



Cryptosporidiosis

What is cryptosporidiosis?

An intestinal infection caused by a parasite (*Cryptosporidium hominis* or *Cryptosporidium parvum*)

What are the signs or symptoms?

- Acute watery diarrhea.
- Fever.
- Vomiting.
- Abdominal cramps.
- Fatigue.
- Lack of appetite.
- Many individuals are infected and infectious without signs or symptoms.
- Illness may last 1 to 20 days (average of 10 days) in normal children; can last much longer in immunocompromised children.

What are the incubation and contagious periods?

- Incubation period: 7 days is average but can vary from 3 to 14 days.
- Contagious period: Passage of the parasite in the stool can occur for 2 weeks after symptoms have resolved.

How is it spread?

- Fecal-oral route: Contact with feces of children who are infected. This generally involves an infected child contaminating their own fingers and then playing in communal water (during water play) or touching an object that another child touches. The child who has contact with the communal water or touched the contaminated surface then puts their fingers into their own mouth or another person's mouth. About 2% to 4% of children without symptoms in ECE settings pass *Cryptosporidium* oocysts (eggs; the infectious form of the parasite) in their stools.
- Most commonly spread through contaminated swimming or wading water or other water used for recreation by more than one person. Young children commonly let some fecal material escape into the water while they are playing. The largest outbreaks of waterborne disease occur in the summer months and involve children who are younger than 5 years. Contaminated municipal water supplies can cause outbreaks too.

- The parasite is resistant to chlorine, which is commonly used to prevent infections from water used for swimming. For this reason, *Cryptosporidium* is the leading cause of treated recreational water-associated outbreaks of diarrhea. *Cryptosporidium* oocysts that spread diarrheal disease can remain infectious for more than 10 days in chlorine concentrations typically required for swimming pools.
- Outbreaks can occur in early childhood education (ECE) settings and are thought to be spread person-to-person at high rates, as well as from contaminated water sources.
- The parasite can be transmitted from animals in petting zoos and contaminated feces on farms and in the wild.

How do you control it?

- Use good hand-hygiene technique at all the times listed in Chapter 2, especially after toilet use or handling soiled diapers and before anything to do with food preparation or eating.
- Ensure proper surface disinfection that includes cleaning and rinsing of surfaces that may have become contaminated with stool (feces) with detergent and water and application of a US Environmental Protection Agency-registered disinfectant according to the instructions on the product label.
- Ensure proper cooking and storage of food.
- Exclude infected staff members who handle food.
- Exclusion for specific types of symptoms (see the section Exclude from educational setting?).
- Children with *Cryptosporidium* diarrhea should not participate in water play activities for 2 weeks after diarrhea has resolved.
- Use a combination of water disinfection and proper pool maintenance. For children younger than 8 years, consider restricting communal water play to water contact above the waist (eg, water table), or limiting play in a body of water that involves getting wet below the waist to one person before the water is replaced by fresh water (eg, a portable wading pool). Advise swimmers and waders to use the toilet before using recreational water to reduce the likelihood they will release feces into the water. Encourage recreational water users to shower before and after use and avoid swallowing the water. Some recreational pools have a routine call at 2-hour intervals for children younger than 8 years to leave the pool for a toilet break.

What are the roles of the educator and the family?

- Usually, educators will not know a child has cryptosporidiosis because the condition is not distinguishable from other common forms of watery diarrhea. So, the following recommendations apply for a child with diarrhea from any cause (see Diarrhea Quick Reference Sheet):
 - Report the condition to the staff member designated by the ECE program or school for decision-making and action related to care of ill children or staff members. That person, in turn, alerts possibly exposed family and staff members to watch for symptoms and notifies the Child Care Health Consultant.
 - Ensure staff members follow the control measures listed in the section How do you control it?
 - Report outbreaks of diarrhea (more than 2 children and/or staff members in the group) to the Child Care Health Consultant, who may report to the local health department.
- If a child has a known cryptosporidiosis infection
 - Follow the advice of the child's or staff member's health professional.
 - Report the infection to the local health department, as the health professional who makes the diagnosis may not report that the infected child is a participant in an ECE program or school, and this could lead to loss of precious time for controlling the spread of the disease. In an outbreak, follow the directions of the local health department.
 - Reeducate staff members about strict and frequent handwashing, diapering, toileting, food handling, and cleaning and disinfection procedures.
 - In an outbreak, follow the directions of the local health department.

Exclude from educational setting?

Yes, if

- The local health department determines exclusion is needed to control an outbreak.
- The child is unable to participate and staff members determine they cannot care for the child without compromising their ability to care for the health and safety of the other children in the group.
- Stool is not contained in the diaper for diapered children.
- Diarrhea is causing “accidents” for toilet-trained children.
- Stool frequency exceeds 2 stools above normal for that child during the time the child is in the program because this may cause too much work for educators and make it difficult for them to maintain sanitary conditions.
- There is blood or mucus in stool.
- The child has a dry mouth, no tears, or no urine output in 8 hours (suggesting the child's diarrhea may be causing dehydration).

Note: For educators and children without symptoms (ie, recently recovered or exposed), testing stool cultures, treatment, and exclusion are not necessary.

Readmit to educational setting?

Yes, when all the following criteria are met:

- Once diapered children have their stool contained by the diaper (even if the stools remain loose) and when toilet-trained children do not have toileting accidents
- Once stool frequency is no more than 2 stools above normal for that child during the time the child is in the program, even if the stools remain loose
- When the child is able to participate and staff members determine they can care for the child without compromising their ability to care for the health and safety of the other children in the group

Note: It is not necessary to demonstrate negative *Cryptosporidium* stool test results to be readmitted to the educational setting.

