



***Cryptosporidium* Prevention—Immunocompromised Persons**

You can reduce your risk of getting Crypto. The more steps you take, the less likely you are to get infected. These actions will also help protect you against other diseases. Following all the recommendations in this fact sheet can be a great personal burden. Consult with your health care provider to determine whether your medical condition makes it advisable to follow all of these recommendations.

1. Wash your hands.

Washing your hands often with soap and water is probably the single most important step you can take to prevent Crypto and other illnesses. Always wash your hands before eating and preparing food. Wash your hands well after touching children in diapers; after touching clothing, bedding, toilets, or bed pans soiled by someone who has diarrhea; after gardening; any time you touch pets or other animals; and after touching anything that might have had contact with even the smallest amounts of human or animal stool, including dirt in your garden and other places. Even if you wear gloves when you do these activities you should still wash well when you finish. Children should be supervised by adults to make sure they wash their hands well.

2. Practice safer sex.

Infected people may have Crypto on their skin in the anal and genital areas, including the thighs and buttocks. However, since you cannot tell if someone has Crypto, you may want to take these precautions with any sex partner. Avoid sexual practices that might result in oral exposure to stool (e.g., oral-anal contact). To reduce the risk for exposure to stool, consider using dental dams or similar barrier methods for oral-anal and oral-genital contact, wearing latex gloves during digital-anal contact, and changing condoms after anal intercourse. Frequent washing of hands and genitals with warm soapy water during and after activities that might bring these body parts in contact with stool might further reduce the risk for infection with Crypto. This advice is good not only for preventing infection with Crypto but also preventing infection with other gastrointestinal germs, such as *Giardia*, hepatitis A, *Salmonella*, *Shigella*, and amebas.

3. Avoid touching farm animals.

If you touch a farm animal, particularly a calf, lamb, or other young animal, or visit a farm where animals are raised, wash your hands well with soap and water before preparing food or putting anything in your mouth. Do not touch the stool of any animal. After you visit a farm or other area with animals, have someone who is not immunocompromised clean your shoes, or wear disposable gloves if you clean them yourself. Wash your hands well with soap and water after taking off the gloves.

4. Avoid touching the stool of pets.

Most pets are safe to own. However, someone who is not immunocompromised should clean their litter boxes or cages, and dispose of the stool. If you must clean up after a pet, use disposable gloves. Wash your hands well with soap and water afterwards. The risk of getting Crypto is greatest from pets that are less than 6 months old, animals that have diarrhea, and stray animals. Older animals can also have Crypto, but they are less likely to have it than younger animals. If you get a puppy or kitten that is less than 6 months old, have the animal tested for Crypto before bringing it home. If any pet gets diarrhea, have it tested for Crypto.

5. Avoid swallowing water when swimming in the ocean, lakes, rivers, or pools, and when using hot tubs.

When swimming in lakes, rivers, or pools, and when using hot tubs, avoid swallowing water. Several outbreaks of Crypto have been traced to swallowing contaminated water while swimming. Crypto can live in chlorinated swimming pools and water parks for days. Crypto also can remain alive in salt water for several days, so swimming in polluted ocean water may also be unsafe.

For more information visit "What are recreational water illnesses (RWIs)" at <http://www.cdc.gov/healthyswimming/what.htm>?

6. Wash and/or cook your food.

Fresh vegetables and fruits may be contaminated with Crypto. Therefore, wash well all vegetables or fruit you will eat uncooked. If you take extra steps to make your water safe (see below for ways to do so), use this safe water to wash your fruits and vegetables. When you can, peel fruit that you will eat raw, after washing it. Do not eat or drink unpasteurized milk or dairy products. Cooking kills Crypto. Therefore, cooked food and heat-processed foods are probably safe if, after cooking or processing, they are not handled by someone infected with Crypto, or exposed to possibly contaminated water.

7. Drink safe water.

Do not drink water directly from shallow wells, lakes, rivers, springs, ponds, and streams. Because you cannot be sure if your tap water contains Crypto, you may wish to avoid drinking tap water, including water and ice from a refrigerator and drinks made at a fountain, which are usually made with tap water. Because public water quality and treatment vary throughout the United States, always check with the local health department and water utility to see if they have issued any special notices about the use of tap water by immunocompromised persons. You may also wish to take some additional measures: boiling your water, filtering your water with certain home filters, or drinking certain types of commercially-bottled water. Processed carbonated (bubbly) drinks in cans or bottles are probably safe, but drinks made at a fountain might not be because they are made with tap water. If you choose to take these extra measures, use them all the time, not just at home. If the public health department advises boiling the water, do not drink tap water unless you boil it. You could also use one of the commercially-bottled waters described below.

- A. **Boiling water:** Boiling is the best extra measure to ensure that your water is free of Crypto and other germs. Heating water at a rolling boil for 1 minute kills Crypto, according to CDC* and EPA** scientists. After the boiled water cools, put it in a clean bottle or pitcher with a lid and store it in the refrigerator. Use the water for drinking, cooking, or making ice. Water bottles and ice trays should be cleaned with soap and water before use. Do not touch the inside of them after cleaning. If you can, clean water bottles and ice trays yourself.
- B. **Filtering tap water:** Many but not all available home water filters remove Crypto. Filters that have the words "reverse osmosis" on the label protect against Crypto. Some other types of filters that function by micro-straining also work, but not all filters that are supposed to remove objects 1 micron or larger from water are the same. Look for the words "absolute 1 micron." Some "1 micron" and most "nominal 1 micron" filters will not work against Crypto. Also look for the words "Standard 53" and the words "cyst reduction" or "cyst removal" for an NSF-tested filter that works against Crypto.

To find out if a particular filter removes Crypto, contact NSF International, an independent testing group.

