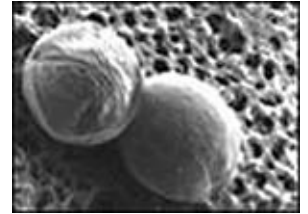


# CRYPTOSPORIDIUM

## What is Cryptosporidium?

Cryptosporidiosis is a severe diarrheal disease caused by a microscopic parasite, *Cryptosporidium parvum*, abbreviated *C. parvum*. It (*C. parvum*) lives in the intestinal tracts of people and a wide variety of animals, and is transmitted when people or animals ingest food or water that it has contaminated. *Cryptosporidium* is a protozoan parasite. (For information on protozoan parasites, please read "Protozoa" fact sheet).



## What are the symptoms and the incubation time?

The most common symptom of cryptosporidiosis is watery diarrhea. Other symptoms may include stomach cramps, nausea, vomiting, dehydration, low-grade fever (an oral temperature usually not higher than 37.8°C or a rectal temperature usually not higher than 38.4°C, with a normal temperature being about 37°C), fatigue, weakness and weight loss. Some people will remain asymptomatic (will not develop any symptoms) while infected. Symptoms may appear anytime from 2 to 10 days after infection, with the average being from four to six days.

## How long do the symptoms last?

The *C. parvum* infection is self-limiting and people with healthy immune systems are usually ill for one to two weeks before the infection begins to resolve. In immunocompromised patients (patients with weakened immune systems), symptoms are more severe and may last for several weeks with hospitalization being required. It is also possible for cryptosporidiosis to become chronic (long-lasting) and, in some cases, fatal. Those who are infected may shed *C. parvum* oocysts (the infectious parasite particles) in their feces for months, even after they no longer appear to be ill.

## How is it diagnosed?

Cryptosporidiosis cannot be diagnosed by its symptoms alone because watery diarrhea is a common symptom of many intestinal diseases. Several fecal samples over several days need to be tested for the presence of *C. parvum*. If *Cryptosporidium* is the suspected cause of intestinal illness, specific testing must be requested because testing for *Cryptosporidium* is not routinely done in most laboratories.

## Am I at severe risk for disease?

Infections are most common in young children and in immunocompromised patients. *Cryptosporidium* complications may occur in pregnant women and in people who suffer from diabetes or alcoholism. The effects of prolonged diarrhea and dehydration caused by cryptosporidiosis can be dangerous, especially for children, the elderly, and the frail. *Cryptosporidium* is most severe and long-lasting in immunocompromised individuals and may even be life-threatening in some cases.

## How is *Cryptosporidium* spread?

*Cryptosporidium* may be found in soil, food and water, or on surfaces that have been contaminated with the feces of infected humans or animals. Vegetable crops may be contaminated by the direct application of contaminated manure to the fields on which they are grown. *Cryptosporidium* is not spread by contact with blood, but can be spread by ingesting something (food, water) that has come into contact with the feces of an infected person or animal. It is also possible to become infected from recreational water (i.e. swimming pools, hot tubs, etc.) that has been contaminated with *Cryptosporidium* in the same manner.

## How can I prevent getting cryptosporidiosis?

The best ways to prevent getting sick with cryptosporidiosis are to practice good hygiene, avoid water and food that might be contaminated and avoid fecal exposure during sex. There are also many prevention methods that focus on the water supply.

## How do I prevent spreading it to others?

Cryptosporidiosis can be very contagious. You can prevent spreading it to others by washing your hands before preparing and eating food, and after going to the bathroom. It is also important to avoid swimming in recreational water if you have cryptosporidiosis and to wait for at least two weeks after diarrhea stops. Other swimmers are not even protected in chlorinated pools, because *Cryptosporidium* is chlorine resistant!

## What is the treatment for cryptosporidiosis?

There is currently no known treatment for cryptosporidiosis. People with healthy immune systems will recover on their own and appear to develop some immunity to subsequent infections. People infected with AIDS can undergo anti-retroviral therapy to reduce pathogen excretion and decrease diarrheal symptoms. Treatments for cryptosporidiosis are still being developed, so the best method of control is the method of prevention.

## How prevalent is *Cryptosporidium* in my water supply?

*Cryptosporidium* may be more prevalent in surface water than groundwater. Surface waters can be easily contaminated by sewage released from wastewater treatment plants, or by runoff from agricultural operations and city areas. Disinfection and filtration processes used in surface water treatment plants can remove *Cryptosporidium* most of the time, although marginal rural water treatment plants treating poor quality water are challenged to remove this parasite. Most disease outbreaks are from treatment plant breakdowns or rapid changes in the quality of raw water. These changes cannot be regulated by disinfection alone due to the chlorine-resistance of *Cryptosporidium*.



## Is my water safe? How can I tell?

Properly drilled and maintained wells that tap into groundwater are unlikely to contain large particles, such as *Cryptosporidium*, because of the natural filtration that takes place as water percolates down through the soil. Shallow or poorly constructed wells are at risk of being contaminated by surface water run-off that may contain disease-causing particles. Testing procedures are available for detecting *Cryptosporidium* in treated and untreated drinking water although they are very expensive and would normally be done on community water supplies only.

## What are some ways I can treat my water to ensure its safety?

Water treatment for the removal of *Cryptosporidium* relies on properly designed and operated filtration systems, usually consisting of several filters and point-of-use filtration devices should have a filter porosity of  $<1\mu\text{m}$ . If you are still unsure of your water's safety after it has been filtered, it is recommended that the water be brought to a rolling boil for at least one minute to kill any pathogens that may be present.