Injury—A Risk at Any Stage of Life

At every age, from our earliest days to our golden years, we are at risk for injury and the disability and death that can result. No age is a "safe" age when it comes to injuries and violence.

But the injuries and threats of violence that we face change as we age and enter different life stages. Common sense tells us—and research confirms—that the risks a toddler faces are not the same as the risks a grandmother faces.

CDC tracks and monitors the injuries and violence that occur at different life stages and examines factors related to those life stages that increase or decrease a person's risk for injury and violence. With that information, we can tailor prevention programs to the needs, preferences, and life circumstances of particular age groups. By focusing on life stages, we can also forge partnerships that help us more effectively reach people in particular age groups.

Following is a brief overview of how injuries affect Americans in different age groups and how CDC addresses injury prevention and control at each life stage.

Injury—A Risk at Any Stage of Life

Infants and Toddlers (Ages 0–3)

- Nearly 3,100 children ages 3 and under died in 2002 from injuries (CDC 2004).
- For children under 1 year old, the leading cause of injury death is unintentional suffocation due to choking or strangulation (CDC 2004).
- Motor vehicle crashes are the leading cause of death for children ages 1 to 3 (CDC 2004). In 2003, one third of the children ages 4 and younger who died in motor vehicle crashes were riding unrestrained (NHTSA 2005).
- Children in this age group are at high risk for sustaining a traumatic brain injury (CDC 2004).
- Drowning is the second leading cause of injury death for children in this age group (CDC 2004). Children under age 1 most often drown in bathtubs, buckets, or toilets whereas toddlers most often drown in residential swimming pools (Brenner et al. 2001).
- In 2003, more than 1.8 million children under age 4 were nonfatally injured, and falls were the leading cause (CDC 2004).
- Child maltreatment by blunt trauma to the head or by violent shaking is a leading cause of head injury among infants and young children (Committee on Child Abuse and Neglect 2001).

Infants and young children are at greater risk for many injuries. This increased risk may be attributable to many factors. Children are curious and like to explore their environment. This characteristic may lead children to sample the pills in the medicine cabinet, play with matches, or venture into the family pool. Young children have limited physical coordination and cognitive abilities. This can lead to a greater risk for falls from bicycles and playground equipment and make it difficult for them to escape from a fire. And their small size and developing bones and muscles may make them more susceptible to injury in car crashes if they are not properly restrained.

Because babies and young children are so dependent on others and often cannot express themselves well verbally, they may be at higher risk for abuse or neglect. A baby or toddler who experiences abuse cannot tell someone about it, so the abuse may continue. And because of their small size, they can be seriously injured if hit, pushed, or shaken by an adult.

CDC is involved in many efforts to keep America's youngest children safe. The Injury Center supports programs to increase child safety seat use, prevent injuries related to residential fires, and prevent child maltreatment. Injury Center staff also works with partners to explore the roles that supervision and parenting play in preventing injuries.

Children (Ages 4–11)

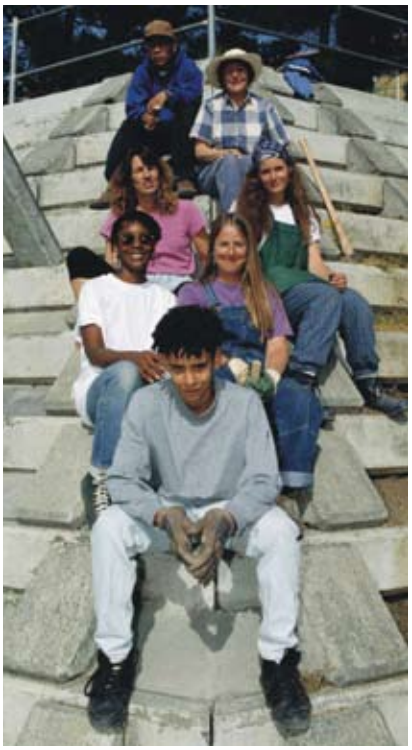
- In 2002, nearly 2,300 children ages 4 to 11 died from injuries (CDC 2004).
- Motor vehicle injuries are the leading cause of death for this age group (CDC 2004).
- For children 4 to 7 years, belt-positioning booster seats reduce injury risk by 59% compared with seat belts alone (Durbin et al. 2001). Although restrained, only 37% ride in age-appropriate belt-positioning booster seats (Cody et al. 2002).
- Drowning is the second leading cause of injury-related death among children ages 4 to 11 (CDC 2004).
- In 2003, almost one quarter (23%) of children ages 5 to 9 who were killed in traffic crashes were pedestrians (NHTSA 2004a).
- Among children ages 4 to 11, homicide is the fourth leading cause of death, taking the lives of 250 children in 2002.
- Forty-two percent of homicide deaths in this age group were caused by firearms (CDC 2004).
- Nearly 3.2 million children ages 4 to 11 were nonfatally injured in 2003. Unintentional falls were the most common cause of injury (CDC 2004).

CDC's Injury Center staff is working to prevent injuries among this group by increasing the use of booster seats, encouraging parents to have their children ride in the back seat of motor vehicles, and promoting pedestrian safety. CDC is looking into the risk factors for child maltreatment, including child sexual abuse, and also is exploring prevention programs for child maltreatment.

