

RECREATIONAL WATER ILLNESSES

What are recreational water illnesses (RWIs)?

RWIs are illnesses that are spread by swallowing, breathing, or having contact with contaminated water from swimming pools, spas, lakes, rivers, or oceans. Recreational water illnesses can cause a wide variety of symptoms, including skin, ear, respiratory, eye, and wound infections. The most commonly reported RWI is diarrhea. Diarrheal illnesses can be caused by germs such as Crypto, short for *Cryptosporidium*, *Giardia*, *Shigella*, and *E. coli* O157:H7.

Questions

- What are recreational water illnesses (RWIs)?
- How are Recreational Water Illnesses spread?
- Why doesn't chlorine kill these Recreational Water Illnesses germs?
- Where are Recreational Water Illnesses found?
- Who is most likely to get ill from an Recreational Water Illness?
- How can we prevent Recreational Water Illnesses?

How are RWIs spread?

Keep in mind that you share the water with everyone else in the pool, lake, or ocean.

Diarrheal Illnesses

If swimmers are ill with diarrhea, the germs that they carry can contaminate the water if they have an "accident" in the pool. On average people have about 0.14 grams of feces on their bottoms which, when rinsed off, can contaminate recreational water. When people are ill with diarrhea, their stool can contain millions of germs. Therefore, swimming when ill with diarrhea can easily contaminate large pools or waterparks. In addition, lakes, rivers, and the ocean can be contaminated by sewage spills, animal waste and water runoff following rainfall. Some common germs can also live for long periods of time in salt water.

So, if someone swallows water that has been contaminated with feces, he/she may become sick. Many of these diarrhea-causing germs do not have to be swallowed in large amounts to cause illness.

Other RWIs

Many other RWIs ([eye, skin, ear and respiratory infections](#)) are caused by germs that live naturally in the environment (water, soil). In the pool or hot tub, if disinfectant is not maintained at the appropriate levels, these germs can increase to the point where they can cause illness when swimmers breathe or

have contact with water containing these germs.

Why doesn't chlorine kill these RWI germs?

[Chlorine](#) in swimming pools does kill the germs that may make people sick, but it takes time. Chlorine in properly disinfected pools kills most germs that can cause RWIs in less than an hour. Chlorine takes longer to kill some germs such as [Crypto](#), which can survive for days in even a properly disinfected pool. This means that without your help, illness can spread even in well-maintained pools.

Healthy swimming behaviors are needed to protect you and your family from RWIs and will help stop germs from getting in the pool.

Where are RWIs found?

In addition to swimming pools, swimming in contaminated hot tubs, oceans, lakes, rivers, and playing in decorative water fountains can also spread RWIs.

Hot tubs

Skin infections like "[hot tub rash](#)" are the most common RWIs spread through hot tubs and spas. [Chlorine](#) and other disinfectant levels evaporate more quickly because of the higher temperature of the water in the tubs. It is important to check disinfectant levels even more regularly than in swimming pools. "Hot tub rash" can also occur in pools and at the lake or beach.

Decorative Water Fountains

Not all decorative or interactive fountains are chlorinated or filtered. Therefore, when people, especially diaper-aged children, play in the water, they can contaminate the water with fecal matter. Swallowing this contaminated water can then cause diarrheal illness.

Lakes, Rivers, and Oceans

Lakes, rivers, and oceans can become contaminated with germs from sewage, animal waste, water runoff following rainfall, fecal accidents, and germs rinsed off the bottoms of swimmers. It is important to avoid swallowing the water because natural recreational water is not disinfected. Avoid swimming after rainfalls or in areas identified as unsafe by health departments. Contact your state or local health department for results of water testing in your area or go to [EPA's beach site](#) or their [National Health Protection Survey of Beaches](#).

Who is most likely to get ill from an RWI?

Children, pregnant women, and people with compromised immune systems (such as those living with AIDS, those who have received an organ transplant, or those receiving certain types of chemotherapy) can suffer from more severe

illness if infected. People with compromised immune systems should be aware that recreational water might be contaminated with human or animal waste that contains [Cryptosporidium \(or Crypto\)](#), which can be life threatening in persons with weakened immune systems. People with a compromised immune system should consult their health care provider before participating in behaviors that place them at risk for illness.

