



The Information Exchange

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Water Safety & Cryptosporidium

Cryptosporidium is a protozoan found in faeces, soil and sewage. A person can be infected when they ingest oocysts (eggs) that contaminate water, food, hands or other objects.

For those *without* immune impairment, cryptosporidium infection causes diarrhoea which usually resolves fairly quickly. However, for those *with* an impaired immune system, cryptosporidium is not easily treated and can cause prolonged diarrhoea and weight loss. It is therefore important for those who are immune compromised to be aware of water safety issues.

Water treatment methods are intended to remove impurities and infectious organisms. If these fail, tap water can become a source of infection with organisms such as cryptosporidium. Cryptosporidium eggs are resistant to chlorine and other disinfectants so may be occasionally found in tap water.

A report produced by the Department of Environment and Health in 1995 concluded that:

'The absence of cryptosporidium oocysts in drinking water can never be guaranteed. In the light of a small risk of infection, it would be appropriate to advise people in whom cryptosporidiosis is likely to be a persistent and life threatening illness as a result of impaired immunity to avoid drinking unboiled water whether from tap or bottled or any other source'

Although the risk of cryptosporidium infection from drinking water is small, it would be prudent to take precautions. This advice should be followed for anyone with immune impairment but it is of particular importance if your CD4-cell count is less than 200 cells/mm³ or your CD4 percentage is less than 14%.

Guidelines for safe water consumption:

- Boiling tap water will kill any cryptosporidia which may be present. The water needs to be boiled for a minimum of one minute – so just boiling in an automatic kettle is not adequate.
- Treated water should be put into a heatproof bottle or jug with a tight fitting lid and stored in the fridge.
- In order to avoid re-infection with any organism, this water should be used within 12 - 48 hours, and ideally within 24 hours.
- As well as using treated water for cold drinks it is also advisable to use it for: - making ice cubes, washing salad and other food items that are not cooked and for brushing your teeth.

Bottled water

There is insufficient evidence or routine measurement to recommend bottled water as a safer option as some bottled water has been shown to contain higher number of bacteria than unboiled tap water (in Britain), therefore it would still be advisable to boil bottled water. Sparkling or carbonated water *might be* a safer option than still water as it is slightly more acidic.

When travelling abroad, carbonated water *may* be the safest option if local water is known to be of poor quality. Contaminated water can be a source of various infectious organisms as well as cryptosporidium. Boiling the water is advisable if possible.

Water Filters

General household free-standing water filters are designed to improve the taste of tap water. They are **not** designed to remove cryptosporidia. Submicron filters (with a mesh size of less than 1 micron) are necessary to remove cryptosporidia from water. Filters tested by the Department of the Environment are suitable for installation at home. One company that can provide and install them for you is called Fresh Water Filter Company Telephone 020 8597 3223 and you can visit their website at www.freshwaterfilter.com

It is important to follow the guidelines on the replacement and cleaning of filter cartridges.

At the Chelsea and Westminster Hospital, (including Kobler out-patients, day-care and Thomas Macaulay Ward), the Dean Street Sexual Health Clinic and the West London Centre for Sexual Health (Charing Cross) filtered table drinking water is available.

Other sources of Cryptosporidium

Water is not the only possible route of cryptosporidium infection. It is likely to be a relatively small risk compared to that associated with contact with stools of infected animals or people (take care when cleaning pet's litter trays or changing nappies) or swallowing contaminated water (recreational and lake/stream). Soil may also be contaminated - it is advisable to wash hands thoroughly after gardening or potting plants and ensure that salad items such as raw mushrooms are well washed.

Although better treatments for HIV have resulted in a decreased rate of cryptosporidium infection, it should be understood that for safe drinking water, boiling water is the only 100% guaranteed way of removing cryptosporidium. Prevention is better than cure.

This information was produced by the Information Exchange of the HIV/GU Medicine Directorate of the Chelsea and Westminster Hospital. For more information please call 020 3315 5929.

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