

## Childhood Poisoning

- Poisoning is the third leading cause of unintentional injury death in the WHO European Region. Each year 3,000 young children aged 0 to 14 die of acute poisoning<sup>1</sup>. Children 5 years and under account for the majority of all poison exposures with children up to two years old especially vulnerable<sup>2</sup>.
- The term poisoning is used when cells are injured or destroyed by inhalation, ingestion, injection or absorption of a toxic substance.
- Curiosity and the desire to put everything in their mouths place young children at considerably greater risk for poison exposure than adults. Children will eat or drink anything regardless of how it tastes. They like things that smell good and are drawn to attractive packaging and the colourful substances of many of the products found around the home<sup>3</sup>.
- When exposed to poison, children are more likely to suffer serious consequences because they are smaller, have faster metabolic rates and their bodies are less capable of neutralising toxic chemicals<sup>3</sup>.
- More than 90% of all poisonings occur within the home environment and many common household products can poison children, including cleaning supplies, alcohol, plants, pesticides, medicines, and cosmetics<sup>4</sup>. Cigarettes and tobacco can also cause sickness if eaten and should be kept well out of the reach of young children.
- Most poisonings occur when the product is being used<sup>5</sup>.
- Every year in the Netherlands a child between the ages of 0 to 5 dies from poisoning and 1,600 children in this age group are admitted to a hospital due to serious cases of poisoning<sup>6</sup>. Almost all of the poisonings occur in the home and a caregiver was present in 94% of incidents. In the majority of the cases the child was under limited supervision due to circumstances or other duties being performed by the caregiver at the time of the poisoning.
- In 2002 in the United Kingdom almost 31,500 children under 15 years of age went to the hospital because of a suspected poisoning – over 26,000 of these were under five years old<sup>7</sup>. About 20% of those who presented were admitted to hospital, a very high proportion of admissions when compared with other types of accidents. The agent involved in the poisonings was a medication 69% of the time – a quarter of those being commonly used drugs such as analgesics. In the same year 6 children died of accidental poisoning.
- A study of 100 cases of unintentional poisoning involving children in Athens, Greece who were brought to the emergency clinics of the two children's hospitals also showed that medicinal products were implicated in the majority of accidental poisonings (58%)<sup>8</sup>. A surprising finding in the same study was that chewing and swallowing cigarettes was responsible for 15% of the childhood poisoning injuries with the risk of poisoning increasing when one or both of the parents were smokers.
- A study found that 23% of the oral prescription drugs that were ingested by children under 5 belonged to someone who did not live with the child. Overall, 17% of the medicines ingested belonged to a grandparent or great-grandparent<sup>6</sup>.
- Products to watch out for<sup>9</sup>:
  - **Pills, medicine:** Aspirin and other pain or cold medications, prescription medicines, vitamins, diet pills, and diet supplements.
  - **Bathroom:** Cleaners, sprays, perfume, cologne, hairspray, and mouthwash.
  - **Household products:** Cleaners, polishes, solvents, and products with lye and acids.
  - **Garage, work room:** Insect sprays, lamp oil, kerosene, lighter fluid, turpentine, paint, glue, batteries, tire fluid and antifreeze.
  - **Laundry room:** Detergents, bleach, fabric softeners, and pet products.
  - **Outdoors:** Fertilizers, pesticides, plants, and berries.
- While poisoning incidents are often perceived as mainly due to unintentional ingestion by young children, a significant number of poisonings are also due to adolescent suicide attempts, via overdoses of narcotics and psychodysleptics (hallucinogens)<sup>3</sup>.



# FACTS



- Carbon monoxide, an odourless and colourless gas that is produced during any combustion process, is also a cause of poisoning. The symptoms of carbon monoxide poisoning are similar to early signs of the flu and include: fatigue, chest pain in people with heart disease, headache, nausea, dizziness, confusion, and impaired vision and coordination. Carbon monoxide poisoning can be fatal at high concentrations and it is estimated that in the United Kingdom carbon monoxide from furnaces and heaters is responsible for almost a death a week in the winter<sup>10</sup>.
- Total medical spending for the treatment of poisonings in the United States is estimated at \$3 billion a year with an average of \$925 spent per case<sup>11</sup>.

### Prevention Effectiveness

There is increasing evidence that the following measures to prevent poisonings in children should be implemented, enforced and communicated to the European public:

- **Child resistant packaging** - introduction of regulations enforcing the compulsory use of child resistant packaging for all children's aspirin and paracetamol preparations led to a dramatic fall in the number of children admitted to hospital with unintentional poisoning as a result of these medications in England, The Netherlands and the United States. This type of packaging would also be beneficial for specific non-pharmaceutical products<sup>12</sup>.
- **Safe storage** - placing household cleaners, chemicals and medications in a locked storage cabinet or using child protective products to lock the cupboards and drawers have been an effective means of preventing poisoning<sup>13</sup>.
- **Education** - a school and parent education campaign to make toxic household products less accessible to children, accompanied by media to promote purchasing and using safer products and locked cabinets resulted in a 66% decrease in admissions to the emergency department for 0 – 5 year olds compared with two pre-intervention years and to control comparison sites<sup>14</sup>.
- **Monitoring of air quality** - carbon monoxide detectors with audible alarms are effective in alerting potential victims of

carbon monoxide poisoning to its presence. Persons with these detectors are less likely to become symptomatic from the exposure than those who do not have these detectors in the home<sup>15</sup>.

- **Poison Control Centre and Hotline** – in the United States it has been shown that for every dollar spent on poison control services an estimated \$7 was saved in medical care payments by reducing the number of medically treated poisonings<sup>11</sup>. The savings per poisoning call were \$175.

### Recommended Policy Actions

#### Legislation

- For the European Commission to monitor and enforce European Union policy requiring Member States to adopt and enforce the compulsory use of child resistant packaging for pharmaceutical products such as children's aspirin and paracetamol preparations, as well as for non-pharmaceutical products.
- For the European Commission to encourage the adoption of modified building code regulations in Member States to require new buildings to provide a lockable storage cabinet in each apartment or home, as well as carbon monoxide monitors.

#### EU Collaboration

- For the European Commission to support a European campaign on the topic of child poisoning prevention which delivers key, consistent messages across Europe about the use of and safe storage of cleaners and chemicals in convenient and lockable units, the importance of child resistant packaging, as well as improve the community's awareness of poison dangers.
- For poison centres in Europe to standardise and link their data on poisoning injuries in order to make recent statistics available and detailed.
- For industry to have child poisoning prevention in mind when designing products so that products are not attractive to children and are more resistant to access by children.



## References

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