

PREVENTING INJURIES IN THE HOME

Guest Column by Cathey E. Falvo, MD, MPH, FACPM, FAAP

Although “an ounce of prevention is worth a pound of cure,” 121,599 people died of injuries in the U.S. in 2006. Unintentional (but not unpredictable) injury* is the fifth leading cause of death and the rate has been rising over the years.¹ About half of deaths caused by unintentional injury involve motor vehicles. Others occur at work or school, but many occur in or immediately around the home and are potentially preventable. In 2007, among the 34.3 million medically consulted injury and poisoning episodes that occurred, almost one-half happened in or around the home.

The risk factors for motor vehicle death rates have been intensively studied and the findings applied to prevention. These rates are going down while the rates of poisonings, falls, and other injuries—risk factors for which have been studied but not widely addressed in practice—are rising. This article will address the risk factors and prevention strategies for physical injury and poisoning in and around the home according to risks at various stages in the life cycle.

RISKS

The risk of injury is related to age, gender, race and home location. Suffocation is a major cause of infant death while death from falls increases rapidly with people over the age of 65. Hispanics under the age of 15 have about half the injury rate of non-Hispanic blacks and two-thirds the injury rate of non-Hispanic whites, while in the over 65 age group the rates are nearly equal.²

Infancy and Childhood

In 2006, injury was the sixth leading cause of infant death. Injury death rates fall after infancy until middle adolescences, but they are an even greater proportion of overall mortality. Motor vehicles remain the principle cause of fatal and non-fatal injuries but scalds and burns, falls off furniture or out windows, power tools used around the home, and submersion in water become more prominent. Drowning is the leading cause of injury death for young children ages 1 to 4 years old and it is estimated that for every drowning death there are 1-4 non-fatal injuries with serious health sequelae.^{2,3} Infants and young children are at risk for poisoning once they start to crawl or walk because they are curious and tend to put many things into their mouth. Household cleaning products and medications, the paint used in pre-1970s housing, chemicals used in hobbies, and toxics brought home from work on the

* Injury is usually referred to as accidental meaning unintentional and unavoidable. But, most are predicable and thus preventable. We need a new language for the situation.

¹ Deaths: Final Data for 2006, Volume 57, Number 14 April 2009. Available at: http://www.cdc.gov/nchs/data/nvsr/nvsr57/nvsr57_14.pdf Accessed July 17, 2009.

² CDC. Injury in the United States: 2007 Chartbook. Available at: <http://www.cdc.gov/nchs/data/misc/injury2007.pdf> Accessed July 17, 2009.

³ CDC injury prevention site. Available at: <http://www.cdc.gov/ncipc> Accessed July 17, 2009.

clothing of adults, can all end up in the mouth of a child and lead to injury. When accessing these types of injuries it is also important to always consider whether an apparently accidental injury or poisoning is actually child abuse.

Adolescents and Young Adults

Injury in the U.S. is the major cause of death and disability by age 15. Motor vehicle and other unintentional injury remain the leading cause of death and disability until age 35 years (some of these are in fact suicide) and suicide and homicide are second and third, respectively.⁴ How much of injury is from belief by the young person of their invulnerability, lack of understanding of the consequences of their behavior, lack of a sense of reality from watching too much television and game playing, confusion and depression as they try to figure out who they are and what they and life are worth, and not having learned their own reaction to and ability to function under the influence of various drugs and alcohol, is not well defined.

Among 15- to 24-year olds, suicide accounts for 12.3% of all deaths annually.⁵ It is the second leading cause of death for 25-34 year olds and the third for 15-24 year olds. A national study in 2007 of suicide intent among U.S. high school students found that 14.5% of reported that they had seriously considered attempting suicide during the 12 months preceding the survey.⁵ More than 6.9% of students reported that they had actually attempted suicide. Overall, girls consider and attempt suicide almost twice as often as boys, but boys die more often. Drugs are the most common means of suicide completion or attempt but boys are also likely to use violent means such as guns (especially if they are available in the home), hanging or car crashes.

Starting with adolescence and continuing through later stages of life is the increasingly apparent problem of intimate partner violence/domestic violence. Most intimate partner violence is by a male against a female, but it happens in the reverse and between same sex partners. The rate of intimate partner violence has been increasing but this is likely due, in major part if not totally, to better recognition and reporting.

Adults and Elderly

With increasing age cardiovascular and other chronic diseases become the most common reasons for morbidity and mortality. However, motor vehicle collisions, poisoning, falls, homicide and suicide remain of concern. Unintentional poisoning was second only to motor vehicle crashes as a cause of unintentional injury deaths in 2005. Among people 35 to 54 years old, unintentional poisoning caused more deaths than motor vehicle crashes.⁵ Suicide among middle age females and older males along with abuse of elders by their caretakers is of particular concern. The suicide rate is highest in the 75-84 year age group. The changes in vision, hearing, coordination and other physical abilities play prominent rolls in the risks for all causes of injury.

