

In the past decades, at least five outbreaks of cryptosporidiosis have been associated with contaminated drinking water, including the well-publicized one in Milwaukee, Wisconsin in 1993. This information sheet answers the most common questions that we receive about drinking water and cryptosporidiosis.

How do *Cryptosporidium* oocysts get into drinking water?

Cryptosporidium gets into surface water sources such as rivers and lakes from the stools of infected animals. Many municipal water treatment plants get their water from these surface water sources that can contain *Cryptosporidium* oocysts.

Does the treatment process remove the oocysts?

Filtration treatment will usually remove *Cryptosporidium* oocysts. Chlorination by itself is not effective. All Virginia localities that use surface water sources or groundwater sources that are under the direct influence of surface water (GUDI) are required to provide filtration treatment. The better the equipment and the more experienced the operators the less likely it is for oocysts to get through, but it is possible to have oocysts show up in drinking water that has been adequately treated.

What does it mean if *Cryptosporidium* oocysts are found in drinking water?

Authorities believe that the detection of a few oocysts in drinking water does not pose a threat to people with healthy immune systems. It takes an unusual combination of events to lead to a situation where drinking water causes disease. An increased number of organisms in the source water and a breakdown in the water treatment system would have to occur at the same time. This is the combination that occurred in Milwaukee.

How will officials decide that water is not safe to drink?

They will look at all indicators of water quality including such things as changes in the source water, number of *Cryptosporidium* oocysts, turbidity (cloudiness of the water), particle counts, presence of other organisms, water plant performance and maintenance records. The presence of oocysts alone does not necessarily indicate an increased risk for disease.

What will they recommend if water isn't safe?

Bringing water to a rolling boil for one minute will kill all organisms including *Cryptosporidium*.

What laws regulate *Cryptosporidium* in drinking water?

There are no federal or state regulatory maximum contaminant levels (MCLs) for *Cryptosporidium* in drinking water because there is not enough information on which to base standards. Additionally, routine testing for *Cryptosporidium* is very difficult. In lieu of specific MCLs for *Cryptosporidium*, federal and state drinking water regulations require that specific treatment techniques be provided. In an effort to learn more, the Environmental Protection Agency is requiring water systems that obtain their water from surface water or groundwater sources that are under the direct influence of surface water to test the raw water for *Cryptosporidium* oocysts. Additional treatment may be required for waters that contain certain levels of *Cryptosporidium*.

Are there any problems with the laboratory tests?

There are several things to be aware of regarding *Cryptosporidium* test results:

1. The laboratory test used to detect *Cryptosporidium* in water cannot tell the difference between viable (able to cause illness) and nonviable oocysts.
2. In most cases, the results of the tests on drinking water will not be available until several weeks after the sample was taken and so will not be an accurate measure of present conditions.
3. The number or concentration of oocysts is not necessarily a predictor of when illness will occur. Other factors, such as clumping of oocysts and water temperature may play a role.

Has any water been tested in Virginia?

Yes. To date, in Virginia, levels of *Cryptosporidium* have been low in water before it enters the treatment plant and have not been found in filtered water.