Making Drinking Water Safe During A Boil Water Advisory When You Can't Boil It

What is a boil water advisory?

A boil water advisory is issued when harmful germs (e.g., *E.coli* bacteria, *Giardia* parasite) may be in a drinking water supply. Drinking water contaminated with these germs can make people and animals very sick. Boiling will kill the germs and make the water safe to drink after cooling.

When a boil water advisory has been issued, how should the water be used?

When a boil water advisory has been issued, **do not** use the tap water to:

- drink
- prepare baby formula
- make juice
- make ice
- prepare foods
- wash fruits or vegetables
- brush teeth
- fill a wading pool
- give to pets

The best way make the water safe is to **bring it to a rapid rolling boil for at least one minute**. During power outages or other situations (e.g., extreme weather), you might not be able to boil water to make it safe. If this happens, you can:

- use disinfectants, UV light and/or filtration to kill most germs that may be in the drinking water
- buy bottled water from a safe source

Will chlorine and iodine make the water safer?

Chlorine and iodine work well to kill bacteria and viruses. However, these disinfectants will not kill parasites (e.g. *Giardia, Cryptosporidium*) that may be present in the water. If boiling isn't possible, the best way to make water safe is with a combination of treatments.

When I use chlorine or iodine to disinfect water, what treatment can I use to remove parasites?

When using chlorine or iodine to disinfect water, use another treatment listed below to remove parasites if possible. The water must be treated for parasites **before** disinfecting with chlorine or iodine.

- **Filtration**: NSF/ANSI 53 certified filters rated for 1 micron absolute or smaller or NSF/ANSI 58 certified reverse osmosis drinking water treatment systems can be purchased from water treatment suppliers, hardware stores, or camping supply stores. Follow manufacturer's direction for use. After filtration treatment, disinfect the water with chlorine or iodine.
- **Ultraviolet Disinfection**: Ultraviolet (UV) disinfectant pens can be purchased at camping supply stores. The water needs to be very clear (not cloudy) for the UV treatment to work. Let the water sit in a container until the sediment settles **before** it is treated. UV disinfection pens are not usually certified by a recognized agency, therefore manufacturer's instructions must be follow. After UV treatment, disinfect the water with chlorine or iodine.

DISINFECTING DRINKING WATER WITH CHLORINE

Chlorine Water Purification Products

Chlorine water purification tablets or drops can be purchased from most outdoor or camping supply stores. Products should be NSF/ANSI 60 certified for use in drinking water treatment. Follow the directions on the package for volume of water and contact time.

Household Bleach

To chlorinate your water using bleach, you will need:

- a 1 litre container
- a medicine dropper
- unscented, household bleach (5.25% sodium hypochlorite)

If your water is **clear**:

1. Add **2 drops** of bleach to **1 litre** of water.
2. Mix the water thoroughly and let it stand for **30 minutes**. If there is a slight chlorine smell and the water looks clear, it is safe to drink.

If your water is **cloudy**:

1. Add **4 drops** of bleach to **1 litre** of water.
2. Mix the water thoroughly and let it stand for **30 minutes**. If there is no chlorine smell, add 4 more drops of bleach and let the water stand for **another 30 minutes**. If there is a slight chlorine smell and the water looks clear, it is safe to drink.

DISINFECTING DRINKING WATER WITH IODINE

Water may be disinfected with iodine using tincture of iodine (2% in liquid form) or iodine tablets. These may be purchased from drugstores and some camping supply stores. If using tablets, follow the directions on the package.

Iodine Tincture

Liquid iodine works best when added to warm water at a temperature of 20˚C (68˚F).

- To treat **warm** water, add **5 drops** (0.25 mL) of iodine to **1 litre** of water. Mix and let stand for at least **30 minutes** before drinking.
- To treat **cold** water at a temperature between 5 to 15˚C (41 to 59˚F), add **5 drops** (0.25 mL) of iodine to **1 litre** of water. Mix and let it stand for at least **40 minutes** before drinking.
- If the water is **cloudy**, add **10 drops** (0.50 mL) of iodine to **1 litre** and let it stand for the times listed above, depending on whether the water is warm or cold.

*** Do not** use iodine for more than **3 weeks** (in controlled doses) because there is a risk of thyroid problems and iodine sensitivity. **Do not** drink water disinfected with iodine if you:

- are pregnant
- have a thyroid problem
- are hypersensitive to iodine

This material is for information purposes only, and should not be used in place of medical advice, instruction, or treatment. If you have questions, talk with your doctor.

For more information about using water during a boil water advisory, contact the local Environmental Health Officer.

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