

BURN INJURY

Thousands of children suffer burn-related injuries each year. Children ages 4 and under are at the greatest risk, with an injury death rate more than two times that of children ages 5 to 14. Burns have long been recognized as among the most painful and devastating injuries a person can sustain and survive. Burns often require long periods of rehabilitation, multiple skin grafts and painful physical therapy, and they can leave victims with lifelong physical and psychological trauma.

Scald burn injury (caused by hot liquids or steam) is the most common type of burn-related injury among young children, while flame burns (caused by direct contact with fire) are more prevalent among older children. All children are also at risk for contact, electrical and chemical burns. Because young children have thinner skin than older children and adults, their skin burns at lower temperatures and more deeply. A child exposed to hot tap water at 140 degrees Fahrenheit for three seconds will sustain a third-degree burn, an injury requiring hospitalization and skin grafts. Children, especially those ages 4 and under, may not perceive danger, have less control of their environment, may lack the ability to escape a life-threatening burn situation and may not be able to tolerate the physical stress of a burn injury.

BURN DEATHS AND INJURIES

- In 2001, 532 children ages 14 and under died due to unintentional fire- and burn-related injury. It is estimated that flames and burns are responsible for one-fourth of all fire-related deaths.
- In 2002, an estimated 92,500 children ages 14 and under were treated in hospital emergency rooms for burn-related injuries. Of these injuries, approximately 58,100 were thermal burns, 22,600 were scald burns, 7,200 were chemical burns and 2,100 were electrical burns.
- An average of eight children ages 14 and under die from scald burn-related injuries each year. Children ages 4 and under account for nearly all of these deaths.
- Among children ages 4 and under hospitalized for burn-related injuries, it is estimated that 65 percent are treated for scald burns and 20 percent for contact burns.
- In 2002, nearly 4,200 children ages 14 and under were treated in hospital emergency rooms for fireworks-related injuries.

HOW AND WHERE BURN DEATHS AND INJURIES OCCUR

- Fires resulting from children's play are the leading cause of residential fire-related death and injury among children ages 9 and under.
- Among children ages 14 and under, hair curlers and curling irons, room heaters, ovens and ranges, irons, gasoline and fireworks are the most common causes of product-related thermal burn injuries.
- The majority of scald burns to children, especially among those ages 6 months to 2 years, are from hot foods and liquids spilled in the kitchen or other places where food is prepared and served.
- Hot tap water accounts for nearly one-fourth of all scald burns among children and is associated with more deaths and hospitalizations than other hot liquid burns. Tap-water burns most often occur in the bathroom and tend to be more severe and cover a larger portion of the body than other scald burns.
- Burns account for more than half of all fireworks-related injuries and primarily occur to the hands, eyes and head. Fireworks-related injuries peak during the month surrounding July 4, when 60 percent of them occur.
- Nearly two-thirds of electrical burn injuries among children ages 12 and under are associated with household electrical cords and extension cords. Wall outlets are associated with an additional 14 percent of these injuries.
- The vast majority (95 percent) of microwave burns among children are scald burns. Microwave burns are typically caused by spilling hot liquids or food, and injuries are primarily associated with the trunk or the face.

WHO IS AT RISK

- Children ages 4 and under and children with disabilities are at the greatest risk of burn-related death and injury. These children are especially at risk from scald and contact burns.
- Male children are at higher risk of burn-related death and injury than female children.
- Children in homes without smoke alarms are at greater risk of fires and fire-related death and injury.
- Males, especially those ages 10 to 14, are at the highest risk of fireworks-related injuries. However, children ages 4 and under are at the highest risk for sparkler-related injuries.

BURN PREVENTION EFFECTIVENESS

- Smoke alarms are extremely effective at preventing fire-related death and injury. The chances of dying in a residential fire are cut in half when a smoke alarm is present. Smoke alarms and sprinkler systems combined could reduce fire-related deaths by 82 percent and injuries by 46 percent.
- More than 75 percent of all scald burn-related injuries among children ages 2 and under could be prevented through behavioral and environmental modifications. Hot tap water scalds can be prevented by lowering the setting on water heater thermostats to 120 degrees Fahrenheit or below and by installing anti-scald devices in water faucets and shower heads. One study found that 82 percent of respondents in homes with young children did not know the temperature of the setting on their hot water heaters.

BURN PROTECTION LAWS

- Many states and the District of Columbia have laws that require smoke alarms to be used in both new and existing dwellings. Some states have no comprehensive smoke alarm laws. Other states have a variety of laws covering specific situations, such as new dwellings or multi-occupancy dwellings only.
- In 1994, the U.S. Consumer Product Safety Commission issued a mandatory safety standard requiring disposable and novelty cigarette lighters to be child-resistant. Since this standard has been in effect, the number of child-play lighter fires has declined 58 percent, and the number of deaths and injuries associated with these fires has declined 31 percent and 26 percent respectively.
- Many communities have enacted local ordinances or building codes that require the installation of anti-scald plumbing devices in all new construction. These laws have been effective in reducing the number of scald burn deaths and injuries associated with hot tap water.

HEALTH CARE COSTS AND SAVINGS

- The total annual cost of scald burn-related deaths and injuries among children ages 14 and under is approximately \$2.1 billion. Children ages 4 and under account for \$1.3 billion, or more than 60 percent, of these costs.
- Total charges for pediatric admissions to burn centers average \$22,700 per case.

PREVENTION TIPS

- Never leave a child alone, especially in the bathroom or kitchen. If you must leave the room, take the child with you.
- Install smoke alarms in your home on every level and in every sleeping area. Test them once a month, replace the batteries at least once a year (unless the batteries are designed for longer life) and replace the alarms every 10 years. Ten-year lithium alarms are also available and do not require an annual battery change.
- Set your water heater thermostat to 120 degrees Fahrenheit or below. Consider installing water faucets and shower heads containing anti-scald technology.
- Keep matches, gasoline, lighters and all other flammable materials locked away and out of children's reach. Never allow children to handle fireworks.
- Use back burners and turn pot handles to the back of the stove when cooking. Keep appliance cords out of children's reach, especially if the appliances contain hot foods or liquids. Cover unused electrical outlets with safety devices.
- Keep hot foods and liquids away from table and counter edges. Never carry or hold children and hot foods or liquids at the same time.

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