

Beware of Hot Water Temperatures

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. Small children are busy and can get to sinks or bathtubs quickly. They can burn themselves severely 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. 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

This table demonstrates that water temperature can make a difference between whether or not a child gets burned, should he or she come into contact with hot water. If your hot water heater is set at 150 degrees F (66 degrees C) and your child comes in contact with the hot water for just 2 seconds, your child will receive a burn bad enough to require medical treatment.

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

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 and 125 degrees F (49 to 52 degrees C).

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.

Q: Will we run out of hot water any sooner if we turn the temperature down?

A: That depends. In many newer homes, there is a temperature regulator installed by the water heater. This allows you to set the maximum temperature running through the hot water pipes, without having to turn down the water heater itself. In older homes without this regulator, you may run out of hot water a little sooner. But this is a small price to pay for the safety of a child.

Beware of Hot Water Temperatures (continued)

Q: Will I save any money on utility bills by turning down the temperature setting?

A: Yes. On the average, for every 10 degrees F (6 degrees C) that you turn the temperature down, you will save 4% on the water-heating portion of your utility bill.

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 and 125 degrees F, or 49 to 52 degrees C), you don't have to do anything. There is no advantage to setting the thermostat below 120 degrees F (49 degrees C). If your hot water setting is too high, here are some tips on how to find the thermostat and turn it down.

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. As mentioned above, in most new plumbing installations, there is a temperature regulator installed on the pipe bringing hot water out of the heater. If this is present in your home, you can adjust the hot water temperature here as well.

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 will not get an accurate reading. Continue to test the water temperature and adjust the thermostat setting until the water is no hotter than 125 degrees F (52 degrees C). If you get it below 120 degrees F (49 degrees 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 no longer at significant risk for hot water burns by the age of 4 years. Then you can turn your hot water heater up to a higher temperature.

Written by Edward R. Christophersen, Ph.D.