

## Preventing Unintentional Injuries among Children is Our Goal

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### Introduction

Injury is “an amount of energy (thermal, mechanical, chemical, electrical, or radiated) that exceeds the tolerance capability of the human body and results in damage or lack of vital elements such as oxygen”. Unintentional injury is an independent event of the human will caused by external force acting on the individual, resulting in physical and/or emotional harm. It can be considered as unfavorable interplay of factors that occurs between an etiological agent and a susceptible host at any given time environment and set [1-3].

Because there is a high prevalence, unintentional injuries (unexpected event which may or may not be predictable) constitute an important cause of morbidity, disability permanent and are considered a problem of universal public health and death among children and adolescents [4]. Annually, more than 400,000 children aged up to 14 years die due to accidents, both in developed countries and those in development. [5] Each year in the USA, more than 3 million children and adolescents suffer some kind of unintentional injury, causing familiar consequences and extremely high social and financial costs [6]. In England, unintentional injuries are responsible for 8% of deaths of children under five years of age that generate 500,000 visits to emergency services and more than 40,000 hospitalizations [7]. It is known that unintentional injuries account for about 30% of deaths among Chinese children aged less 14 years old [8]. Furthermore data of the World Health Organization demonstrate about 2,000 children die and tens of thousands of them become permanently disabled throughout the world, each day, due unintentional injury that could be avoided [9].

There are several factors leading to unintentional injuries among children that are classified as individual inadequate behaviors, physical home and community environment, and social mechanisms like difficulty to access to health services [10].

To improve understanding of the occurrence of unintentional injuries first it is necessary to recognize the three different sets of factors, acting alone or together, and that ultimately culminate in the energy transfer to the host. Human factors include age and level of physical and emotional development of children. The sociocultural condition of the family is the second factor; while environmental physical characteristics represent the third set. Because the neurological development is taking place in accelerated evolution, in each age group the children have particular characteristics that increase their vulnerability, ranging from infant that is totally dependent on the adult until late adolescence. In this context it should be noted neurological and emotional immaturity that limits their physical and cognitive abilities, desire for experimentation, innate

curiosity, impatience, inability to anticipate and avoid danger, motivation to imitate and repeat behaviors, and anatomical characteristics (lower body mass, thin skin, large body surface, skull-body disproportion and small diameter of the upper airway [11].

Poverty, low education level of parents, unemployed / underemployed father and parental poor supervision are associated with lower ability to identify situations risk and provide care related to unintentional injuries [8,12,13]. Finally, the physical environment including especially home, sized for adult welfare, devoid of equipment and safety, requires the child to him adapt and be exposed to various risk situations.

The most affected group by unintentional injuries is that age from birth to 5 years old, especially demonstrated in several studies that boys were more likely than girls [6,14]. The features mentioned above make it possible to draw a profile of children that most commonly suffer unintentional injuries, including male gender, over one year old, overburdened with daily activities at school and at home, belonging to a large or dysfunctional family, low socioeconomic and educational level, or are suffering from physical or mental illness [15,16].

Home is the principal place of risk for children under five years of age and most frequent unintentional injuries are more falls, thermal injuries and poisonings [17]. Among the different household environments should be highlighted the kitchen where they are located stove, gas appliances, sharp and pointed objects and cleaning products, the yard/garden and living room [18,19]. Therefore, as the progress directed to the comfort of adults is not always associated with the necessary measures and safety equipment, the domestic environment is increasingly hostage of the technological development and it is dangerous for children. It is known that the vast majority of unintentional injuries can be avoided [3,17] and its prevention is one of the most important health promotion, with wider benefits for the child, the family and the whole society and should be widely disseminated and practiced at all levels in order to reduce morbidity, mortality and lost potential years of life [7]. Parents and caregivers should become able to identify which children are very receptive to stimuli, quickly develop motor and cognitive skills and therefore need to be protected. One of the ways commonly used to help prevent abuses is the ability to anticipate risks and develop strategies to avoid them or minimize them [17]. Therefore, a current and permanent developing of preventive actions in the home and in all places where children circulate is necessary. To make possible the implementation of these actions it is necessary to be aware about the characteristics of children in each age group, the control of environmental conditions and predisposing situations, as well as of the educational process directed to parents/caregivers.

Lack of knowledge of parents/caregivers about the problem is the most easily identified factor and that can lead to negligence in the care of children [18]. If adults are not prepared, even with supervision, that just not always be effective as new situations and unfamiliar environments and the presence of large numbers of people may interfere with the action of monitoring and supervision that should be developed by adults [19]. Therefore, it is essential to develop multidisciplinary actions for children and adults to be able to recognize the risks and learn to avoid them [14,20]. The child should always be protected, and the level of protection may be modified according with the developing. Moreover, is important highlight that they also has the ability to learn to protect themselves by avoiding risk situations. At the collective level, the unintentional injury prevention requires whole society involvement, which can act through public policies and actions aimed at safety, especially in the domestic environment, eliminating barriers and introducing facilitators who can offer all the home safety education [21]. Should be highlight here the three levels of actions that are crucial to increase safety and prevent accidents. The first concerns the legal processes or organizational policies of dependents, through legislation to protect people; furthermore, good communication between the entities and the target audience (educate parents for them to be protectors and educators of children), and finally, the environmental control through rules and appropriate standards to buildings, equipment and furniture [3,6,17,22].

Models for prevention of injuries are important tools that support the necessary actions for doctors, parents and community. The principal are the precocious home visitation in high risk families by health professional, scholar program to promote educational activities in traffic (use of seat-belt and child safety-seat) and to promote of emotion regulation that can reduce the violent behaviors [23-25]. The World report on accidental Injury Prevention in children, developed by the World Health Organization, describes the main steps to be taken to prevent unintentional injuries, which are, avoid/reduce the amount of risk; reduce the amount of energy contained at risk; prevent access to risk; modify the source of risk; separate the power supply of the host; use barriers between energy and the host; modify the contact surface; strengthen the structure receiving energy; combat the damage caused by the energy and finally, treat and rehabilitate the injury[26].

So, regardless of the age of the child will, always be necessary for adults to identify risk situations and provide protection, safety and comfort in all environments, preventing neglect such care can expose children to danger, against all odds that appear in their day-to-day [27].

Prevention of unintentional injury depends of sharing enter family, public health and healthcare delivery system. However, the diffusion of the knowledge is very important and the health professional should include this topic in the primary care and give assessment and training to teachers, educators, nannies, and other adults who care for children [10].

The adult continuing education through efforts of the whole society, improvements in environmental conditions and the recognition that accidents can occur in any situation requiring the participation of the entire society and all efforts should be directed to make the most environments safe and enjoyable.

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