

Drinking Water from the Rio Bravo Water Treatment Plant and possible *cryptosporidium*

Background: Recently, Webb County sent information about two legal violations at the Rio Bravo Water Treatment Plant. The Treatment Technique Violation discusses the Plant's continuing violation of the new standards in the treatment of *cryptosporidium*, a parasite found in the Rio Grande. The purpose of this document is to provide you more information so you can better understand the quality of your drinking water and *cryptosporidium*.

New federal rules require Webb County to remove 99.99% of the *cryptosporidium* from the source water, but the Plant currently only removes 99.9%. The County is scheduled to meet and exceed the 99.99% EPA standard when a new Ultraviolet System is installed. The County anticipates the UV system will be installed in September, and will continue to notify customers monthly until the new UV System is installed and new standards are met.

The following information is taken directly from the City of New York, at the following website: <http://www.nyc.gov/html/doh/html/diseases/cdcry.shtml>

What is *cryptosporidiosis*?

Cryptosporidiosis is a diarrheal illness caused by the microscopic parasite *Cryptosporidium*.

Who gets *cryptosporidiosis*?

Anyone can get cryptosporidiosis. However, it causes more severe illness in persons with HIV/AIDS and others with impaired immune systems, such as people receiving cancer chemotherapy and transplant patients on immunosuppressive drugs.

How is *cryptosporidiosis* spread?

Infected animals and humans have *Cryptosporidium* in their digestive systems. The parasite is passed in the stool (feces) of an infected person or animal as an oocyst (egg-like form of the organism). When it is outside the body it is protected by an outer shell and can live in the environment for long periods of time.

People become infected by ingesting the organism.

Infection can occur by touching stool or objects contaminated by stool and then touching the mouth with unwashed hands.

Persons and animals can also become infected by drinking water or by eating raw or undercooked food that is contaminated with stool from infected animals or persons.

Some people have become sick after swimming in public pools contaminated with stools from infected persons.

Sexual activity in which the mouth or hand may come into contact with a partner's anus or stool presents a risk. It may take very few oocysts to cause infection.

What are the symptoms of cryptosporidiosis?

The most common symptoms are watery diarrhea and abdominal cramping. Vomiting, low-grade fever, loss of appetite, weight loss, and dehydration may occur. In persons with healthy immune systems, symptoms may last about 1 to 2 weeks. In persons with weakened immune systems, especially persons with HIV/AIDS, the infection may lead to prolonged illness. Some people infected with *Cryptosporidium* may not have any symptoms.

How soon after infection do symptoms appear?

Symptoms usually appear within 2 to 10 days after exposure, with an average of 7 days.

How is cryptosporidiosis diagnosed?

If your doctor suspects cryptosporidiosis, you will be asked to submit one or more stool samples. Diagnosis is made by examining the stool under a microscope or by using special detection tests for *Cryptosporidium*. The test for *Cryptosporidium* must be specifically requested by your doctor. Sometimes, several stool samples obtained on different days are necessary, since the number of *Cryptosporidium* parasites shed in the stool varies from day to day.

What is the treatment for cryptosporidiosis?

People with healthy immune systems usually get well without treatment.

People with diarrhea should drink plenty of fluids.

Young children and pregnant women may be more susceptible to the dehydration resulting from diarrhea, so it is especially important that they drink plenty of fluids while ill.

Currently, there is no standard treatment for cryptosporidiosis. One drug, nitazoxanide, has been approved for the treatment of diarrhea caused by *Cryptosporidium* in people who are not immunocompromised. For people living with AIDS, antiretroviral therapy that improves immune status can decrease or eliminate symptoms. Symptoms may recur if immune status worsens. Persons with cryptosporidiosis should consult with their health care provider regarding treatment options.

Should an infected person be excluded from work or school?

Since the *Cryptosporidium* parasite is passed in the stool, people with active diarrhea who are unable to control their bowel habits (for example, infants, young children, and certain disabled individuals) may need to be excluded from group settings where they may present a risk to others. Most infected people may return to work or school when their stools become formed as long as they wash their hands thoroughly after using the toilet.

How can cryptosporidiosis be prevented?

The following measures for preventing cryptosporidiosis are recommended:

Steps to take to Prevent Cryptosporidiosis

Practice good hygiene.

Always thoroughly wash your hands with soap and warm running water before touching food, after using the toilet or changing diapers, after handling animal stools, and after gardening or other direct contact with soil.

If you work in a child-care center where you change children's diapers, wash your hands carefully between changing each child's diapers. When using gloves, wash your hands and change gloves between each child.

If you take care of persons with cryptosporidiosis, or persons who have diarrhea, wash your hands after bathing patients, emptying bedpans, changing soiled linen, or otherwise coming in contact with stool.

Avoid water that may be contaminated.

Do not drink water directly from streams, lakes, springs or swimming pools.

Heat water to a rolling boil for 1 minute whenever you are unsure of the safety of a drinking water source.

Carefully dispose of sewage wastes so as not to contaminate surface water or ground water.

Comply fully with water advisories whenever issued by public health or government authorities.

Avoid food that may be contaminated.

Avoid eating unwashed fruits and vegetables, and drinking unpasteurized milk or other milk products that are not pasteurized. Unpasteurized apple cider has also caused infection in the past.

