



## **Tackling injuries, the leading killers of children**

The *European report on child injury prevention*<sup>1</sup> highlights both the enormous loss to society caused by childhood injuries in the WHO European Region and the huge potential for prevention by addressing their underlying risk factors and reducing exposure.

### **Ten key facts about unintentional injuries in children**

1. Injuries are the leading cause of death in children and adolescents aged 5–19 years.
2. They cause 42 000 deaths in children and adolescents aged 0–19 years.
3. The leading causes of injury death are road traffic, drowning, poisoning, falls and fires.
4. Boys suffer three out of four injury deaths.
5. Five out of six injury deaths occur in poorer countries.
6. Death rates in poorer countries are three times those in richer ones.
7. Death rates within countries can vary up to ninefold.
8. Injuries cause a huge drain on health and other societal resources, including an estimated 5 million hospital admissions and 70 million visits to emergency departments annually in the European Region.
9. Reducing all countries' mortality rates to the lowest national rates would prevent an estimated three out of four deaths from injury in the Region. The leading types of injury reflect this great potential for prevention. If all countries matched the lowest mortality rates in the Region, half of the lives lost to road traffic injuries and 9 out of 10 of those lost to drowning, poisoning, burns and falls could be saved each year.
10. Some of the interventions that save lives give very good value for money. For example, each euro invested in smoke alarms, child restraints or bicycle helmets, and poison control centres would yield estimated savings to society of €69, €29 and €7, respectively.

### **Road traffic injury**

Road traffic injuries (RTIs) are the leading cause of death in those aged 5–19 years in the WHO European Region.<sup>2</sup> In 2004, they are estimated to have killed 16 400 young people aged 0–19 years. RTIs also result in traumatic brain and limb injuries, leading to long-term disability. Children are vulnerable and inexperienced road users. Unsafe road design, high speed, excessive alcohol and failure to use safety devices are the leading risk factors.

Mortality in the country in the Region with the highest rate is three times that in the country with the lowest rate. Children from deprived backgrounds are at increased risk of death, especially as pedestrians and cyclists; the poorest may have over 20 times the risk of the richest, because of exposure in unsafe environments.

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<sup>1</sup> *European report on child injury prevention*. Copenhagen, WHO Regional Office for Europe, 2008 ([http://www.euro.who.int/violenceinjury/injuries/20080827\\_1](http://www.euro.who.int/violenceinjury/injuries/20080827_1)).

<sup>2</sup> The Region comprises 53 countries in an area stretching from the Arctic Ocean in the north and the Mediterranean Sea in the south and from the Atlantic Ocean in the west to the Pacific Ocean in the east.

Effective preventive measures include safer road design, control of speed and alcohol use, the use of seat-belts, helmets and child car seats, and the provision of bicycle lanes and pedestrian areas. Providing safe environments for children can not only reduce RTIs but also trigger additional benefits by encouraging physical activity through cycling and walking and reducing overweight and obesity, and emissions of noise, air pollutants and greenhouse gases. These in turn can result in decreased risk of noncommunicable diseases, mitigation of climate change and improved urban air quality.

### **Drowning**

Drowning is the leading cause of injury deaths in children aged 1–4 and results in over 5000 deaths per year in the Region. Children who survive may be severely disabled through brain damage and require lifelong financial and health care support. Again, inequalities are enormous, with a twentyfold difference in mortality between countries with the highest and lowest rates, and a nearly elevenfold difference in risk for the poorest groups within countries.

Proven interventions to reduce drowning in children include removing or covering water hazards, installing four-sided fencing for swimming pools, the use of personal flotation devices and immediate resuscitation.

### **Poisoning**

Poisoning remains the third leading cause of injury death. In 2004, acute poisoning caused 3000 deaths in the European Region, with a thirtyfold difference between the countries with the highest and lowest rates. The home is the most common setting for childhood poisoning and children are particularly at risk when harmful substances are stored in easily opened containers or within easy reach. The agents in most fatal poisonings are pharmaceuticals, household agents, pesticides and plants. Acute intoxication with alcohol is a growing concern in adolescents.

Environmental modifications – such as using child-resistant closures, safely storing and reducing the availability of toxic substances, dispensing medicines in non-lethal quantities and establishing poison control centres – are good investments for prevention.

### **Burns**

Burns killed 1700 young people aged 0–19 years in 2004 in the European Region; survivors can be permanently scarred or disabled. Again, there are great inequities between and within countries. Deaths in the countries with the highest rates are 85 times those in the countries with the lowest, and the poorest people in countries have up to 38 times the risk of the richest. Deaths and injuries from burns are linked to unsafe environments and products, especially at home.

Laws to require the installation of smoke alarms, the regulation of the temperature of hot water and the enforcement of standards for cigarette lighters prevent burns. The provision of first aid and high-quality care ensures the best possible physical and psychological outcomes.

### **Falls**

More than 1500 young people aged 0–19 die from falls each year in the Region, with a twenty-twofold difference in deaths between the countries with the highest and lowest rates. Many more non-fatal fall injuries are a leading cause of disability. As with other injury types, poor children are at increased risk.

Proven strategies to reduce serious falls in children include modifying or replacing unsafe products, passing legislation requiring window guards, implementing standards for playgrounds and carrying out multifaceted community programmes.

