

# Field Water Treatment

## Possible Contaminants in backcountry water

- Chemicals
- Viruses
- Bacteria
- Amoebic Dysentery
- Giardia
- Cryptosporidium

## Symptoms of Giardiasis and Cryptosporidium

- Severe diarrhea
- Abdominal cramps
- Fatigue
- Weight loss
- Nausea
- Flatulence
- Vomiting
- Belching

## Water Treatment Techniques

**Boiling**--Just bringing water to a boil, even at high altitudes, will kill giardia, but won't kill many viruses and bacteria. You need to boil water for 5 minutes at sea level or 10 minutes at high altitude to kill most harmful organisms.

**Chemical Disinfection**--Be sure to use the proper dosage and to wait for enough time to pass after adding the chemicals. The necessary time depends on water clarity and temperature. Read the labels.

Chlorine is ineffective against Giardia

Both Iodine and Chlorine are ineffective against Cryptosporidium

**Filtration**--In order to filter out giardia, cryptosporidium, and other parasites, the absolute (not nominal or average) pore size should be smaller than 2 microns. An absolute pore size of about 0.4 microns or smaller will filter out most bacteria as well. Be sure to clean and backwash the filter when you get home.

Filters are ineffective against viruses.

## Treatment for diarrhea in the field:

- Fluids and electrolytes
- Loperamide (Imodium) or Lomotil.
- Liquid diet at first. When stools become soft, add bread, bananas, tortillas, potatoes, etc.

***If you get sick, tell your doctor you have been in the backcountry.***

## Treatments (when you get home):

Amoebic Dysentery (1 week to many months incubation) (recovery in months without drugs)  
Treated with metronidazole (Flagyl).

Giardia (5-7 days incubation) (recovery in 1-3 weeks without drugs, 1-3 days with drugs)  
Treated with metronidazole (Flagyl) or furazolidone (Furoxone).

Cryptosporidium (2-4 days incubation) (recovery in 7-10 days).  
Cryptosporidium has no cure.

# OVERVIEW WATER TREATMENT METHODS

## Filters/Pumps

Filter	Effective (1)	Type	Weight (2)	Price	Replacement Filter Cost
First Need Deluxe	A,B,C,D	Structured matrix micro-strainer	15	\$96	\$39
Katadyn PF Pocket Filter	A,B,C	Ceramic micro-strainer	23	\$199	\$139
MSR MiniWorks Ceramic	A,B,C	Ceramic w/carbon core	15.5	\$70	\$35
MSR WateriWorks II Ceramic	A,B,C	Membrane/Ceramic w/carbon core	17.5	\$130	\$35
Pur Explorer Purifier	A,B,C,D	Tri-iodine Resin plus micro filtration	25	\$130	\$50
Pur Hiker	A,B,C	Pleated glass fiber	14.4	\$60	\$30
Pur Scout Purifier	A,B,C,D	Iodinated resin matrix/carbon	14	\$66	\$45
Pur Voyager Purifier	A,B,C,D	Iodine resin/pleated glass fiber	12.5	\$75	\$40
SweetWater Guardian Filter	A,B,C	Labyrinth w/carbon	11	\$60	\$33
SweetWater Guardian Plus Purifier	A,B,C,D	Labyrinth w/iodine matrix/carbon	15	\$73	\$35

## Filters Bottle

Filter	Effective (1)	Price	Replacement Filter Cost
SafeWater Anywhere	A,B	\$35	\$20
Aqua-DOD	A,B	\$25	\$25
CrystalPure	A,B,C	\$30	\$30
Seychelle's	A,B	\$30	\$30

## Chemical Treatment

Filter	Effective (1)	Contents	Weight (2)	Price
Polar Pure	A,B,D	Crystalline iodine/inert ingredients.	3	\$9.50
Aquamira	A,B,C,D	Chlorine Dioxide	3	\$13
Portable Aqua	A,B,D	Iodine	3	\$5

- Effective** A. Giardia B. Cryptosporidiosis C. Bacteria D. Virus
- Weight** oz
- Sources**
  - Pacific Crest Trail Association: <http://www.pcta.com>
  - Thru-Hiker: <http://www.thru-hiker.com>
  - Backpacker 2000 Gear Guide