
Making a Child's Environment Safer

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ABSTRACT

Starting with the first year of life, unintentional injuries are the biggest health risk for children. About 1.7 million children per year suffer injuries so severe that they need medical treatment. Although these numbers point out the political relevance of unintentional injuries, there is insufficient awareness of the problem among the public. Furthermore, the problem does not occupy a prominent space on the national health agenda. For example, over the past decades effective progress has been made in other public safety initiatives, such as preventing traffic injuries. However, injuries occurring at home and during leisure time have received little attention even though the injury rates are higher. This is especially striking because 60% of all injuries involving children could be prevented. The Federal Association SAFE KIDS Germany is the national umbrella organization for the prevention of childhood injuries at home and in the leisure time. The Federal Association initiates, coordinates and supports preventive activities.
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Introduction

Injuries are the leading health risk for children in Germany. According to data provided by the Federal Statistical Office the mortality rate caused by injuries has dropped considerably over the last decade from 3.8 (in 2001) to 2.3 fatal injuries per 100,000 children under 15 years old in 2010. However, more children still die from unintentional injuries than from infectious diseases and cancer combined. In 2010, 273 children under the age of 15 died from unintentional injuries, 107 in traffic injuries, 50 through drowning and 12 through burns. If we examine the location of accidents, the most fatalities occur in traffic injuries with 46.5%, followed by 23.7% at home, 7.1% during leisure time and 3.4% at school.

The number of children who must be treated by a physician after being injured is unacceptably high. According to a representative household survey of the Federal Institute for Occupational Safety and Health, every year 1.7 million children under the age of 15 need medical treatment as the result of serious injuries. That is almost 15% of the 11 million children living in Germany.

A large proportion of non-fatal accidents occur at school (approximately 990,000) although this number is probably inflated because teachers refer children with even minor injuries to a physician to ensure insurance coverage in case of secondary diseases.

One-third of all childhood injuries – 537,000 - occur at home or during leisure time. Comparatively low are injuries that happen as a result of traffic accidents. Overall 47% of injured children are under six years

old, and 58% are boys. The kinds of injuries that occur most frequently are shown in Figure 1.

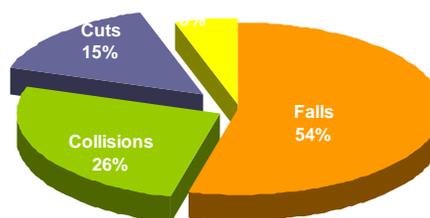


Figure 1. Injury Distribution by Cause

In 2010, more than 150,000 children under 15 years of age had to be treated in the hospital with accidental injuries. This is alarming considering that according to international research most of children's accidents (up to 60%) could be prevented.

Childhood Injuries: Causes and Risk Factors

Accidents happen when several unfavorable circumstances and human error occur. According to a study of the Federal Institute for Occupational Safety and Health, the most common cause for an accident is human error. Due to the frequent combination of several components that lead to an accident more than four causes per accident could be mentioned. A frequency distribution of childhood accidents is presented below in Table 1.

Table 1. Accident Frequency among Children by Major Causes

Accident causes	Accident causes in %
Human error	59.0%
Physical/psychological factors	43.9%
Error of another person	29.0%
Environmental impacts	22.1%
Structural defects	11.0%
Technical defects	3.3%

Products are involved in 43.4% of all injuries; three groups of equipment or products need to be mentioned (projected number of accidents in parentheses):

- Sports equipment especially winter sports and skating equipment (98,000);
- Bicycles (49,000); and
- Playground equipment (23,000).

If we take a closer look at behavioral factors of children involved in unintentional injuries it appears that besides the child's age, stage of development, and that of the parents, social and personality traits also have an important impact when it comes to the individual risk of experiencing an injury. Impulsive children or those who have a social behavior disorder are more likely to suffer injuries. Other factors that lead to unintentional injuries are physical restlessness, aggressiveness, too many family members in a small apartment, temporary stationary youth welfare, and family problems. Another component that places children at a higher risk of injuries is parents who rate their self-efficacy as low or who suffer from depression. Children from socially disadvantaged families are disproportionately affected by certain injuries.

International surveys as well as German studies confirm this "social gradient" is also a factor with many other health problems. Children who live in neighborhoods with high unemployment and welfare

recipient rates get injured in traffic injuries more often than children from more affluent neighborhoods.

Special risks are presented by areas in immediate proximity to busy streets. Moreover, apartments or flats that are not child friendly (Figure 2) such as ones not secured with balconies and staircases, have accessible household chemicals, sharp tools and other hazards pose a risk to children. Socially disadvantaged children suffer disproportionately from thermal (burn) injuries and are often victims of apartment fires. In Germany, boys of Turkish heritage experience three times as many scalds as German boys of the same age.



Figure 2. Unsecured Dwellings: Sources for Childhood Injury.

