

## BACKCOUNTRY WATER TREATMENT

Passing birds, animals, or humans can contaminate all backcountry water sources, including fast-flowing, glacier-fed streams. We treat the water we use in camp for group consumption, but you are responsible for how and if you treat your water for personal use. **We have Aquamira drops available for purchase or loan, but there are many other options available to you.** Please take some time to learn more and decide which will be the best choice for you.

The less dirty and contaminated water is to start with, the more effective any treatment method will be. If possible, avoid still water, and use the clearest water available. When refilling your bottle on the trail or in camp walk upstream from any obvious contaminants.

### TREATMENT OPTIONS

	PROTOZOA	BACTERIA	PARTICULATE
<b>Boiling</b>	<b>yes</b>	<b>yes</b>	<b>no</b>
<b>Iodine/chlorine</b>	<b>most</b>	<b>yes</b>	<b>no</b>
<b>Chlorine dioxide/mixed oxidants</b>	<b>yes</b>	<b>yes</b>	<b>no</b>
<b>0.5mi filter and pre-filter</b>	<b>yes</b>	<b>most</b>	<b>yes</b>
<b>0.2mi filter and pre-filter</b>	<b>yes</b>	<b>yes</b>	<b>yes</b>
<b>0.1mi filter and iodine/chlorine</b>	<b>yes</b>	<b>yes</b>	<b>yes</b>
<b>Ultraviolet (UV) light</b>	<b>yes</b>	<b>yes</b>	<b>no</b>
<b>UV light and pre-filter</b>	<b>yes</b>	<b>yes</b>	<b>yes</b>

**Chemical treatments** don't require any pumping to use, but they do require time to act – from a few minutes to several hours, depending on how cold or dirty the water is.

Chemicals are intended for short-term use of a few days or a few weeks. For many people, any health risk associated with small amounts of exposure to chemicals is outweighed by the benefit of protection against pathogens. But for some, those who are pregnant or very young, or who have pre-existing health problems, this may not be true. If you are concerned, consult your doctor before using chemical treatments.

**Chlorine** can kill many of the micro-organisms that help you digest food, resulting in digestive trouble. In water, chlorine also forms some by-products that are suspected carcinogens.

**Iodine** comes in easy-to-use drops or tablets. Because many people don't like the taste it

adds to the water neutralizing tablets are available. It takes about 20 minutes to treat 32oz. of water

**Chlorine dioxide** is unstable, so you prepare it in the field by mixing two component chemicals from a kit. Since the active ingredients in chlorine dioxide break down quickly, it usually won't kill beneficial micro-organisms in your digestive system. It doesn't leave any unpleasant taste or odor in your treated water.

We have Aquamira Water Treatment Drops available. They are a chlorine dioxide treatment method that is prepared in the field and takes about 25 minutes to react.

**Filters** are designed to strain out pathogens as water is forced through them. Like all mechanical or electronic items, filters can fail or be damaged by impact. Many people carry compact water treatment tablets as a back-up. If you are planning on bringing a filter please be familiar with it's use before hand.

**\*UV Light Purifiers** are portable devices designed to treat small amounts of water, 0.5 or 1L at a time. By beaming UV light through water, they damage the DNA of microbes, pathogens and viruses, so they cannot reproduce and cause illness. The same technology has been used for decades in commercial bottling plants and municipal water systems.

- They avoid the taste, health concerns, and waiting times of chemical treatments.
- Don't require pumping, and don't need to be disassembled and dried when you return home.

*\*If you are planning on investing in a new water treatment devise we highly recommend the SteriPEN Adventurer Opti. We have found these to be a very reliable method of treatment that is quick, easy to use and safe. A few tips if you decide on this treatment method.*

*-Invest in the Adventurer Opti, the other models don't seem to be as reliable and tend to turn on while in your pack and the batteries are quickly drained.*

*-You will need a wide mouth bottle in order to be able to place your Steri-Pen far enough into the bottle to treat the water. I have found that it helps to have a clear, colored plastic bottle to see the indicator lights. The colored Nalgene's work best. Stay away from the milky colored opaque bottles. It's also a good idea to carry a spare battery.*

## The Importance of Electrolytes

Electrolytes are analogous to the motor oil in your car—they don't make the engine run, but they're absolutely necessary to keep everything running smoothly. Proper functioning of the digestive, nervous, cardiac, and muscular systems depends on adequate electrolyte levels.

As many of you may already know Montana has a very arid climate, with the heat of the day often lasting well into the afternoon. We will be hiking through open meadows and old burns during the middle of the day and you will probably sweat more then you

realize. While pushing the fluids it's also a good idea to think about replenishing your body's electrolyte supply. We suggest investing in some type of electrolyte supplement and offer Hammer Nutrition's Electrolyte Fizz Tabs at \$4 a tube. (Each tube contains 13 tabs). Add these tabs to your water bottle at any time of day or when you feel yourself start to drag. I am a big fan personally and am always surprised by what a difference they make in how I feel.