

# BACKCOUNTRY WATER

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When backpacking in the backcountry or extended camping in a “dry” camp, it is sometimes necessary to replenish drinking water. In hot climates an individual needs to drink about 1 quart of water an hour while backpacking. At 8 pounds per gallon of water, it would be almost impossible to carry all the liquid necessary. Replenishing drinking water requires purification to remove bacteria, germs, and parasites. There is nowhere that water, except the extreme poles, is safe enough to drink without purification.

One of the biggest threats to outdoor enthusiasts is Giardia. Giardia is a protozoan parasite that lives in water. This parasite infects the intestines of its host. The lifecycle includes a swimming stage and reproduces by cysts. The danger of Giardia includes violent diarrhea which can lead to dehydration. Dehydration can become life threatening in the backcountry.

There are 4 common methods used by backpackers to purify water. These include (1) boiling, (2) chemical, (3) filtration, and (4) Ultraviolet (UV) Light. Each of these methods has their advantages and disadvantages.

## **BOILING**

Boiling water to purify it has been used as long as people have associated dirty water with illnesses. To purify water by boiling, the hiker must bring the water to a **Rolling Boil** for at least **5 Minutes**. The disadvantage of this method is carrying enough fuel to boil enough water for the excursion.

## **CHEMICAL ADDITIVES**

One of the most common chemical additives is iodine tablets. These are cheap, lightweight, and fast to use. The major disadvantage is the taste left behind. Some individuals will add flavored drink mixes to hide the taste, but this should only be done after the purification process is complete.

## **FILTRATION**

Water filters are easy to use and have become more affordable. Water filters work by pumping water from a source, through a filter, and into a clean receptacle. If pumping from a container filled with unpurified water, it is important to keep the contaminated container away from other utensils. It only takes a couple of drops of contaminated water to infect the unwary hiker. The major disadvantage of a water filter is that it is not always foolproof and can let some germs pass through. Another disadvantage is that it can take a substantial amount of time to purify enough water for cooking and to fill water bottles.

## **ULTRAVIOLET (UV) LIGHT**

Ultraviolet lights are the newest tools used to purify water. The devices are light weight and work by inserting a UV light in a water bottle for a minute or two. These types of purifiers run off batteries and are still relatively expensive. There are several disadvantages to UV purifiers.

The first is that water must be purified in water bottle size quantities. Often hikers dip their water bottles in an unpurified water source before using the device, forgetting the unpurified water on the outside of the container. A hiker can become infected by the unpurified water on the outside when drinking from it or by transferring cysts to the hands and then to the mouth.

The second issue is that a UV device is not as effective when trying to purify murky water.

The third problem is that it is a mechanical device. Batteries could die, electronic components could fail, or the light itself could have a problem. It is advisable to carry iodine tablets as a backup when relying on a UV water purification system.