illness	Associated Foods	Laboratory Testing	Treatment
<i>Angiostrongylus cantonensis</i>	1 week to ≥ 1 month	Severe headaches, nausea, vomiting, neck stiffness, paresthasias, hyperesthesias, seizures, and other neurologic abnormalities.	Several weeks to several months	Raw or undercooked intermediate hosts (eg, snails or slugs), infected paratenic (transport) hosts (eg, crabs, fresh water shrimp), fresh produce contaminated with intermediate or transport hosts.	Examination of CSF for elevated pressure, protein, leukocytes, and eosinophils; serologic testing using ELISA to detect antibodies to <i>Angiostrongylus cantonensis</i> .	Supportive care. Repeat lumbar punctures and use of corticosteroid therapy may be used for more severely ill patients.
<i>Cryptosporidium</i>	2-10 days	Diarrhea (usually watery), stomach cramps, upset stomach, slight fever.	May be remitting and relapsing over weeks to months	Any uncooked food or food contaminated by an ill food handler after cooking, drinking water.	Request specific examination of the stool for <i>Cryptosporidium</i> . May need to examine water or food.	Supportive care, self-limited. If severe consider paromomycin for 7 days. For children aged 1-11 years, consider nitazoxanide for 3 days.
<i>Cyclospora cayatanensis</i>	1-14 days, usually at least 1 week	Diarrhea (usually watery), loss of appetite, substantial loss of weight, stomach cramps, nausea, vomiting, fatigue.	May be remitting and relapsing over weeks to months	Various types of fresh produce (imported berries, lettuce).	Request specific examination of the stool for <i>Cyclospora</i> . May need to examine water or food.	TMP/SMX for 7 days.
<i>Entamoeba histolytica</i>	2-3 days to 1-4 weeks	Diarrhea (often bloody), frequent bowel movements, lower abdominal pain.	May be protracted (several weeks to several months)	Any uncooked food or food contaminated by an ill food handler after cooking, drinking water.	Examination of stool for cysts and parasites – may need at least 3 samples. Serology for long-term infections.	Metronidazole and a luminal agent (iodoquinol or paromomycin).
<i>Giardia lamblia</i>	1-2 weeks	Diarrhea, stomach cramps, gas.	Days to weeks	Any uncooked food or food contaminated by an ill food handler after cooking, drinking water.	Examination of stool for ova and parasites – may need at least 3 samples.	Metronidazole.
<i>Toxoplasma gondii</i>	5-23 days	Generally asymptomatic, 20% may develop cervical lymphadenopathy and/or a flu-like illness. <u>In immunocompromised patients</u> : central nervous system (CNS) disease, myocarditis, or pneumonitis is often seen.	Months	Accidental ingestion of contaminated substances (eg, soil contaminated with cat feces on fruits and vegetables), raw or partly cooked meat (especially pork, lamb, or venison).	Isolation of parasites from blood or other body fluids; observation of parasites in patient specimens via microscopy or histology. Detection of organisms is rare; serology (reference laboratory needed) can be a useful adjunct in diagnosing toxoplasmosis. However, IgM antibodies may persist for 6-18 months and thus may not necessarily indicate recent infection. PCR of bodily fluids. <u>For congenital infection</u> : isolation of <i>T. gondii</i> from placenta, umbilical cord, or infant blood. PCR of white blood cells, CSF, or amniotic fluid, or IgM and IgA serology, performed by a reference laboratory.	Asymptomatic healthy, but infected, persons do not require treatment. Spiramycin or pyrimethamine plus sulfadiazine may be used for pregnant women. Pyrimethamine plus sulfadiazine may be used for immunocompromised persons, in specific cases. Pyrimethamine plus sulfadiazine (with or without steroids) may be given for ocular disease when indicated. Folinic acid is given with pyrimethamine plus sulfadiazine to counteract bone marrow suppression.
<i>Toxoplasma gondii</i> (congenital infection)	In infants at birth	Treatment of the mother may reduce severity and/or incidence of congenital infection. Most infected infants have few symptoms at birth. Later, they will generally develop signs of congenital toxoplasmosis (mental retardation, severely impaired eyesight, cerebral palsy, seizures) unless the infection is treated.		Passed from mother (who acquired acute infection during pregnancy) to child.		
<i>Trichinella spiralis</i>	1-2 days for initial symptoms; others begin 2-8 weeks after infection	Acute: nausea, diarrhea, vomiting, fatigue, fever, abdominal discomfort followed by muscle soreness, weakness, and occasional cardiac and neurologic complications.	Months	Raw or undercooked contaminated meat, usually pork or wild game meat, eg, bear or moose.	Positive serology or demonstration of larvae via muscle biopsy. Increase in eosinophils.	Supportive care + mebendazole or albendazole.
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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)