

Home hot water temperatures remain a burn hazard for young and elderly

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Home hot water heater temperatures are too high, warns a team of researchers from the Johns Hopkins Bloomberg School of Public Health. Despite the adoption of voluntary standards by manufacturers to preset hot water heater temperature settings below the recommended safety standard of 120°F, temperatures remain dangerously high for a significant proportion of homes, presenting a scald hazard for young children and the elderly.

The report is published in the March 2013 issue of *Journal Of Burn Care Research*.

In the U.S., tap water burns cause an estimated 1,500 hospital admissions and 100 deaths per year and the [economic burden](#) stemming from these burns is tremendous. According to the researchers, human exposure to hot water at 140°F can lead to a serious burn within 3 seconds, and at 120°F a serious burn can occur in about 10 minutes. Young children and older adults have thinner skin which burns more quickly putting them at increased risk.

"Hot [water temperatures](#) above the Consumer [Product Safety Commission](#)'s recommended 120°F were observed in 41 percent of homes we surveyed, including 27 percent of homes with temperatures at or above 130°F. We also found renters were less likely to have safe hot water temperature than homeowners," said Wendy Shields, MPH, lead author of the study and an assistant scientist with the Bloomberg School's Department of Health Policy and Management. "Delivering hot water at

a consistent temperature is difficult. As a hot water tank is depleted, replenished and reheated, water temperature will not be constant throughout the tank. In addition, water heater thermostats are not designed to provide precise estimates of water temperatures, making it difficult for residents to assess the exact temperature."

In a community trial to improve home safety, researchers examined the temperature of hot water using a candy thermometer and recorded the characteristics of the hot water heater including the type, date of manufacture, capacity and descriptors used on the temperature gauge in 708 Baltimore city homes. Demographic data such as the household size, income and home ownership status was also documented. Researchers found that despite the fact that 99 percent of the water heaters examined in the study were purchased after the voluntary standard was implemented, hot water temperatures remained dangerously high for 4 out of 10 homes. Gas water heaters were less likely to have safe temperatures and water heaters that held fewer gallons per person were more likely to be above the recommended 120°F.

"Given the limitations of reducing tap water temperature through current thermostat technology alone, other existing strategies should be prioritized," said Shields. "One potential solution is to equip faucets with anti scald devices, such as thermostatic mixer valves, anti-scald aerators or scald guards, but until engineering solutions can be implemented on a large-scale, attention must be paid to educational messages. To prevent scald burns, families should be encouraged to test [hot water](#) temperatures after adjusting gauges to insure that a safe temperature is achieved."

More information: "Still too hot: Examination of water temperature and water heater characteristics 24 years after manufacturers adopt voluntary temperature setting," *Journal Of Burn Care Research*, 2013.

Provided by Johns Hopkins University Bloomberg School of Public Health

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