⁴ CDC, National Center for Health Statistics. Table 10. Number of deaths from 113 selected causes and Enterocolitis due to Clostridium difficile, by age: United States, 2006. Available at: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/NVSR/57_14/Table10.xls Accessed July 17, 2009.

⁵ Adams PF, Barnes PM, Vickerie JL. Summary health statistics for the U.S. population: National Health Interview Survey, 2007. National Center for Health Statistics. Vital Health Stat 10(238). 2008. Available at: http://www.cdc.gov/nchs/data/series/sr_10/sr10_238.pdf Accessed July 17, 2009.

REMEDIES

Some general measures to be taken by all households to reduce the risk of injury include learning how to perform cardiopulmonary resuscitation, knowing the telephone numbers for emergency help and poison control, never putting poisons into unmarked containers or into bottles or jars usually used for food (such as soda bottles), installing carbon monoxide and smoke detectors, never starting a motor vehicle until everyone is in an appropriate for age and size safety restraint. Have an all purpose fire extinguisher in a readily accessible place and have periodic fire drills. Keep all medications in safety locked containers with the contents clearly labeled. Do not keep large amounts of medications in the home (a three month supply is sufficient). If a gun/s is in the home, it should be kept empty of ammunition and securely locked with the ammunition in a separate locked place. Health care providers should keep track of injuries and consider abuse (whether self inflicted or by a parent or partner) if they occur frequently. Never be shy of asking if partner abuse or thoughts of suicide are occurring. If you are not comfortable with these issues, consider taking a short training.

Infancy and Childhood

- Scalds and burns – Have the hot water temperature as low as possible; don't let pot handles protrude over the edge of stove or counter; have a protective gate in front of the fire place.
- Falls – Have child window guards on all windows, move chairs, cribs and other furniture away from windows; never leave an infant or child unattended on a raised surface; place safety gates at the top and bottom of stairs if there are infants or toddlers in the home.
- Power and sharp tools – Keep unplugged and covered.
- Drowning – Never leave a child in or near water unattended (they can drown in three inches of water) including bathtubs, toilets, large buckets, spas or pools, etc.; fence swimming pools and use personal flotation not air-filled devices.⁶
- Poisoning – Keep possible poison locked and out of reach; damp dust and mop to remove toxic dust or spills; change clothes at work if there is possible toxic dust exposure there.⁷
- If any injury is suspicious, refer to child abuse services.

Adolescents and Young Adults

- Suicide – Acknowledge attempts as a plea for help. Know what resources are available in the community, work to be sure they are adequate, and refer patient and family for help. Remove, as much as possible, instruments that can be used for suicide.
- Violence – Ask about violence in the patient's life (i.e., has he/she been either the victim or perpetrator of violence?). Refer for help when needed. If a patient denies any problems, volunteer to be available to listen should any arise.
- Drugs – Remind patients of the dangers of smoking, alcohol and other drugs and that if they do indulge never to mix them with driving or other activities where being alert is critical. Never let someone who is under the influence of drugs or alcohol drive you or anyone else.

⁶ Committee on Injury, Violence, and Poison Prevention. Prevention of drowning in infants, children, and adolescents. *Pediatrics* 2003;112(2):437-39.

⁷ Committee on Injury and Poison Prevention. Firearm-related injuries affecting the pediatric population. *Pediatrics* 2000;105(4):888-95.

Adults and Elderly

- Poisoning – Keep medications in safety lock bottles and labeled. When remembering to take medication becomes a problem, use daily/weekly medication dispensers.
- Falls – To reduce the risk maintain a regular exercise or dance program, review medications that may cause dizziness or disorientation, have regular vision checks, maintain proper lighting in the home, install grab bars next to the toilet and in the tub or shower as well as non-slip mats in the bathtub and on shower floors. Remove tripping hazards - small area rugs, elevated door jams, and loose electrical cords. Install handrails on stairways and use a step stool with a grab bar or extension “grabber” to reach objects on high shelves.⁸
- Abuse – Be alert to and ask about abuse. Refer (even for suspicions) to abuse services.

Useful Websites

American Academy of Pediatrics, <http://www.aap.org/parents.html>

American Academy of Family Physicians, www.aafp.org

American Association of Poison Control Centers, www.aapcc.org

American Association of Retired Persons, www.aarp.org

Environmental Protection Agency, www.epa.gov

National Fire Protection Association <http://www.homesafetycouncil.org>

National Institute on Aging, www.nih.gov/nia

National Resource Center for Safe Aging, www.safeaging.org/

Physicians for Social Responsibility, www.psr.org/resources/pediatric-toolkit.html

Safe Kids, www.safekids.org

⁸ CDC. Unintentional injury prevention. Available at: <http://www.cdc.gov/ncipc/duip/duip.htm> Accessed July 17, 2009.