

# *Cryptosporidium* (“Crypto”)/ *Giardia* (“Beaver Fever”)

## Preventing Recreational Waterborne Illness

### The Issue

*Cryptosporidium* and *Giardia* are two parasites associated with the increase of outbreaks of recreational waterborne illnesses (RWI) across North America. These germs have tough outer shells that help them survive a long time in properly chlorinated pools. This increases the risk of a RWI to bathers and creates operational challenges. Keeping these parasites out of the water is the first line of defence.

### Quick Facts

*Cryptosporidium*, also known as Crypto, causes an illness called cryptosporidiosis. *Giardia*, also known as beaver fever, causes an illness called giardiasis.

### Both germs

- resist and tolerate disinfection (chlorine) and therefore can survive in properly disinfected pools for longer periods of time, increasing the risk to patrons
- are microscopic and can't be seen with the naked eye
- are found in the fecal matter of infected people and animals
- can cause diarrhea but other symptoms can include weight loss, stomach cramps or pain, dehydration, nausea, and, in the case of Crypto, fever

A single incident of diarrhea from a person who is infected with Crypto can introduce 107–108 *Cryptosporidium* oocysts into the water. That's enough to cause infection if a mouthful of pool water is ingested. It's tough outer shell helps it survive up to 10.6 days in properly chlorinated (1 ppm) and balanced pools.

Crypto can cause prolonged and sometimes serious watery diarrhea for up to two to four weeks. It can make anyone sick, but certain groups of people are more likely to become seriously ill:

- young children
- pregnant women
- people with weakened immune systems

*Giardia* can cause prolonged diarrhea, up to one to two weeks. Its tough outer shell helps it survive up to 45 minutes in properly chlorinated (1ppm) and balanced pools.

# Preventing Recreational Waterborne Illness

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Crypto and *Giardia* can be spread by

- swallowing recreational (pool) water contaminated with either germ, including the feces (poop) from an infected person; pool water is a shared environment and its cleanliness (safety) also relies on bather hygiene and personal habits
- swallowing something such as food (or even just putting it in the mouth) contaminated with the feces (poop) of an infected person or animal
- swallowing the germs picked up from surfaces such as lounge chairs, picnic tables, bathroom fixtures, or changing tables contaminated with feces of an infected person or animal

## **Strategies to Reduce and Prevent the Risk of Crypto and *Giardia***

Remember patrons share the water—and the germs in it—with *every person* who enters the pool.

### **All swimmers should take the following easy and effective steps to keep these germs out of the pool.**

1. Take frequent bathroom breaks to keep feces, urine, and germs out of the water. Do not pee in the water. Increased contamination loads uses up disinfectant faster and makes it less effective.
2. Shower with soap before starting the first swim, and take rinse showers before subsequent swims. Studies show that each person has an average of 0.14 grams of fecal matter on their perianal surface. This will rinse into the water if swimmers do not take a pre-swim shower with soap, or if parents do not thoroughly cleanse their children's bottoms.
3. Don't swim when experiencing bouts of diarrhea.
4. Wash hands after using the toilet or changing diapers.
5. Tell pool staff about any feces in the pool area.
6. Don't swallow the pool water.

### **Parents of young children should take a few extra steps.**

1. Take children on frequent bathroom breaks every 30 to 60 minutes.
2. Check swim diapers and swim pants frequently. They are not a substitute for diaper changes and bathroom breaks. Swim diapers and swim pants are not leak proof.
3. Change diapers, swim diapers, and swim pants in the bathroom or diaper-changing area only. Do not change at poolside where germs can rinse into the water. Wash hands before re-entering the pool.
4. Do not take children swimming if they are ill or if they have loose stool. Never take children swimming when they have diarrhea, even if they are wearing swim diapers or swim pants.

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## **Facility Operators**

1. Develop and carry out fecal release incident response plans. See separate fact sheets for more information.
2. Educate staff about the risks of fecal accidents, their role in preventing and recognizing an incident, and the incident response plans procedures.
3. Educate pool patrons about the value of telling pool staff about any fecal accidents in the pool and the value of pre-swim cleansing.
4. Check the free available chlorine and pH levels before opening the pool and throughout the day.

## **Designers and Facility Builders**

1. When designing aquatic facilities containing more than one venue (pool), each pool shall have a separate filter and circulation system to prevent cross contamination between pools and filters.
2. At the design stage, include a secondary disinfection system, such as UV, along with the primary disinfection system, for any increased risk venues (pools). Increased risk venues include pools that are at an increased risk of fecal contamination or being used by people who may be more susceptible to infection. These include spray pads, wading pools, and other aquatic venues designed for diaper-aged children, as well as therapy pools/spas.
3. Make sure change rooms have a diaper change table with an accessible hand wash sink.
4. Install an adequate number of shower units supplied with warm water to encourage pre-swim cleansing.