

## Childhood Burns and Scalds

- Burns and scalds are the fifth leading cause of death in the European Union for children<sup>1</sup>.
- Young children are particularly vulnerable to burn-related injury and death as their skin is thinner than adults' and can suffer serious deep burns more quickly.
- Severe burn injuries cause tremendous pain, require multiple hospitalisations and lengthy treatment and may result in permanent disability and disfigurement.
- More than 55% of burn injuries occur to boys, with scalds and contact burns occurring predominantly to toddlers under the age of 2 years<sup>2</sup>.
- Every year in the United Kingdom for example there are over 20 deaths as the result of scald injuries from hot baths. Around 450 children under five are admitted to hospital with a severe scald caused by bath water and 2,000 children under five go to their local accident and emergency department<sup>3,4</sup>.
- In the United Kingdom for example more than 5000 fires are caused annually by children under 10 years old<sup>5</sup>.
- A study done in a poor urban setting in the United Kingdom found that the major cause of burn injuries was unintentional house fires<sup>5</sup>. The risk of death from fire is higher for children of lower socioeconomic class, as much as 16 times higher. It was found that mattresses, bedding and upholstered furniture accounted for 70 percent of the materials first ignited in all house fires examined<sup>6</sup>.
- Homes with smoke alarms typically have a death rate that is 40-50% **less** than the rate for homes without alarms<sup>7</sup>. For every 1 EUR spent on smoke alarms, 69 EUR are saved in fire-related costs. Furthermore, the combination of smoke detectors and sprinkler systems could reduce fire-related deaths by 82% and injuries by 46%<sup>8</sup>.
- Children also suffer burns and scalds injuries due to contact with hot liquids including tap water, touching hot appliances, and misuse of matches and cigarette lighters. In Athens, Greece 60% of children presented to the emergency department due to scalds caused by hot liquids in the kitchen, when a child reached for a cup of hot liquid from a kitchen surface or for a pot handle from the stove<sup>9</sup>.
- Lack of close supervision is the most frequent cause for a burn or scald injury<sup>10</sup>.
- Another cause of burns is fireworks. In the United Kingdom for example the number of children injured by fireworks increased by just over 35 per cent between 2000 and 2001, resulting in 685 children needing treatment at a hospital due to a firework injury. The majority of the injuries occurred in boys, 12 to 15 years of age<sup>11</sup>. The fact that boys in this age group are at high risk was also supported by a Greek study which found 93% of children who suffered from a firework injury treated in the emergency departments of hospitals were boys<sup>12</sup>. The majority of injuries occurred in children 10-14 years old with self-inflicted injuries to boys, whereas girls suffered injuries as bystanders. Fireworks sold illegally sold fireworks caused most injuries, but in eight instances homemade firecrackers were responsible.
- Fires started due to smoking (cigarettes/pipe, lighters or matches) tend to result in more deaths and higher property damages than other fires<sup>14</sup>.
- In Europe it is estimated that fires caused by children using cigarette lighters cost the taxpayers of Europe 95 million Euros each year<sup>13</sup>. Hospitalisations due to burns and their life long scars are even more costly and remain forever devastating.
- In the United States the total annual cost of scald burn-related deaths and injuries among children aged 14 and under is approximately \$2.1 billion, with children aged 4 and younger accounting for \$1.2 billion<sup>14</sup>.
- A child who is burned over 30% of the body has 170,000 EUR in initial hospitalization costs and physicians' fees. For extensive burns, there are additional significant costs which will include costs for repeat admission for reconstruction and for rehabilitation<sup>15</sup>.
- Burn accident statistics show that at least 50% of all burn accidents can be prevented<sup>10</sup>.

# FACTS



## Prevention Effectiveness

- Technology has been successful in the design of a number of products (such as smoke detectors) that assist in the reduction of burn deaths and injuries, but as in many injury issues, we need to ensure their proper and continued use.
- Smoke detectors - effective, reliable and inexpensive early warning devices assist in reducing residential fires by 71% when batteries are operational<sup>16</sup>.
- Water temperature and mixing valve regulations – legislation requiring a safe pre-set temperature (54°C) for all water heaters has proven to be a more effective method of reducing scalds burns than education to encourage parents to turn down water heaters<sup>16</sup>. Also, thermostatic mixing valves on all boilers or water heaters provide control over the water temperature exiting the bath or shower faucet<sup>17</sup>.
- Child resistant cigarette lighters - fire deaths associated with cigarette lighters dropped 43% in the United States with the adoption of child resistant designs and annual savings of \$125 million<sup>14</sup>.
- Flame retardant fabrics – setting flammability standards for mattresses, bedding, upholstered furniture and day and sleepwear. Following the passage of the Flammable Fabrics Act of 1972 in the United States<sup>14</sup> there was a 75% reduction in hospital admissions due to sleepwear burns.
- Reduced ignition propensity cigarettes – the technology exists for producing reduced ignition of cigarettes that lower the risk of a fire hazard from smoking cigarettes<sup>18</sup>.
- Adopting the following simple preventive measures in the kitchen helps in the reduction of burns injuries: using the rear positions of the cooker when cooking, keeping hot objects, foods and liquids in places where children have no access and avoiding the use of tablecloths on kitchen tables<sup>9</sup>.

## Recommended Policy Actions

- Because of the varied causes of fire and flame injuries, diverse interventions are required which target those at highest risk: children, especially those living in poverty.

Therefore, to address this important public health problem the following recommendations are needed:

### Legislation

- For the European Commission to adopt legislative measures that require smoke detectors to be installed in new and existing dwellings.
- For the European Commission to adopt legislative measures that require a safe pre-set temperature (54°C) for all water heaters and as a presetting on new water heaters.
- For Member States to amend building codes for new dwellings to require installation of thermostatic mixing valves on all boilers or water heaters, as well as the use of fire-retardant housing materials.
- For the European Commission to enforce the use of child resistant cigarette lighters throughout Europe.
- For the European Commission to make selling fireworks to children under 18 years of age illegal in all Member States (presently only some countries have enacted this law).
- For the European Commission to implement mandatory flame retardant standards for mattresses, bedding, upholstered furniture and children's clothing, which are environmentally friendly.
- For the European Commission to require all tobacco manufacturers in the European Union to sell reduced ignition propensity cigarettes.



## EU Collaboration

- For the European Commission to support a European wide campaign to raise awareness in parents and caregivers of burns and scald prevention for children, based on evidence-based prevention measures.
- For the European Commission to support an exchange of good practices for burn

and scalds prevention learned in various Member States and determine the ability to transfer the success factors to other locations.

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