Take extra care when traveling.

If you travel to developing countries, you may be at greater risk for cryptosporidiosis because of poorer water treatment and food sanitation. Avoid raw fruits and vegetables that you did not peel or wash yourself, unboiled tap water, ice made from unboiled tap water, unpasteurized dairy products, and items purchased from street vendors.

Protect yourself and others.

If you have cryptosporidiosis, wash your hands often to prevent spreading the disease to other people.

*If you have diarrhea, protect others by not swimming. Persons with diarrhea should not use public swimming facilities. If you have cryptosporidiosis, you should not swim in any recreational water for at least 2 weeks after diarrhea stops. You can pass *Cryptosporidium* in your stool and contaminate water for several weeks after your symptoms have ended. *Cryptosporidium* can survive in chlorine-treated swimming pools.*

Sexual practices that may result in hand or mouth contact with stool, such as anal sex, touching the anus, or oral-anal sex ("rimming"), increase the risk for cryptosporidiosis transmission. Risk of

transmission may be decreased by washing thoroughly with soap and water before and after any anal contact, and by using a barrier such as a dental dam or household plastic wrap during oral-anal contact. Persons with any diarrheal illness should avoid any sexual practice that may expose a partner to their stool.

Is drinking water from the Rio Bravo Water Treatment Plant safe to drink?

Very low levels of *Cryptosporidium* oocysts are sometimes found in public water supply sources, including in the Rio Bravo Water Treatment Plant's water supply, the Rio Grande. The levels of *Cryptosporidium* oocysts found in the Rio Grande where the Plant gets its water are high enough to require the Plant to treat 99.99% of the *Cryptosporidium* oocysts. Laboratory tests cannot yet determine if any cysts found in the water supply are alive or dead, and no one knows for sure if these very low levels can cause infection among persons with healthy immune systems or immunocompromised persons. At this time there is no evidence to suggest that there is a significant risk of cryptosporidiosis from Rio Bravo Water Treatment Plant drinking water.

For more information regarding cryptosporidiosis and drinking water, see the information below on "Extra Precautions to Avoid Cryptosporidiosis for Persons with HIV/AIDS or Other Causes of Immunosuppression."

Extra Precautions to Avoid Cryptosporidiosis for Persons with HIV/AIDS or Other Causes of Immunosuppression

If you are HIV positive or otherwise immunocompromised, be extra careful about hand washing, carefully wash food before eating, and thoroughly cook foods that are heated before eating. Do not let raw foods contaminate other foods. Avoid drinking or accidentally swallowing water from lakes, rivers, streams, springs or swimming pools. Follow "safer sex" guidelines. Any sex act that involves hand or mouth contact with the anus or stool (feces) increases the risk for cryptosporidiosis. Oral-anal contact (rimming) is very likely to spread infection, therefore you should avoid it, even if you and you partner wash well before. Always wash your hands well after touching your partner's anal area.

You may want to discuss the need for taking further protective measures with your medical provider.

Drinking water that is considered safe for persons with healthy immune systems may contain some Cryptosporidium oocysts. No one knows whether a small number of oocysts could create a risk for someone who is immunocompromised. Some researchers think that oocysts ingested while you are still relatively healthy can remain in your digestive system until your immune system is severely depressed and then cause serious illness.

If you want greater assurance that your drinking water is safe to drink, here are some options for safer beverages:

Heat tap water to a rolling boil for 1 minute before using. This will kill all microorganisms including *Cryptosporidium*. To avoid burning yourself, allow water to cool before pouring into a clean, dry container.

Use boiled water for ice cubes, tooth brushing, washing vegetables that will be eaten raw, and mixing with concentrates. You do not need to use boiled water for food that will be cooked before eating.

Dishes, silverware, pots, and pans may be washed with tap water as long as they are dry before being used.

Not all available home or office water filters remove Cryptosporidium. *Point-of-use filters with an absolute pore size of less than or equal to 1 micron in diameter will remove Cryptosporidium. Filters designed to remove Cryptosporidium will have one of the following labels: "Absolute pore size of 1 micron or smaller," "Tested and certified by the National Sanitation Foundation (NSF) Standard 53 for cyst removal," "Tested and certified by NSF Standard 53 for cyst reduction," or "Reverse osmosis." Follow manufacturer's directions for routine maintenance, and replace filters according to schedule. Filters collect microorganisms, so someone who is not immunocompromised should change filter cartridges. Anyone changing cartridges should wear gloves and wash hands afterwards.*

Bottled water is not necessarily free of Cryptosporidium. *Bottled water from a surface water source (for example, a river or lake) offers the same risk of cryptosporidiosis as tap water from the same source unless additional treatment is provided. Bottled water can be considered free of Cryptosporidium if it has been filtered through an absolute 1 micron or smaller filter, or treated with reverse osmosis or distillation. Bottled water that comes from deep ground water sources (for example, well water) is less likely to contain Cryptosporidium than bottled water from surface water sources.*

For more information, go to:

Centers for Disease Control; <http://www.cdc.gov/parasites/crypto/general.html>

Environmental Protection Agency;

http://water.epa.gov/action/advisories/drinking/upload/2009_02_03_criteria_humanhealth_microbial_crypto.pdf



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