Lowering the thermostat can prevent scalding and cut hot water costs

Tap water can be hazardous to your health—if it’s too hot, that is.

Thousands of Arizonans have gotten that message in the past year and a half, along with the suggestion to turn their hot water heaters down to the range of 124 to 130 degrees Fahrenheit. This simple adjustment for safety’s sake saves energy dollars as a bonus.

Two years ago, four out of five homes had tap water hot enough to severely scald skin. Many had, and still have, water hot enough to kill. About 3,000 Americans a year are seriously burned by tap water. About 70 of them die. Most of the victims are less than five years old, but anyone can be burned. Tap-water burns are usually more extensive than other burns because most of them happen in the bathtub or shower, where much of the body is exposed at once to the hot water.

“The tragedy of tap-water burns is that they are 100 percent preventable,” said UA Extension Health Specialist Bernice Epstein. “Water that is 125 degrees is safe, and you don’t need it any hotter to wash dishes, most clothes, or people.”

Operation Scald

A public-awareness campaign in Arizona that Epstein has helped lead has prompted many families to lower their hot water temperature, but many homes still have tap water at 130 degrees or more. That’s hot enough to cause third-degree burns within 30 seconds. Some even have water at 156 degrees or more, which scalds in one second or less.

Much of the work to warn southern Arizonans about needlessly dangerous hot water has come from Operation Scald, co-sponsored by Tucson’s Casa de los Ninos Crisis Nursery and the UA Cooperative Extension Service. Operation Scald works with schools, power companies, elected officials and mass media.

Last year, 40,000 Tucson grade-school and Kindergarten pupils carried home Operation Scald letters with information about lowering water-heater temperatures. The letter described the expected effects on safety, energy costs and washing. All 175 daycare centers in the Tucson area got copies of the same information. Warnings about too-hot tap water have been carried by many newspapers, newsletters, and radio and television stations in the state. Members of the Pima County Pediatric Society have posted Operation Scald information in their waiting rooms.

Utility companies are spreading the word, too. The Tucson Electric Power Company has added a hot-water alert page to its appliance brochure. In May, Southwest Gas Corporation enclosed a similar message when mailing monthly bills to 198,000 customers in Arizona and 170,000 more in California and Nevada.

Burned Children

UA Cooperative Extension Service activity on this topic grew out of a suggestion to Coconino County Extension Agent Eric Schwennesen from Dr. Jean Van Duzen of the Navajo American Indian Health Service in Tuba City. Van Duzen’s concern resulted from the boom in home building on the reservation that was increasing the availability of hot tap water and consequently the risk of tap-water burns.

Epstein and Extension Safety Specialist Mark Lloyd have worked together to find and distribute accurate information about home hot water.

Some of the serious tap-water burns to Arizona children are cases of child abuse, but in almost half of the burns to children, the victim or another child turned on the water.

“Being careful is not enough!” said Epstein. “The most effective prevention of tap-water burns doesn’t depend on cooperation from the child. It is simply to reduce the temperature of the water at its source, the
hot-water heater.” Unlike many safety precautions, you only have to do this once.

Temperature controls on most water heaters do not indicate the heat in degrees. “Warm” may mean 130 degrees or more. Even models that do indicate degrees may not give an accurate measure of the temperature of the water coming out of the tap.

“The safest way to measure the tap water’s temperature is with a candy, meat or water thermometer,” said Epstein. “Run the hot water two or three minutes before running it over the thermometer tip. If the water is 130 degrees or more, turn down the control on your hot-water heater and test again the next day.”

Consequences

Turning down the water temperature has consequences besides safety. There are three catches and one big bonus.

The catches:
1. You will get slightly less hot water delivery capacity because you will be mixing less cold water with the hot to get a comfortable temperature. If your hot-water use at a particular time of day is near the capacity of your heater, lowering the temperature could make you run out of hot water. To avoid this problem, families can schedule baths and showers so they don’t all occur at once.

2. Cooler water doesn’t kill as many germs in the laundry as very hot water, so when you are washing diapers or there is illness in the family, add a disinfectant such as chlorine bleach to the washwater. Actually, most laundry will get as clean at 80 degrees as at 125 or higher, so you can cut energy costs substantially (8 to 9 percent for an average consumer) by using a warm wash and cold rinse instead of a hot wash and hot rinse.

3. If you use an automatic dishwasher, you may get more spots on glassware using 125-degree water than using hotter water. The dishes will be just as sanitary, though. Some dishwashers have built-in heat boosters. If you wash by hand, you probably use water at 125 degrees or less anyway. Water that is 130 degrees is painful.

The bonus for using safer water is, of course, using less energy. Every 10 degrees the hot-water temperature is lowered from 150 degrees cuts the heating cost by about 4 percent. If all of the water heaters in the country were adjusted from their 1978 settings just down to 130 degrees, the energy saved would be the equivalent of about 88,000 barrels of oil every day. Adjusting to 125 degrees would save thousands more.

“The energy savings are important, but it is those 70 deaths and 3,000 injuries a year that Operation Scald is going after,” said Epstein. “We have information, audio-visual material and moral support we would love to share with anyone who wants to help spread the word.”