

Water Purification

Use one of these techniques to make sure your water is safe to drink.

Clean drinking water. This should be at the top of everyone's 10 Essentials list. It keeps you going on the trail and staves off needless injuries associated with dehydration. Luckily, there are now many simple and convenient ways to purify water obtained along the trail when you're out for a nice hike. You can choose from chemical treatment (iodine or chlorine), filtration, ultraviolet light, or boiling. Each of these methods is very effective when used properly. You don't need to use all four, just choose one that's easy for you to use and stick with it faithfully. Just one lapse in purifying your water could take you off the trail for quite a while.

Dehydration is a preventable and often overlooked problem while hiking. Symptoms of dehydration include dizziness, headaches, chapped lips, crankiness—even nausea. Dehydration is a gateway sickness that can lead to the even more serious conditions of heat stroke or heat exhaustion. Be sure to familiarize yourself with all the watering holes on a trail – you never know when you might run out.

Backcountry water hasn't been through a treatment facility so you'll need to purify it to avoid water-borne illnesses such as Giardia. Here are the typical methods for making water potable:

- **Bring to a rolling boil for one minute.** Advantage: foolproof. Drawbacks: uses a lot of fuel, is inconvenient in mid-hike, and on a sweltering summer day, hot water does not satisfy like crisp, cool spring water. Plus, you'll still have to filter out all solid particles if drawing from a muddy or questionable water source.
- **Iodine solution, tablets, crystals.** Iodine is relatively convenient and comes in a number of forms that can easily fit in your budget. It kills bacteria, viruses, and protozoa, except *Cryptosporidium*. Advantages: lightweight, easy to use. Drawbacks: 20- to 30-minute delay before drinking, not safe for pregnant women, and some tablets leave a strong aftertaste that some people dislike. After dropping a tablet in your bottle and shaking, tip the bottle upside down and unscrew the lid slightly. This will allow the iodine to get onto the threads of the cap.



- **Chlorine drops.** Kills bacteria. Advantages: lightweight, inexpensive, and easy to find since it is just household bleach. Drawbacks: 20- to 30-minute delay before drinking, requires counting many drops if treating several bottles as it is very poisonous. Similar to iodine.
- **Water filter.** Good water filters will remove protozoa and bacteria such as Giardia, cryptosporidium, and salmonella. Carbon removes chemicals and bad tastes, and iodine-coated screens add virus protection. Advantages: After treating, no delay before drinking, removes dirt, and water tastes clean. Drawbacks: heavier than iodine/chlorine, more expensive, manual pumping generally required, filters need to be cleaned after outings and replaced after a certain number of gallons.
- **Ultraviolet (UV) Light.** This modern system looks like a small flashlight that you simply swish around in the water for about a minute to kill protozoa, bacteria, and viruses. Advantages: extremely lightweight and simple to use. Drawbacks: requires batteries which may run out and it also doesn't filter out solid particles in the water.

Remember: after collecting unpurified water, wash your hands as well as anything else with which the unpurified water has come into contact (such as the pot in which you collected the water). Similarly, it doesn't do any good to put clean, potable water into a water bottle which previously contained untreated water and hasn't been thoroughly washed.

