



Education

Burn Safety: Hot Water Temperature

The leading cause of deaths and injuries to children at home is accidents. Scalding from hot water is one of the most dangerous of these accidents. The following chart shows just how dangerous hot water can be.

Temperature of Water	Time to Cause a Bad Burn
150°F (66°C)	2 seconds
140°F (60°C)	6 seconds
125°F (52°C)	2 minutes
120°F (49°C)	10 minutes

Small children can get to sinks or bathtubs quickly. They can get badly burned before they can get out of the water. Infants are unable to move away from hot water if it is accidentally left on too hot or if the cold water is unintentionally turned off. Here are some tips to keep in mind:

- When using tap water, always turn on the cold water first, then add hot. When finished, turn the hot water off first.
- Do not use hot steam vaporizers. They can cause steam burns. Use a cool mist vaporizer.
- Never leave a child alone in the bathroom for any reason. They are at risk for getting burned by hot water or drowning.

If your hot water heater is set at 150°F (66°C) and your child comes in contact with the hot water for just 2 seconds, your child will get burned badly enough to need medical treatment.

Here are some common questions and answers about hot water heater settings.

1. Q: If I turn the hot water heater setting down, won't I have trouble getting the dishes in the dishwasher and the clothes in the washing machine clean? A: No. The major soap manufacturers design their soap to work best in water between 120°F and 125°F (49°C to 52°C).
2. Q: Will my baby get more colds if the hot water isn't hot enough? A: No. Hot water has nothing to do with getting colds.
3. Q: Will we run out of hot water any sooner if we turn the temperature down? A: Yes, you will. But this may be a small price to pay to protect your child.
4. Q: Will I save any money on utility bills by turning down the temperature setting? A: Yes. On the average, for every 10°F (6°C) that you turn the temperature down, you will save 4% on the water-heating portion of your utility bill.
5. Q: I don't know where the thermostat of my hot water heater is, and I don't know how to tell at what temperature it is set. How can I tell? A: First measure the hot water temperature. The best way to do this is to measure it in the morning, before anyone in your home has used any hot water. Turn on the hot water at the kitchen sink and let it run for 2 minutes. Then, using either an outdoor thermometer or a candy thermometer, hold the thermometer in the stream of the water until the reading stops going up. If your water-heater setting is at a safe level (between 120°F and 125°F, or 49°C to 52°C), you don't have to do anything. There is no advantage to setting the thermostat below 120°F (49°C). If your hot water setting is too high, here are some tips on how to find the thermostat and turn it down.
 - o Gas hot water heaters usually have a thermostat outside the tank at the bottom. Electric water heaters

- usually have either two panels screwed to the top and bottom of the tank or one panel along the side of the tank. Thermostats are located under these panels.
- o The thermostat should be set on the "low" setting or within the "energy efficient range." If the temperature at the kitchen sink is too hot at this setting, adjust the thermostat to a lower setting. After changing the thermostat setting, you can test the hot water temperature again about 24 hours later. If you test it in less than 24 hours, you may not get an accurate reading. Continue to test the water temperature and adjust the thermostat setting until the water is no hotter than 125°F (52°C). If you get it below 120°F (49°C), then turn it back up a small amount.

Please, take some time to think about the risk to your child from hot water in your home. Think about whether the convenience of having lots of very hot water is really worth the added risk that you might be taking with your child's health. Your child is at less risk for hot water burns by age 4.

Pediatric Advisor 2006.4; Copyright © 2006 McKesson Corporation and/or one of its subsidiaries. All Rights Reserved. Written by Edward R. Christophersen, PhD. This content is reviewed periodically and is subject to change as new health information becomes available. The information is intended to inform and educate and is not a replacement for medical evaluation, advice, diagnosis or treatment by a healthcare professional.