What is Cryptosporidiosis?

Cryptosporidiosis (krip-toe-spo-rid-e-o-sis), is a diarrheal disease caused by a microscopic parasite, *Cryptosporidium parvum*, that can live in the intestine of humans and animals and is passed in the stool of an infected person or animal. Both the disease and the parasite are also known as "Crypto." The parasite is protected by an outer shell that allows it to survive outside the body for long periods of time and makes it very resistant to chlorine disinfection. During the past 2 decades, Crypto has become recognized as one of the most common causes of waterborne disease (drinking water and recreational water) in humans in the United States. The parasite is found in every region of the United States and throughout the world.

Who might be immunocompromised or have a weakened immune system?

Examples of persons with weakened immune systems include those with AIDS; cancer and transplant patients who are taking certain immunosuppressive drugs; and those with inherited diseases that affect the immune system. The risk of developing severe disease may differ depending on each person's degree of immune suppression. Following all the recommendations in this fact sheet can be a great personal burden, so consult with your health care provider to determine whether your medical condition makes it advisable to follow all of these recommendations.

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What are the symptoms of Crypto?

Symptoms include diarrhea, loose or watery stool, stomach cramps, upset stomach, and a slight fever. Some people have no symptoms.

How long after infection do symptoms appear?

Symptoms generally begin 2-10 days after being infected.

How long will symptoms last?

In persons with average immune systems, symptoms usually last about 2 weeks; the symptoms may go in cycles in which you may seem to get better for a few day, then feel worse before the illness ends.

How does Crypto affect you if your immune system is severely weakened?

In persons with AIDS and in others whose immune system is weakened, Crypto can be serious, long-lasting, and sometimes fatal. If your CD4+ cell count is below 200, Crypto is more likely to cause diarrhea and other symptoms for a long time. If your CD4+ count is above 200, your illness may not last more than 1 to 3 weeks or slightly longer. However, you could still carry the infection, which means that the Crypto parasites are living in your intestine, but are not causing illness. As a carrier of Crypto, you could infect other people. If your CD4+ count later drops below 200, your symptoms may reappear.

How is Crypto spread?

Crypto lives in the intestine of infected humans or animals. Millions of Crypto can be released in a bowel movement from an infected human or animal. You can become infected after accidentally swallowing the parasite. Crypto may be found in soil, food, water, or surfaces that have been contaminated with the feces from infected humans or animals. Crypto is not spread by contact with blood. Crypto can be spread:

- By putting something in your mouth or accidentally swallowing something that has come in contact with the stool of a person or animal infected with Crypto.
- By swallowing recreational water contaminated with Crypto. Recreational water is water in swimming pools, hot tubs, Jacuzzis, fountains, lakes, rivers, springs, ponds, or streams that can be contaminated with sewage or feces from humans or animals.
- By eating uncooked food contaminated with Crypto. Thoroughly wash with uncontaminated water all vegetables and fruits you plan to eat raw. See below for information on making

water safe.

- By accidentally swallowing Crypto picked up from surfaces (such as toys, bathroom fixtures, changing tables, diaper pails) contaminated with stool from an infected person.

How can we prevent RWIs?

Prevention for Swimmers and Parents

Practicing [healthy swimming behaviors](#) helps protect swimmers from RWIs.

Prevention for Aquatics Staff

Properly maintaining pools and educating staff and swimmers helps keep RWIs out of aquatic facilities.

Prevention for Public Health Professionals

Health professionals are a resource for training pool operators, disseminating information on RWIs to pool operators and the public, and responding to public health emergencies.

All questions in printer-friendly format

<http://www.spadepot.com/spacyclopedia/trouble1.htm>

http://www.spadepot.com/spacyclopedia/spa_chems.htm

<http://www.spadepot.com/spacyclopedia/abcswc.htm>

<http://www.spadepot.com/spacyclopedia/htspapm.htm>

Also, go to google.com and search with "spa bath, lung disease",

This will bring up a news article from the BBC news service on this subject. Very informative.

With links to the research institute that did the work. All worth reading.