

Water Purification

In order to drink the water, you should be prepared to treat it. There are numerous methods of water purification, described below.

Please note the use of iodine, which is cheap and freely available. Recommended as a source of emergency water purification.

Boiling

Boiling is the most certain way of killing all microorganisms. According to the Wilderness Medical Society, water temperatures above 160° F (70° C) kill all pathogens within 30 minutes and above 185° F (85° C) within a few minutes. So in the time it takes for the water to reach the boiling point (212° F or 100° C) from 160° F (70° C), all pathogens will be killed. No need to keep the water boiling!

Chemical Purification

There are two types of chemical treatment: those using iodine and those using chlorine. There are a variety of products on the market, so follow the directions on the bottle.

General Chemical Treatment Procedures

1. The effectiveness of all chemical treatment of water is related to the temperature, pH level, and clarity of the water. Cloudy water often requires higher concentrations of chemical to disinfect.
2. If the water is cloudy or filled with large particles, strain it, using a cloth, before treatment. Large particles, if swallowed, may be purified only "on the outside."
3. Add the chemical to the water and swish it around to aid in dissolving.
4. The water should sit for at least 30 minutes after adding the chemical to allow purification to occur. If using tablets, let the water sit for 30 minutes after the tablet has dissolved.
5. Chemically treated water can be made to taste better by pouring it back and forth between containers, after it has been adequately treated. Other methods include adding a pinch of salt per quart or adding flavorings (e.g., syrup mix, etc.) after the chemical treatment period.

Iodine Treatment

Iodine is light sensitive and must always be stored in a dark bottle. Iodine has been shown to be more effect than chlorine-based treatments in inactivating cysts. Let water stand for at least **30 minutes** before use.

Generally, the procedure is as follows:

Iodine Preparations		
Preparation	Iodine	Amount/Liter
Iodine Topical Solution	2%	8 drops
Iodine Tincture	2%	8 drops
Lugol's Solution	5%	4 drops
Povidone-Iodine (Betadine®)	10%	4 drops

*Further clarification, contact:
Dr Charles Johnson
Emergency Physician
Charles@hopeambulance.com*

