



Safekids
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Factsheet

CHILD BURN INJURIES

Overview

Childhood burn related injuries caused the death of twenty eight New Zealand children over five years (2002-2006) – an average of over five children each year.¹

Fatalities from burn injuries include burns from exposure to an electric current, fire/ flame and hot substances (Injury Prevention Research Unit (IPRU), University of Otago). The main cause of death was due to exposure to a fire/ flame burn injury.

On average (2004-2008), 5.5 children in New Zealand are burned severely enough to be admitted into hospital each week.² The main cause of hospital admissions for burn injuries is contact with heat and hot substances.

Burns are categorised by their severity and the extent of surface area of the body they cover (See Figure One).

A Safekids NZ data analysis report found that electric/ fire/ hot substances injuries exhibit a socioeconomic gradient (i.e. NZ Deprivation 9-10 was *significantly higher* than NZ Deprivation 1-2). Children of lower socioeconomic status were more likely to be killed and injured by burns. Statistical testing also showed that this injury cause was *significantly higher* for Māori and Pacific children than for European. The report also showed that burn related injuries are *significantly higher* for males and for children living in urban areas.³

Children under the age of five have the highest incidence of burns of all types; with hot object and hot substances burn injuries happening most frequently to children younger than five years of age⁴ (See Figure Two).

New Zealand's National Burns Service provides information and advice about burn injuries and support for burns services nationally. Specialist

*Figure One*⁶

Burn Units are located at Middlemore Hospital (Auckland), Waikato Hospital (Hamilton), Hutt Hospital (Lower Hutt), and Christchurch Hospital (Christchurch).⁵

Burns from hot objects / substances (scalds)

Burns from hot substances refers to burns from hot surfaces, objects and liquids. While they result in the same type of injury, burns from liquids and steam are commonly referred to as scalds.

Burns from hot substances result in fewer fatalities than burns from fire and flame, however they cause over five times the number of hospitalisations.⁷

Young skin burns more quickly and deeply than adult skin, at lower temperatures. A hot cup of tea spilled over a baby is equivalent to a bucketful of boiling water tipped over an adult.

Of the children aged 1 to 2 years old who are admitted for burns, research shows over half are severely scalded by spilt hot drinks (tea and coffee) and other liquids (such as soups and noodles).⁸

Excessively hot tap water in baths, showers and sinks is shown to be the next most frequent reason for hot liquid burn (or scald) admissions.⁹ Almost 40% of New Zealand homes have tap water that is dangerously hot, and nearly 10% have water so hot that burns are almost inevitable.¹⁰

A small adjustment to your hot water tap temperature makes a big difference to a child's risk of burn injury. It has been estimated that exposure to water at 54 degrees Celsius would take 10 seconds to cause a full thickness burn, where exposure to water at 60 degrees Celsius takes between 1 and 3 seconds.¹¹

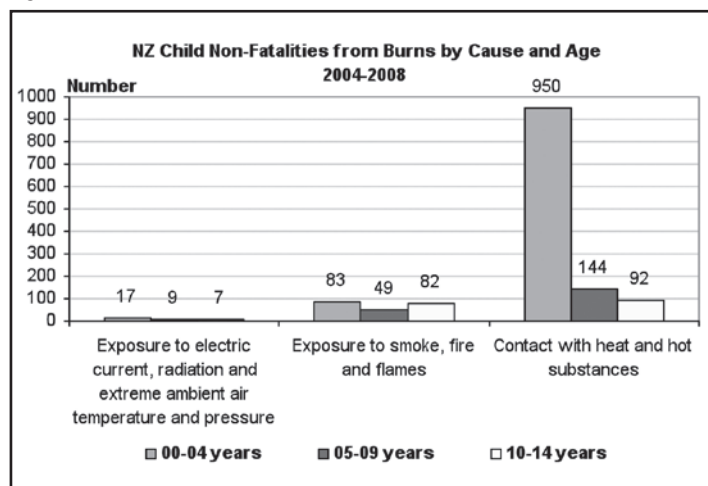
Burn Definitions

A **superficial burn** affects the top layer of skin. The skin is red and will hurt when you touch it. Healing takes approximately seven days and usually heals without scarring.

A **partial thickness or mid dermal burn** affects the top and middle layers of skin. The skin often has blisters. It may look pink or red. It is often painful to touch. Healing may take 10 days to three weeks. Scarring may occur with burns that take longer to heal.

A **deep dermal or full thickness** burn usually involves all three layers of skin. The skin will be very white, brown, or black, and can look like leather. This type of burn generally requires a skin graft. Some scarring will occur and scar management will be recommended.

Figure Two:



Source: NZHIS data supplied by the Injury Prevention Research Unit (IPRU), University of Otago, 2010. Analysis by Safekids NZ.

