

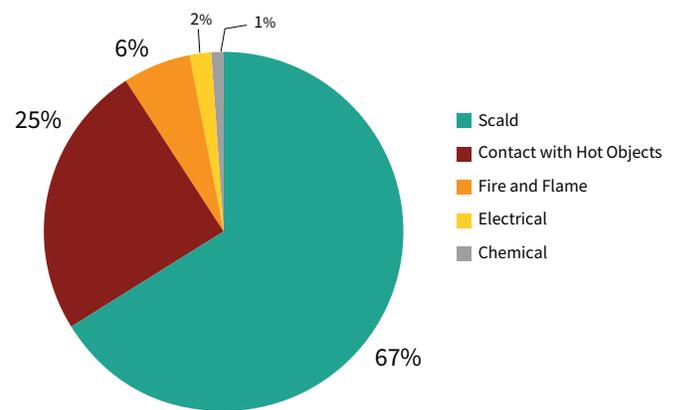
Injury Insight

Landing in Hot Water: Burn Prevention for Young Children

Burns and scalds are common injuries among young children, often happening in the home environment.^{1,2} These injuries can result from contact with hot water, drinks, or food, or from contact with hot surfaces, such as stoves, ovens, or small appliances.¹ By implementing a few simple strategies in the household, injuries can be prevented.

While fire and flames may be the most obvious causes of burns, they are not the most common. Many parents and caregivers may be surprised to know that young children are burned by a hot liquid 11 times more often than by flame (Figure 1). Injuries from fires, flames, and hot substances were the sixth leading cause of hospitalization in children 0-4 years of age in BC in 2016/17, with a rate of 7.74 burns for every 100,000 young children.^{2,3}

FIGURE 1: Type of Burn or Scald Sustained by Children in the Home, Ages 0-4 Years, BC, 2013-2017



Data source: BC Burn Registry Data.

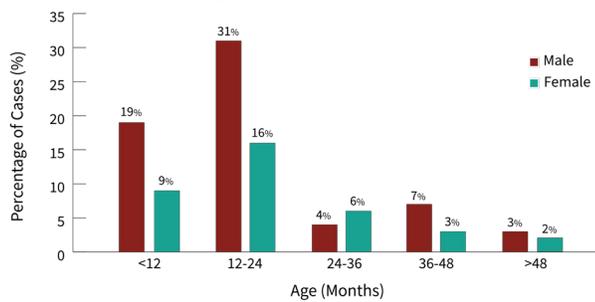
Why Preventing Burns Among Young Children is Important:

- Young children are naturally curious and become increasingly mobile as they develop. They are at risk of coming in contact with a burn or scald hazard.
- Infants and toddlers have thinner skin than older children and adults. Therefore, burns or scalds may occur **FASTER** and may be **MORE SEVERE** among young children than in older children and adults, even at lower temperatures.
- Following a burn or scald, children can experience more complications such as:
 - Prominent, raised scars, and skin tightening, and hardening that can impair movement.⁴
 - Increased rates of mental health disorders such as anxiety and depression.⁵
 - Requiring lengthier and ongoing treatment, such as follow up appointments for dressing changes, reconstructive surgery, physiotherapy, and occupational therapy.⁶
- Young children are still growing and developing, so complications can be worse than in older individuals. Contractures (immovable, scarred tissue) can form and limit growth and future movement of developing limbs. For example, if a child's hand is burned, they may develop scar tissue between their fingers and as a result may have permanent functional difficulties.⁷



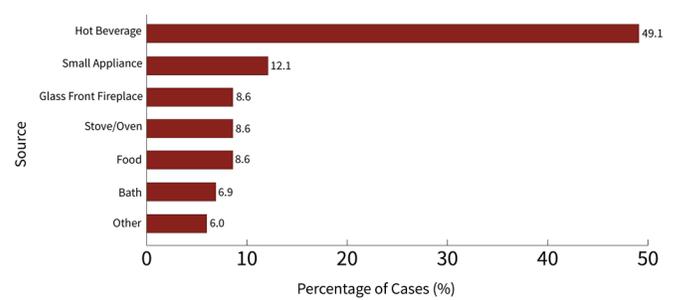
Children tend to experience **scalds** from **hot liquids spilled on to their bodies** by others or by themselves.

FIGURE 2: Burns in Children in the Home, by Age and Sex, Ages 0-4 Years, BC, 2013-2017



Data source: BC Burn Registry data.

FIGURE 3: Sources of Burns in Children in the Home, Ages 0-4 Years, BC, 2013-2017



Small Appliances: irons, hair appliances, kettles, space heaters
Other: Campfires, barbecues, hot oil

Data source: BC Burn Registry data.

