

How Long Do You Need To Boil Water?

From Survival Topics at <http://www.survivaltopics.com>

I frequently come upon bad advice about boiling water to make it safe to drink. Having enough safe drinking water is of utmost importance to any survivor. Proper information is very important and for that reason I am writing this Survival Topic in order to set the record straight.

Boiling Water is the Best Method

As some of us know, boiling water is surest and most effective method of destroying microorganisms including disease causing bacteria, viruses, protozoan's, and parasites.

Modern filtering devices and the chemical treatment of water come in a poor distant second to the ancient and almost foolproof method of boiling water to make it safe to drink. And importantly to the survivor, the boiling of water requires no special apparatus, training, or difficult to find chemicals. The means to boil water for safe drinking are usually close at hand:

- A source of heat
- A vessel to hold the water.

Couldn't be simpler. Or is it?

Commonly Stated Water Boiling Times

I am always hearing different amounts of time that water needs to be boiled to kill disease organisms. Recently I perused various publications put out by the government and trusted health organizations. What is glaringly obvious is they disagree on the length of time water should be boiled to make it safe to drink.

Common water boiling times that are stated include:

- "Boil water for 10 minutes" is a common statement
- "5-minutes of boiling" is also frequently heard
- "Boil the water for 20 minutes". Would there be any left?
- "A rolling boil for 1 minute". Is it enough?
- "When at high altitudes you need to boil water for twice as long"

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Which of the above statements are true? None. That's right. Following any of the above advice for the boiling times of water is a big waste of fuel (and a waste of water if you are short on water cannot afford to lose any to evaporation).

Throughout the world whole forests have been cut down for firewood in order to boil drinking water. Hikers and mountaineers have used up precious fuel boiling water for inordinate amounts of time. In a survival situation you cannot afford to waste valuable resources and energy. With all the bad advice around, many thousands of trees and other fuels and a huge amount of effort have been wasted.

See http://www.farmradio.org/english/radio-scripts/52-9script_en.asp

Correct Water Boiling Time

whole forests have been cut down for firewood in order to boil drinking water The correct amount of time to boil water is 0 minutes. That's right, zero minutes.

*"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, **even at high altitude.**"*

Source: <http://www.princeton.edu/~oa/manual/water.shtml>

'What /s not well known is that contaminated water can be pasteurized at temperatures well below boiling, as can milk, which is commonly pasteurized at 71 °C (160°F)...'.

Source: http://solarcooking.wikia.com/wiki/Water_pasteurization

What is not well known is that contaminated water can be pasteurized at temperatures well below boiling

The fact is, with a water temperature of 160 to 165 degrees F (74 C) it takes just half an hour for all disease causing organisms to be inactivated. At 185 degrees this is cut to just a few minutes. By the time water hits its boiling point of 212 F (100 C) - plus or minus depending upon pressure or altitude - the water is safe. Even at high altitudes the time it takes for the water to reach a rolling boil and then cool means you can safely drink it.

Lacking a thermometer to measure water temperature, you only need to get your water to a rolling boil. By that point you know the water is hot enough and that the disease organisms in your water were destroyed quite some time earlier. End of story, turn off the heat. Stop wasting fuel. Let the water cool down. Your water is safe to drink!