Possibilities of Unintentional Injury Prevention

The internationally well-known three E's - Education, Engineering, Enforcement (Figure 3) represent the possibilities of effective injury prevention:

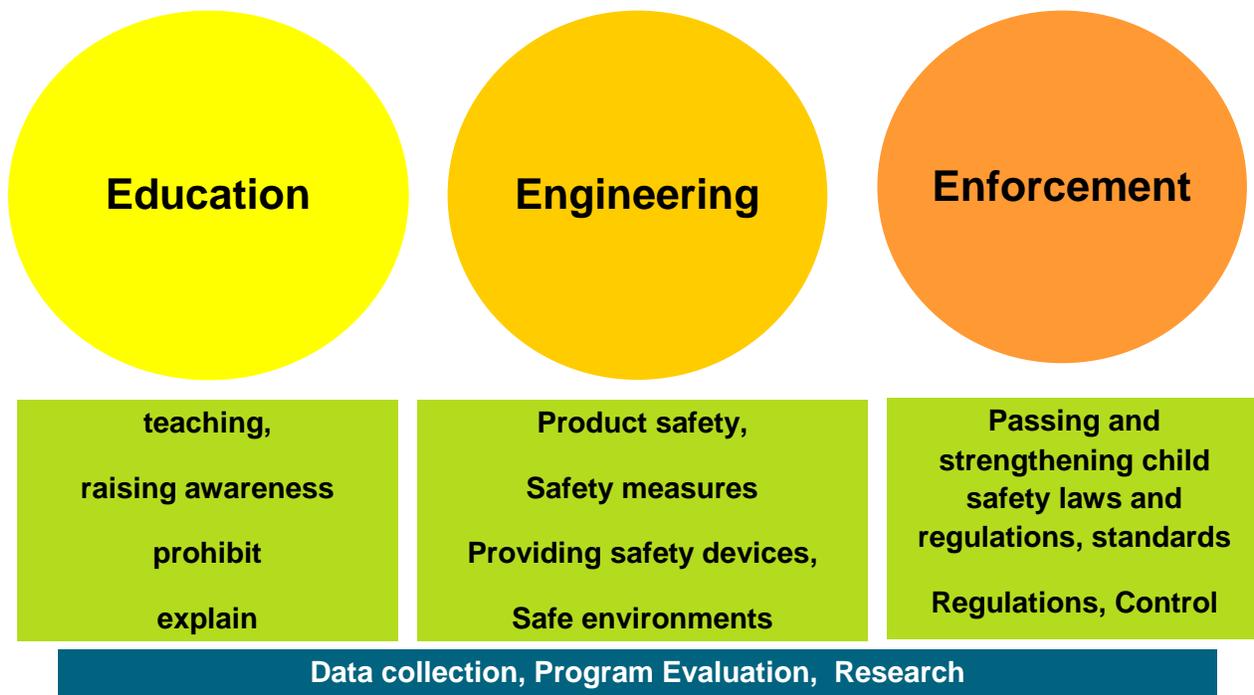


Figure 3. The "E Strategies" for Reducing Childhood Injuries from Unintentional Causes

Legal measures, standards, provisions, and regulations have a significant worldwide effect on human safety. Good examples of safety measures can be found in the working environment, and in traffic controls, for instance the obligatory wearing of seat belts. Since the introduction of the seat belt law, fatal traffic injuries involving children dropped by 31%. The safety of technical devices: household appliances, tools, toys, and sports equipment as well as for commercial use is guaranteed by the Equipment and Product Safety Act. Devices and equipment are awarded with the "GS - Geprüfte Sicherheit"- (tested safety) seal because they are safe when operated properly.

Engineering combines all technical measures for injury prevention that increase safety such as protective equipment, guard grids, safety doors, security bars and so on. An estimated 70% of household injuries are preventable through technical solutions. Providing information and consulting about security articles and child-friendly planning and interior design can make a significant contribution to reduce the number of childhood injuries.

Education, enlightenment and training offer a lot of potential for prevention. Every adult needs to be made aware of how important his/her behavior regarding their own safety is and what an impact it can have on other people. Children need to receive age appropriate

safety education so they can learn safety-oriented and responsible behavior. The general public as well as teachers, physicians, midwives, and other educational and medical personnel have to get proper training about unintentional injury risks and how to respond appropriately in dangerous situation. Furthermore ongoing education in theory and reality is important to learn strategies for accident prevention, gain competence in dangerous situation and respond adequately.

Empirical results indicate that the use of technical safety solutions creates the highest reduction rate of injuries. Informative and educational measures are especially effective along with personal communication. Community related approaches where different measures of prevention are introduced at a local level have shown good results.

Childhood Injury Prevention - An Obligation and Chance for Public Health

Although childhood injuries are a leading threat for children and much can be done to prevent most of them, there is little awareness and support in the public and among politicians regarding prevention. One of the reasons could be that injuries are considered as "bad luck," "coincidence," or "fate" rather than a health concern like any other illness with clearly identifiable

risks. Once factors that cause injuries such as technical defects, environmental impacts, risky behavior and psychosocial components are identified, appropriate actions can be taken to rule out further injuries.

Prevention at Home and During Leisure Time

For many years there was no official authority in charge of unintentional childhood injuries at home and during leisure time. Since 1997, the Federal Association for “SAFE KIDS” (Bundesarbeitsgemeinschaft [BAG] Mehr Sicherheit für Kinder) has coordinated actions for injury prevention at the federal level. The BAG operates both nationally and internationally as a platform for all those working toward or interested in injury prevention and is networking with the European Child Safety

Alliance and Safe Kids Worldwide. For more information, contact www.kindersicherheit.de and <http://www.safekids.org/worldwide/>.



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