NSF International
789 N. Dixboro Road
P.O. Box 130140z
Ann Arbor, MI 48113-0140
tel: 1-800-673-6275

fax: 1-734-769-0109
email: info@nsf.org
web: www.nsf.org

Ask NSF for a list of "Standard 53 or 58 Cyst Filters." Check the model number on the filter you intend to buy to make sure it is exactly the same as the number on the NSF list. Look for the NSF trademark on filters, but be aware that NSF tests filters for many different things. Because NSF testing is expensive, many filters that may work against Crypto have not been tested. Reverse-osmosis filters work against Crypto whether they have been tested by NSF or not. Many other filters not tested by NSF also work if they have an absolute pore size of 1 micron or smaller.

PACKAGE AND LABEL INFORMATION FOR PURCHASING WATER FILTERS	
Filters labeled only with these words may NOT be designed to remove Crypto	Water so labeled may not have been processed by a method effective against Crypto
Reverse osmosis (with or without NSF testing)	<i>Nominal</i> pore size of 1 micron or smaller
Absolute pore size of 1 micron or smaller (with or without NSF testing)	One micron filter
Tested and certified by NSF Standard 53 or NSF Standard 58 for cyst removal	Effective against Giardia
"Tested and certified by NSF Standard 53 or NSF Standard 58 for cyst reduction	Effective against parasites
	Carbon filter
	Water purifier
	EPA approved Caution: EPA does not approve or test filters
	EPA registered Caution: EPA does not register filters based on their ability to remove Crypto-sporidium
	Activated carbon
	Removes chlorine
	Ultraviolet light
	Pentiodide resins
	Water softener

Filters collect germs from your water, so someone who is not immunocompromised should change the filter cartridges for you; if you do it yourself, wear gloves and wash your hands well with soap and water afterwards. Filters may not remove Crypto as well as boiling does because even good brands of filters may sometimes have manufacturing flaws that allow small numbers of Crypto parasites to get past the filter. Also, poor filter maintenance or failure to replace filter cartridges as recommended by the manufacturer can cause your filter to fail.

C. **Commercially-bottled water:** If you drink commercially-bottled water, read the label and look for this information:

COMMERCIALLY-BOTTLED DRINKING WATER LABELING INFORMATION	
Water so labeled has been processed by a method effective against crypto	Water so labeled may not have been processed by a method effective against crypto
Reverse osmosis treated	Filtered
Distilled	Micro-filtered
Filtered through an absolute 1 micron or smaller filter	Carbon-filtered
"One micron absolute"	Particle-filtered
	Multimedia-filtered
	Ozonated
	Ozone-treated
	Ultraviolet light-treated
	Activated carbon-treated
	Carbon dioxide-treated
	Ion exchange-treated
	Deionized
	Purified
	Chlorinated

Commercially-bottled water labels reading "well water," "artesian well water," "spring water," or "mineral water" do not guarantee that the water does not contain Crypto. However, water that comes from protected wells or protected springs is less likely to contain Crypto than water from less protected sources, such as rivers and lakes. Any bottled water (no matter what the source) that has been treated by one or more of the methods listed in the top part of the water filters table should be safe.

D. **Home distillers:** You can remove Crypto and other germs from your water with a home distiller. If you use one, you need to carefully store your water. After purification, put the water in a clean bottle or pitcher with a lid and store it in the refrigerator. Water bottles and ice trays should be cleaned with soap and water before use. Do not touch the inside of them after cleaning.

E. **Other drinks:** Soft drinks and other beverages may or may not contain Crypto. You need to know how they were prepared to know if they might contain Crypto.

If you drink prepared drinks, look for drinks prepared in a manner that kills or removes Crypto:

PREPARED BEVERAGES AND CRYPTO RISK	
Drinks that ARE safe	Drinks that may NOT be safe
Carbonated (bubbly) drinks in cans or bottles	Fountain drinks
Commercially-prepared fruit drinks in cans or bottles	Fruit drinks you mix with tap water from frozen concentrate
Steaming hot (175 degrees F or hotter) tea or coffee	Iced tea or iced coffee
Pasteurized drinks, including dairy products and juices	

Juices made from fresh fruit can also be contaminated with Crypto. For example, an outbreak of cryptosporidiosis occurred in Ohio whereby several people became ill after drinking apple cider made from apples contaminated with Crypto. You may wish to avoid unpasteurized juices or fresh juices if you do not know how they were prepared.

8. Take extra care when traveling.

If you travel, particularly to developing nations, you may be at a greater risk for Crypto because of poorer water treatment and food sanitation. Warnings about food, drinks, and swimming are especially important in such settings. Foods and beverages, in particular raw fruits and vegetables, tap water, ice made from tap water, unpasteurized milk or dairy products, and items purchased from street vendors might be contaminated. Steaming-hot foods, fruits you peel yourself, bottled and canned processed drinks, and hot coffee or hot tea are probably safe. Talk with your health care provider about other guidelines for travel abroad.

For more information on Crypto in immunocompromised people, call CDC-INFO at 1-800-232-4636 or email cdcinfo@cdc.gov.

This information was prepared by the inter-agency Working Group on Waterborne Cryptosporidiosis, which includes representatives from the Centers for Disease Control and Prevention, Environmental Protection Agency, Food and Drug Administration, U.S. Department of Agriculture, National Association of People With AIDS, AIDS Coalition to Unleash Power, and representatives of state and local health departments and water utilities.

*CDC--Centers for Disease Control and Prevention

**EPA--Environmental Protection Agency

This fact sheet is for information only and is not meant to be used for self-diagnosis or as a substitute for consultation with a health care provider. If you have any questions about the disease described above or think that you may have a parasitic infection, consult a health care provider.

From http://www.cdc.gov/crypto/factsheets/prevent_ic.html