Table 1 summarizes the different types of action that can be taken to reduce injuries to children. The *European report on child injury prevention* discusses each in detail.

**Table 1. Selected effective interventions to prevent child injuries**

Intervention principle	Injury type				
	RTIs	Drowning	Poisoning	Burns	Falls
Legislation, regulation and enforcement (including standards)	Speed limits, prevention of drink-driving, use of bicycle helmets, seat-belts and child restraints	Pool fencing, supervision of swimming pools	Manufacture, storage and distribution of harmful substances, safe packaging	Hot-water heater temperature, smoke alarms	Playground equipment
Product modification	Vehicle modification to improve occupant protection	Personal floatation devices	Medication packaging, child-resistant container closures	Curly flexes on kettles, thermostatic mixing valves	Reduced height of playground equipment, modification of baby walkers, safety glass
Environmental modification	Child-friendly infrastructure: safer routes to school, play spaces, pedestrianized areas	Barriers and fencing around water, heavy grills to cover wells	Safe storage of potentially harmful substances	Electrification, separation of cooking from living areas	Window guards, railings on balconies, stair gates
Education and skill development	Use of helmets, seat-belts, child restraints	Swimming training and supervision	Safe storage of household chemicals and pharmaceuticals, immediate first aid	Cooking practices, first aid	Supportive home visitation to identify hazards
Emergency medical care	Child-sized equipment, child trauma centres	Immediate resuscitation	Poison control centres	Burn centres	Acute care appropriate to children

### Nine winning approaches

The experience accumulated by countries in the Region shows that sustained and systematic approaches that address the underlying causes of injuries, such as their socioeconomic and environmental determinants, can make all countries among the safest in the world. In the *European report on child injury prevention*, a companion to the new global report,<sup>3</sup> the WHO Regional Office for Europe identifies a series of action points to reduce the burden from injuries suffered by children.

1. **Integrate child injury prevention into a comprehensive approach to child and adolescent health**, because injuries are among the leading causes of child death and disability. A comprehensive approach, integrating actions shown by evidence to be effective, will optimize health gain.
2. **Develop and implement a plan to prevent child injury involving many sectors**: different sectors of government, the private sector, nongovernmental organizations, the mass media and the general public. The plan should target all children, including those from poor and minority

<sup>3</sup> Peden P et al. *World report on child injury prevention*. Geneva, World Health Organization, 2008 (<http://www.who.int/bookorders/anglais/detart1.jsp?sesslan=1&codlan=1&codcol=15&codcch=729>).

communities, and be coordinated with the promotion of physical activity in safe environments and the safe use of public transport.

3. **Implement evidence-based action to prevent and control childhood injuries.** Key approaches include legislation, regulation and enforcement; product and environmental modification; education and skills development; and emergency medical care.
4. **Strengthen health systems to address child injuries.** Health systems' responses need to incorporate both primary prevention and the provision of high-quality emergency trauma care to injured children, as well as rehabilitation and support services. They should be based on the principles of equity and evidence-based practice.
5. **Build capacity and exchange best practice.** An essential part of an adequate health-system response is ensuring that sufficient trained and experienced staff are available. Injury prevention should be incorporated in curricula for health professionals. Children and young people need to be actively involved in the introduction of school and university programmes. The exchange of knowledge strengthens country capacity.
6. **Enhance the quality and quantity of data for child injury prevention.** Good data on mortality, morbidity, exposure, outcomes and costs are needed to provide a foundation for the development and monitoring of policies affecting child safety.
7. **Support research on and evaluation of the causes, consequences (including costs) and prevention of child injuries.** A research agenda needs to be developed for both countries and the Region to improve understanding of the causes and consequences of injuries and build the evidence base for cost-effective preventive programmes.
8. **Raise awareness of and target investments for child injury prevention.** Raising awareness about the potential for prevention, including that of safer environments, is paramount. Health systems need to advocate broad government policy that leads to safer physical and social environments.
9. **Address inequity in child injury.** The health sector can play a key role in promoting health equity in all policies. Further, it needs to incorporate injury prevention in its provision of primary health care and support of community-based action, and needs to pay particular attention to targeting the social stratification of injuries.

The Regional Office web site offers further information on its work on violence and injury prevention ([http://www.euro.who.int/violenceinjury/injuries/20081205\\_2](http://www.euro.who.int/violenceinjury/injuries/20081205_2)) and other activities to protect health and the environment (<http://www.euro.who.int/envhealth>).

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**For more information, contact:**

TECHNICAL INFORMATION:

Dr Dinesh Sethi  
Technical Officer, Noncommunicable Diseases  
and Environment  
WHO Regional Office for Europe  
Via Francesco Crispi 10, I-00187 Rome, Italy  
Tel.: +39 06 4877526; fax: +39 06 4877599  
E-mail: [din@ecr.who.int](mailto:din@ecr.who.int)

PRESS INFORMATION:

Ms Cristiana Salvi  
Technical Officer, Partnership and Communications  
WHO Regional Office for Europe  
Via Francesco Crispi 10, I-00187 Rome, Italy  
Tel.: +39 06 4877543, mobile: +39 348 0192305  
Fax: +39 06 4877599; e-mail: [csa@ecr.who.int](mailto:csa@ecr.who.int)