

Cryptosporidium

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For this parasitic organism (cryptosporidium) provide the following information in a report of the disease and organism responsible.

Cryptosporidium parvum is a microscopic water-borne parasitic organism which causes the disease cryptosporidiosis in humans.

2. Type of vector(s) that spread the parasite, if there is one involved.

While the type of vectors that carry the cryptosporidium parasite has not been well established, recent research studies have pointed to certain potential vectors that could carry the oocytes of the parasite. Some of the possible vectors include invertebrate animals such as rotifers and nematodes, insects such as flies and beetles, freshwater and marine bivalve mollusks and the Atlantic blue crabs (Xiao).

3. Symptoms of the infection.

The organism begins its life cycle within the host after ingestion of the sporulated oocyte which is the resistant stage of *C. parvum* present in the environment. The division of the organism occurs rapidly with 12-14 hours being the time taken for one generation. This rapid division results in large accumulation of the organism within the intestinal tract of the hosts beginning with the ileum and followed by infection of the duodenum and the large intestine. In case of individuals with a suppressed immune system the organism can also colonize in the stomach, biliary and pancreatic ducts and respiratory tracts. The major clinical signs of cryptosporidiosis are watery diarrhea, loss of weight and cramping of the abdominal region, nausea, vomiting, anorexia and headache. Individual can also have a low-grade fever during the infection stage. In addition, immunocompromised individuals can also suffer from electrolyte imbalance. The time taken for the oocytes to be shed in the feces is about 4 days and they can be shed in the feces for 6-12

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days in case of healthy individuals and for a longer period in immunocompromised people (Aquatic pathogens).

4. Treatments

In the case of healthy individuals, the organism will generally disappear within a month of infection. In case there is severe diarrhea and dehydration anti-diarrheal drugs and rehydration therapy is given to patients. The treatment regimen for immunocompromised individuals could be more elaborate especially when the infection becomes chronic resulting in chronic diarrhea, dehydration, wasting and even death (Aquatic pathogens).

5. Methods used to control the spread of the organism if these exist.

As the disease is principally a water-borne disease, the parasite can exist in untreated water which is contaminated with the feces or other sources containing the organism. Proper water treatment methods undertaken by municipal and public water carriers can help to disinfect the water and kill the organism. As the organism is resistant to chlorine treatment, the watersheds can be protected through hygienic maintenance and proper coagulation and filtration methods. Use of ozone or UV radiations for water treatment can also provide additional protection against infection. At home, sub micron filters can be used to prevent the ingestion of the microbe in addition to boiling the water prior to consumption and use. Infectivity of the organism can also be destroyed when using 5-10% ammonium, 10% formaldehyde, freeze drying, exposure to temperatures below freezing point or above 65°F for 30 minutes (Aquatic pathogens).

6. List of references if you get information from sources other than the video

“ Aquatic pathogens” n. d. Web. 28 March 2015. [http://www. env. gov. bc. ca/wat/wq/reference/protozoans. html#tofc](http://www.env.gov.bc.ca/wat/wq/reference/protozoans.html#tofc)
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Xiao, Lihua. “ Overview of Cryptosporidium Presentations at the 10th International Workshops on Opportunistic Protists” *Eukaryotic Cell*, 8. 4 (2009) : 429-436. Print.