Risk Factors:

AGE AND SEX:

Overall, burn or scald injuries occur more frequently in boys than girls (Figure 2),^{8,9,10,11} but all young children (ages 0-4 years) are at a higher risk than older children (ages 5 years and older), with the frequency of sustaining a burn decreasing with age. Research has shown that burn and scald injuries in children are most common among those aged 13-36 months.^{10,11} In British Columbia, burns and scalds are most common among children aged 12-24 months (Figure 2).

Infants up to 12 months-of-age tend to experience scalds from hot liquids inadvertently spilled onto their bodies by others, or from being bathed in water that is too hot.^{9,12}

However, children older than 12 months of age tend to experience scalds from spilling hot liquids onto themselves, such as those in mugs or pots, and sustain burns from touching hot objects, such as the stovetop or the glass front of a fireplace.^{9,12,13}

First Aid^{15,16}

- Cool injured skin for a least one minute using a cool damp cloth, cold compress, or cool running water. Never use ice as it can damage surrounding skin.
- Remove clothing from the affected area unless it is stuck to the skin.
- Cover unaffected skin to prevent hypothermia and discomfort.
- Seek immediate medical attention if the injured areas is larger than a loonie, or if the burn or scald is on the face, chest, or groin.
- Never use butter, oil, creams, or toothpaste to treat a burn or scald.

ENVIRONMENT:

Certain areas of the home contain potential hazards for sustaining a burn or scald injury (Figure 3).

The kitchen is the most frequent setting for these injuries to occur in young children.¹ Risk factors include:

- Pot handles or hot beverages within reach of young children.^{1,9,10}
- Leaving cords of appliances dangling within the reach of children, such as kettles or slow cookers.^{1,9,14}
- Children climbing or sitting on counters while the caregiver is preparing food or drink.^{1,10,11}

Risk factors for burns or scalds occurring in the bathroom include:

- Hot water heater set to a temperature greater than 49 degrees Celsius (°C).¹² Setting the tap to 49°C does not eliminate the risk of a hot water scald, but does reduce the potential severity of the scald.
- Bath water temperature.^{1,12}
- Child access to hot water taps.^{1,12}
- Child access to appliances such as hair straighteners or curlers.^{1,14}

Risk factors in other areas of the home include:

- Glass fronted fireplaces without barriers.^{1,13}
- Child access to household appliances, such as irons, space heaters, and bottle warmers.^{1,14}

Strategies to Prevent Burns and Scalds

Prevention strategies include behaviour changes and modifications to the home. Passive strategies only need to be done once, and include legislative changes. Active strategies can be more challenging, as they are efforts that need to be done every time you are supervising a child. Daily habits can be harder to adopt, but can be vital for preventing burns and scalds.

PASSIVE:

- Childproof bathroom doors to prevent children from entering and turning on hot water taps by themselves.^{15,16}
- Place a gate or fence around fireplaces or other heaters to prevent contact burns.^{13,15,16}
- As of January 2015, BC guidelines dictate that new gas fireplaces must include a safety screen or barrier.¹⁶
- New homes (after 2012) require that hot water delivery temperature to bathtubs cannot be set higher than 49°C.^{16,17} In older homes, manually lower the hot water temperature to 49°C. For more information, please refer to your hot water tank manual, or visit: <http://burnfund.org/prevention-and-education/safety-tips/>
- Install external mixing valve taps in bathrooms and kitchens to mix cold water with hot water.^{15,16,18}

ACTIVE:

- Provide constant, close supervision, especially when the child is bathing or is in the kitchen.^{15,16}
- Use cups with lids or travel mugs for hot liquids to prevent spillage.^{15,16}
- Keep appliance cords out of reach and appliances away from table and counter edges.^{15,16}
- Turn pot handles inward on the stove and cook on the back elements whenever possible.^{15,16}
- Check your child's bath water with your elbow prior to placing them in the water; it should not feel hot.^{15,16}

Too Hot for Tots! (THFT!)¹⁶

- *THFT!* is an educational workshop designed for parents and caregivers focusing on burn prevention in young children aged 0-4 years.
- Launched in 2012 out of BC Children's Hospital, *THFT!* was developed in partnership with the BC Professional Fire Fighters' Burn Fund.
- *THFT!* is informed by recent, relevant, and reliable evidence-based health information and research and has been evaluated.
- Find an upcoming workshop near you: <http://burnfund.org/prevention-and-education/too-hot-for-tots/>

Burns and Scalds are Preventable!

Young children are naturally curious and do not understand dangerous situations. While you can teach your child to be safe, never assume your child will take all necessary precautions. Continue to supervise and be a positive role model for safety behaviors. To protect young children from burns and scalds:

- Learn and use safety strategies to protect young children from burns and scalds in the home.
- Share safety tips with anyone who cares for your child: grandparents, aunts, uncles, friends, babysitters, daycare staff. In BC, 24% of children with burns were under the care of someone who was not their parent.¹
- Contact your local Public Health Unit, or phone 8-1-1 to speak to an on-call nurse for more information.
- Attend a burn safety workshop such as Too Hot for Tots!

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