Burns from fire and flame

Burn injuries from fires happen less frequently, but are responsible for a higher number of fatalities than burns (or scalds) from hot substances. Over five years (2002-2006) twenty three children under the age of fifteen died from being burnt by fire or flame, an average of almost five children dying each year¹² (See Figure Three).

House fires in which children die are most commonly caused by unattended heaters or someone playing with matches, lighters, or candles.¹³

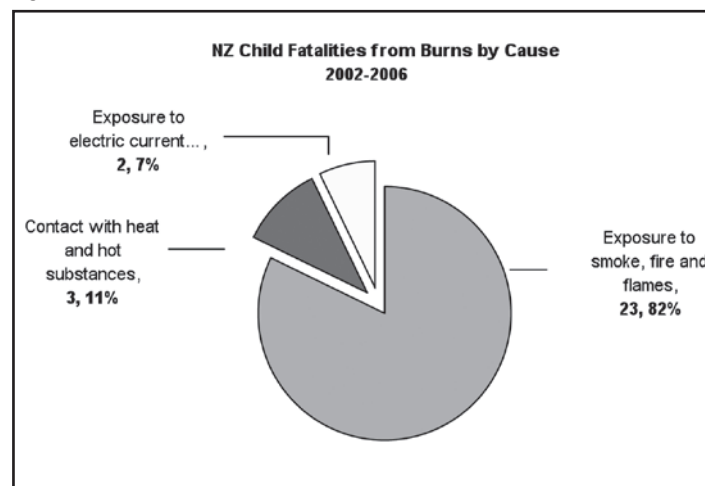
Boys and younger children are at higher risk of fire related injury. Children under the age of five years old make up a third (33%) of fire related hospitalisations and 76% of children hospitalised for fire burn injuries are boys.¹⁴

First Aid for Burns

The severity of a burn injury can be dramatically reduced through the immediate use of first aid.

It is recommended that in the event of a burn to skin, it is important to cool the burn under cold running water for AT LEAST 20 MINUTES as soon as possible. Clothing should be removed from the burned area unless it is stuck to the wound. If clothing sticks, people need to cut around the area where the clothing is stuck and leave that piece of fabric for hospital staff to remove. It is important not to touch the burn or burst any blisters as this can cause infection.¹⁵

Figure Three:



Source: NZHIS data supplied by the Injury Prevention Research Unit (IPRU), University of Otago, 2010. Analysis by Safekids NZ.

Conclusion

The cost of burns to our children is just too high. Accident Compensation Corporation (ACC) claims information shows an average of 8,660 total active claims each year for burn injuries to children, costing more than \$3.9 million a year.¹⁶

Children who are severely burned often require many operations and special treatments over extended periods of time and have to deal with the consequences of disfigurement from their burn for the rest of their lives.

¹ NZHIS data supplied to Safekids NZ by the Injury Prevention Research Unit (IPRU), Otago University, 2010.

² Ibid.

³ Alatini, Moses. *Analysis of unintentional child injury data in New Zealand: Mortality (2001-2005) and morbidity (2003-2007)*. Auckland: Safekids New Zealand, 2009, pp. 40 & 70.

⁴ Cassell E, Clapperton A, Ashby K, Victorian Injury Surveillance & Applied Research (VISAR) "Unintentional burns and scalds in vulnerable populations: the very young and the very old, Victoria, July 2001 to June 2003." *Hazard*. No. 57, Autumn 2004.

⁵ Refer to NZ National Burns Service, www.nationalburnservice.co.nz

⁶ Ibid.

⁷ NZHIS data supplied to Safekids NZ by the Injury Prevention Research Unit (IPRU), Otago University, 2010.

⁸ Barker R, Scott D, Hockey R, Spinks D, Pitt R, Queensland Injury Surveillance Unit, "Burns and scalds in Queensland toddlers." *Injury Bulletin*. No. 89, December 2005.

⁹ Ibid.

¹⁰ Building Research Association of New Zealand (BRANZ), *Study Report, Energy use in New Zealand households: Report on the year 7 analysis for the Household Energy End-use Project (HEEP)*. SR 122 (2003).

¹¹ Barker R, Scott D, Hockey R, Spinks D, Pitt R, Queensland Injury Surveillance Unit, "Burns and scalds in Queensland toddlers." *Injury Bulletin*. No. 89, December 2005.

¹² NZHIS data supplied to Safekids NZ by the Injury Prevention Research Unit (IPRU), Otago University, 2010.

¹³ New Zealand Fire Service, 2008.

¹⁴ NZHIS data supplied to Safekids NZ by the Injury Prevention Research Unit (IPRU), Otago University, 2010.

¹⁵ First aid recommendations endorsed by representatives from: the National Burn Service, NZ Fire Service, Safe Waitakere Injury Prevention and Burns Support Group Charitable Trust Inc. for the Safekids Campaign 2010-2011.

¹⁶ Claims Data for Child burns from the NZ Accident Compensation Corporation (ACC), 2004/05-2008/09