

## **Cryptosporidiosis and Drinking Water**

At least six outbreaks of cryptosporidiosis have been associated with contaminated drinking water, including a large, well-publicized outbreak in Milwaukee, Wisconsin in 1993. This information sheet answers the most common questions VDH receives about drinking water and cryptosporidiosis.

### **How do *Cryptosporidium* oocysts get into drinking water?**

*Cryptosporidium* gets into surface water sources such as rivers and lakes in the stool (feces) of infected animals or people. Municipal water from treatment plants that get their water from these surface water sources can contain *Cryptosporidium* oocysts (the egg-like form of the parasite).

### **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 provide filtration treatment. The better the equipment and the more experienced the operators, the better the removal of the *Cryptosporidium* oocysts.

In addition, in an effort to reduce health risks associated with *Cryptosporidium*, the Environmental Protection Agency (EPA) has promulgated the Long Term 2 Enhanced Surface Water Treatment Rule (LT2). LT2 requires that all water systems that obtain their water from surface water sources must monitor the raw (source) water for *Cryptosporidium* oocysts or indicator organisms. Monitoring results will indicate whether systems will be required to provide additional treatment to achieve effective oocyst reduction.

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

Authorities believe that the presence 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 the drinking water would be considered unhealthy. A change in the source water (such as an increase in the number of organisms or increase in turbidity) and a failure of the treatment system would have to occur at the same time. This is what happened in Milwaukee in 1993.

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

Officials evaluate the treatment technique by looking at several indicators of water quality, including such things as changes in the source water, turbidity (cloudiness of the water), particle counts, presence of other organisms, water plant performance, and maintenance records. The evaluation of the treatment process is used to determine if the treatment process has failed.

### **What will officials 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 standards for *Cryptosporidium* in drinking water. However, the EPA's LT2 rule sets standards to ensure compliance with *Cryptosporidium* removal requirements.

## **Why aren't laboratory tests used to determine whether there is a problem with *Cryptosporidium* in water?**

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

- The laboratory test most commonly used to detect *Cryptosporidium* in water cannot tell the difference between viable (able to cause illness) and nonviable oocysts.
- 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.
- 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.

## **How can I obtain more information on *Cryptosporidium* in drinking water?**

Additional information is available at <http://www.cdc.gov/crypto/>.

A report of the 1993 Milwaukee *Cryptosporidium* outbreak was published in the New England Journal of Medicine (N Engl J Med 1994;331:161-7). The report is available at: <http://www.nejm.org/doi/pdf/10.1056/NEJM199407213310304>