Epilepsy and Thermal Burns

My name is Sarah. I am in my twenties, and am a registered nurse and an occupational health nurse. (Occupational health nurses look after employee and employer health, mainly giving first aid and carrying out safety checks in the workplace.) I have had epilepsy since I was 21 years old and despite my nursing background, I did not use my safety knowledge to prevent an accident that occurred last year. There is no known cause of my epilepsy and I don't have auras. I have only had three seizures, many years apart but only my first has been witnessed. I have mainly grand mal seizures but may have had a partial complex seizure in July 1995. This seizure changed my life. It took place in the bathroom and I sustained second and third degree burns, [partial and full thickness burns] to most of my body.

I have written this short article in the hope that it will help prevent other people with epilepsy from being burnt - whether it be in the shower, bath, with hot drinks, kettles, fireplaces or radiators.

Thermal burns

Eighty percent of burns are tap water burns which occur in the bathroom and are usually worse than other types. They typically cover larger areas of the body and involve more 'full thickness burns'. (1)

Many household water heaters supply water at about 149 - 167 degrees Fahrenheit. Yet around 104 degrees will provide a comfortable shower. The problem of thermal burns can be solved. It involves turning the temperature down on your thermostat or fitting safety devices. The time taken to produce a full thickness scald burn injury in adults is ten minutes at 120 degrees, one minute at 127 degrees, five seconds at 140 degrees, two seconds at 151 degrees and only one second at 158 degrees. (2)

In September 1992 the NSW Department of Health launched a campaign, hot water burns like fire: scald prevention, concentrating on scalding due to kettles, hot drinks, saucepans and hot taps. According to the health department, water at 140 degrees will cause deep scalding [3rd degree burns] on young skin after just one second. At 122 degrees, young skin takes five minutes to be deeply scalded. (3)

Currently, Australian Standards and the National Plumbing and Drainage Code 1-10 limits hot water temperature in early childhood centers, schools and facilities to 131 degrees. (4)

Temperature controlling devices and safety taps...

The choice of one or more of these devices depends on the type of hot water system you have, whether you are building or renovating and your budget.

The most effective way to reduce the temperature of hot water in your bathroom is to fit devices which mix hot and cold water before it comes out of the tap. A thermostatic mixing valve is used to achieve this and will also prevent any dripping taps.

Temperature valves can either be adjusted to a maximum temperature or set and locked at a given safe temperature. They should only be set by an authorized person to ensure that no tampering with the temperature takes place. They can be placed near the tank to control all hot water in the house or

positioned to regulate only the hot water going to the bathroom, leaving your kitchen sink and dishwasher water unaffected.

Which device should you choose ... a temperature valve or a thermostatic valve?

Both reduce water temperature which is maintained within one degree of the selected temperature. There is immediate response to supply pressure fluctuations. If the cold supply fails, there is complete shut off in less than two seconds. For multi-purpose usage thermostatic valves are best. Temperature valves are physically smaller and are therefore only suitable for a limited number of outlets, for example, handwash basins. 5 & 6 Thermostats can be installed for electric and gas systems and are energy savers. All plumbers carry safety cards to check water temperatures.

Other devices with safety features are child resistant taps, single lever mixing taps and automatic flow reduction devices. Safety devices for the kitchen, laundry, fireplaces and heaters are also available.
Inquires can be made to the Safety Centre at the Royal Children's Hospital in Melbourne. You can also contact the Epilepsy Foundation of Victoria for the names and prices of a range of safety devices.

An obvious advantage of having temperature controlling devices installed is that parents can feel their family members are safe and teenagers and adults don't have to give up their privacy or feel that they have to be constantly supervised when having a shower or bath.

***First Aid*: Water at 50-68 degrees should be applied for 10 to 20 minutes for large area burns to prevent the person from becoming too cold [hypothermia] and the potential development of heart problems [cardiac complications], particularly in children and the elderly.**

For not so large area burns, immerse the scalded area in cold water for 30 minutes. This reduces the heat in the skin and prevents deeper burning. **Do Not Use ice.**

Iced water can cause people to become dangerously chilled. Keep the person warm, wrapped in a blanket and seek medical help. **Do Not Use butter, oil or ointments to cover scalded areas.**

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Note - Thanks to the Epilepsy Foundation of Victoria, Australia for this information.
http://nevdgp.org.au/info/epilepsyf/info/thermal.html