

Occupational Health - Zoonotic Disease Fact Sheet

CRYPTOSPORIDIOSIS

KEY FACTS:

- Cryptosporidium is a microscopic protozoan parasite that causes the diarrheal disease cryptosporidiosis.
- Both the parasite and the disease are commonly known as "Crypto."
- This disease is one of the most common waterborne diseases in the world.

SPECIES: Ruminants, swine, rodents, birds (particularly turkeys and chickens), fish, reptiles, cats, dogs, rabbits, non-human primates, and humans (especially those who are young or immunocompromised) are all susceptible. Animals may serve as a reservoir leading to outbreaks of disease.

CAUSATIVE AGENT: Within the Genus *Cryptosporidium*, several species have been associated with human disease including *parvum*, *hominus*, *canis*, *felis*, *meleagridis*, and *muris*.

TRANSMISSION: The fecal-oral transmission route is the most common, especially via contaminated water. Direct transmission from animals to human or human to human can also occur. *Cryptosporidium* spreads through the production of infectious oocysts that are passed in the feces and later ingested by potential new hosts.

DISEASE IN ANIMALS: Severe watery diarrhea in neonatal calves and lambs may occur. In turkeys and chickens, the parasites are reported to occur in the sinuses, trachea, bronchi, cloaca, and bursa of Fabricius. The respiratory symptoms of the disease causes coughing, gasping, and airsacculitis. In reptiles, cryptosporidiosis is frequently reported in association with postprandial regurgitation. Additionally, the organism affects the GI mucosa, resulting in marked thickening of the rugae and loss of segmented motility.

DISEASE IN HUMANS: In healthy humans, infection varies from no symptoms to mild enteritis to marked watery diarrhea (up to 10 stools daily) without mucus or gross or microscopic blood. Additional symptoms may include low-grade fever, malaise, nausea, vomiting, abdominal cramps, anorexia, and weight loss. The infection is generally self-limiting and lasts a few days up to thirty days. In immunocompromised patients, the illness is characterized by profuse, cholera-like diarrhea, and by fever, severe malabsorption, weight loss, lymphadenopathy, and sometimes death.

DIAGNOSIS: Diagnosis is by detection of oocysts in stool by a variety of flotation or concentration methods or by mucosal biopsy, followed by special staining methods such as acid-fast staining or direct fluorescent antibody [DFA] (routine fecal staining methods do not detect the organisms). Molecular methods, such as PCR, are increasingly used in reference diagnostic labs. *Please review current literature before prescribing diagnostic testing as recommendations may have changed.*

TREATMENT: Supportive therapy with an emphasis on fluid intake to prevent dehydration is important. This disease will generally be self-limiting in healthy humans, while in immunocompromised patients complications may occur. *Please consult your physician for treatment as recommendations may have changed.*

PREVENTION/CONTROL: Personal hygiene is the best preventative measure for controlling this disease. To prevent and control unintended infections, use uninfected animals for research, and isolate any animals used in clinical trials. Additionally, only conduct projects in laboratories with proper engineering controls and train staff members in the proper use of required personal protective equipment when they are in spaces containing live agent.

More information on cryptosporidiosis can be found on the Centers for Disease Control and Prevention website at: <https://www.cdc.gov/parasites/crypto/>