

Water-borne Diseases in British Columbia

What are water-borne diseases?

Water-borne diseases are any illnesses caused by drinking contaminated water.

The contamination can be by bacteria such as Salmonella or Campylobacter, viruses, or small parasites including Cryptosporidia, Giardia, and on rare occasions Toxoplasma.

How are they spread?

Most outbreaks of water-borne disease are caused by the contamination of drinking water systems with the feces of infected animals or people.

This is likely to occur where public and private drinking water systems get their water from surface waters, such as rain, creeks, rivers and lakes. These surface waters can be contaminated by infected animals or people.

Infected animals may be domestic pets, livestock, poultry, or wild animals like beaver, deer or rodents that defecate in or near surface water.

Runoff from landfills, septic fields, sewer pipes, residential or industrial developments can also sometimes contaminate surface water.

How common are water-borne diseases in British Columbia?

Outbreaks of water-borne disease happen from time to time in British Columbia, as well as other parts of Canada and North America.

Over the past decade water-borne outbreaks have been uncommon in British Columbia, mostly occurring where surface water sources have not been properly treated. Cases of water-borne disease that occur other than during an outbreak are difficult to identify, because most of the types of illness spread by water can also be spread by food or directly from other people or animals.

What are the symptoms of water-borne diseases?

Many people who get infected with the more common water-borne disease agents will have no symptoms at all, and probably will not even know

they have been infected. Over time, their bodies will gradually eliminate the infection and their health will not be affected.

For people who *do* get sick from water-borne disease, the symptoms vary depending on the infectious agent. For many water-borne diseases, symptoms begin from two to ten days after drinking the contaminated water, and may include diarrhea, stomach cramps, nausea, vomiting, and low-grade fever. People with toxoplasmosis may have fever, swollen glands and loss or blurring of vision.

Who are most severely affected?

Persons who have suppressed immune systems, such as persons who have HIV/AIDS, persons who have had an organ or bone marrow transplant, or who have had cancer treatment, are at greater risk from water-borne diseases.

For these people, infection may be more severe and may become life-threatening. Babies, the very elderly, and those whose health is fragile due to chronic disease may have more serious complications.

The risk of getting toxoplasmosis through drinking water is very rare. Toxoplasmosis is of particular concern during pregnancy, as a growing fetus can become infected with the toxoplasmosis parasite. This can happen if the mother is infected with the parasite while pregnant or before she becomes pregnant. This can lead to serious long-term complications for the baby if the disease is not detected and treated at an early stage. For more information on pregnancy and toxoplasmosis, see BC HealthFile [#43 Toxoplasmosis](#).

What should I do if I think I have a water-borne disease?

See your doctor as soon as possible if your illness is severe or prolonged, or if you have one of the above noted conditions that put you at increased risk.

Your local public health unit should also be notified so that the source of infection can be located and controlled.

How can I avoid catching water-borne diseases?

Do not drink water directly from lakes, streams, rivers, springs or ponds, which can all be infected by the feces of infected wild animals, pets, or humans, such as careless hikers. If your community has a boil water advisory or notice, or you are concerned about the quality of the water in your community, follow the instructions below to treat your water.

Who is responsible for providing safe drinking water?

The responsibility for providing safe drinking water rests with the local authority (Water Purveyor) that owns and operates the community's drinking water collection and distribution system.

The water purveyor can be your local or regional government, although many smaller public drinking water systems in British Columbia are owned and maintained by private individuals, water utilities or companies. These agencies are responsible for ensuring appropriate treatment processes for the water they distribute.

Homeowners with their own private water supply are responsible for their own water quality. See BC HealthFile [#45 Should I Get my Well Water Tested?](#)

Who should treat their water?

Water treatment is recommended for *anyone* who gets their drinking water directly from a surface source, such as a lake, river or stream.

People in any community where there has been public notice to boil water issued by the local Medical Health Officer should also treat their water.

Persons who have HIV/AIDS, persons who have had an organ or bone marrow transplant, or who have had cancer treatment, and who are concerned about the quality of the water in their community in *non-outbreak* settings should consider talking to their doctor about whether they should be treating their drinking water or using bottled water. They may be advised to boil their drinking water or use a distillation treatment device in their home.

Boiling is the best way to kill bacteria, viruses and parasites. Water should be boiled at a full boil for at least one minute. At elevations over 2,000 meters (6,500 feet) you should boil water for at least two minutes to disinfect it. *Note:* This is not appropriate for water that is obviously heavily polluted, or

subject to chemical contamination.

To remove the flat taste of boiled water, leave the boiled water in a clean covered container for a few hours or pour *cooled* boiled water back and forth from one clean container to another.

Water treatment devices (jug-type or built-in) are not a simple solution to this complicated problem. The jug/filter models do not remove many disease-causing organisms. The built-in models, which can be effective, are usually expensive, and require regular, thorough maintenance to continue to work well. If you plan to install a water filtration system in your home, it should be capable of removing any particles larger than one micron. Check with a reliable supplier who can help you with installation and ongoing maintenance.

Is bottled water an option?

People who don't want to drink water from the tap may also choose to buy bottled water. You can still use tap water for cooking, as long as it is brought to a boil, but use bottled water for drinking, brushing teeth, making ice cubes, and in recipes where water is required but is not brought to a boil.



BC Centre for Disease Control
AN AGENCY OF THE PROVINCIAL HEALTH SERVICES AUTHORITY

For more BC HealthFile topics visit www.bchealthguide.org/healthfiles/index.stm or visit your local public health unit.

Call the BC NurseLine to speak to a registered nurse, available 24-hours every day:

- In Greater Vancouver, call 604-215-4700
- In BC, call toll-free 1-866-215-4700
- Deaf and hearing-impaired, call 1-866-889-4700
- Pharmacist available 5pm to 9am every day
- Translation services in over 130 languages upon request.

Visit BC HealthGuide OnLine – a world of health information you can trust at www.bchealthguide.org