Adolescents (Ages 12–19)

- Nearly 4.7 million adolescents were nonfatally injured in 2003; nearly 12,200 died from injuries in 2002 (CDC 2004).
- Motor vehicle crashes are the leading cause of death for adolescents ages 12 to 19 (CDC 2004).
- The risk for motor vehicle crashes is higher among 16- to 19-year-olds than in any other age group. Per mile driven, drivers in this age group are four times more likely than older drivers to crash (IIHS 2004).
- More than 18% of high school students in a 2003 survey reported rarely or never wearing seat belts; 12% reported drinking and driving; and 30% reported riding with a drinking driver in the month preceding the survey (Grunbaum et al. 2004).
- Traumatic brain injuries among this age group account for more than 240,000 emergency room visits, 36,000 hospitalizations, and more than 5,700 deaths each year (CDC 2004).
- Nearly 63,000 sports-related concussions occur annually in high school sports (Powell and Barber-Foss 1999).
- Homicide is the second and suicide is the third leading cause of death in this age group. Most homicides and about half of suicides involve a firearm (CDC 2004).
- In a 2003 survey, nearly 13% of high school students had been in a physical fight on school property at least once in the preceding year. More than 6% had carried a weapon at school in the month preceding the survey (Grunbaum et al. 2004).
- Adolescents 10 to 14 years of age have the highest rates of sports- and recreation-related injury (Gotsch et al. 2002).

CDC supports many programs to reduce injuries and violence among adolescents and teens. CDC now supports several activities to evaluate the effectiveness of graduated driver licensing (GDL) programs and to examine how parental actions affect teen driving behavior. Activities include implementation in driver's education classes of the Checkpoints Program, developed by the National Institutes of Health to improve parental management of the learning-to-drive process; implementation and evaluation of two community-based interventions on enforcement and social normative programs to improve adherence to GDL systems; and support of the Council of State Governments' efforts to enhance state legislators' knowledge about teen driver safety issues and help strengthen their relationships with one another, CDC, and other federal and state agencies. CDC is also developing a communications campaign to improve the safety of teen drivers, their passengers, and other road users. Recently, CDC developed a tool kit to educate coaches and athletes about sports-related concussions. CDC supports several projects now underway to identify and address risk factors for youth suicide and interpersonal violence, including research that examines links between different types of violence and explores the role of violent media on violent behavior.



Adults (Ages 20–49)

- More than 79,500 adults ages 20 to 49 died from injuries in 2002. Motor vehicle crashes were the leading cause of those deaths (CDC 2004).
- Suicide and homicide ranked as the fourth and fifth leading causes of death, respectively, among this age group. As with adolescents, about half of suicides and most homicides involved a firearm (CDC 2004).
- In 2003, nearly 13.6 million adults ages 20 to 49 were nonfatally injured (CDC 2004).
- The most common cause of nonfatal injury was falls (17%), followed by overexertion (15%) (CDC 2004).

Many of CDC's injury and violence prevention efforts address injuries among this group. For example, programs to prevent intimate partner violence, reduce alcohol-impaired driving, increase smoke alarm use, and improve trauma care systems all benefit this age group.

Older Adults (50 and older)

- In 2002, nearly 64,000 adults ages 50 and older died as a result of injuries (CDC 2004).
- Falls were the most common cause of injury death in this age group, accounting for more than 14,000 deaths in 2002 (CDC 2004).
- Falls are the most common cause of nonfatal injuries in this age group. In 2003, 2.7 million older adults were injured from falls, comprising 46% of all nonfatal injuries in this group.
- Drivers ages 65 and older have higher crash death rates per mile driven than all but teen drivers (NHTSA 2004b).
- People ages 75 years and older have the highest rates of traumatic brain injury-related hospitalization and death (CDC 2004).
- In 2002, more than 12,000 Americans ages 50 and older died from suicide (CDC 2004).

Several CDC activities address the problem of injury among older Americans. These include a fire and fall prevention program for older adults and a study which examines reasons why older drivers decide to stop driving. Additionally, CDC is developing a research agenda to prevent older adult maltreatment and is funding research on ways to improve acute injury care among this population.

References

Brenner RA, Trumble AC, Smith GS, Kessler EP, Overpeck MD. Where children drown, United States, 1995. *Pediatrics* 2001;108(1):85–89.

Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. Web-based Injury Statistics Query and Reporting System (WISQARS) [online]. (2004) [cited 2005 Feb 28]. Available from: URL: www.cdc.gov/ncipc/wisqars.

Cody BE, Mickalide AD, Paul HP, Coleila JM. Child Passengers at Risk in America: A national study of restraint use. Washington (DC): Matopma; SAFE KIDS campaign, February 2002.

Committee on Child Abuse and Neglect. Shaken-baby syndrome: rotational cranial injuries technical report. *Pediatrics* 2001;108:206–210.

Durbin DR, Kallan NJ, Winston FK. Trends in booster seat use among young children in crashes. *Pediatrics* 2001;108(6): E109.

Gotsch K, Annest JL, Holmgreen P, Gilchrist J. Non-fatal sports and recreation-related injuries treated in emergency departments—United States, July 2000–June 2001. *Morbidity and Mortality Weekly Report* 2002;51(33):736–740.

Grunbaum JA, Kann L, Kinchen S, Ross JG, Lowry R, Harris WA, et al. Youth risk behavior surveillance—United States, 2003. *Morbidity and Mortality Weekly Report* 2004;53(SS-2):1–100. Available from: URL: www.cdc.gov/mmwr/preview/mmwrhtml/ss5302a1.htm.

Insurance Institute for Highway Safety (IIHS). *Fatality Facts: Teenagers 2002.* Arlington (VA): The Institute; 2004.

National Highway Traffic Safety Administration (NHTSA), Department of Transportation (US). *Traffic Safety Facts 2003: Pedestrians.* Washington (DC): NHTSA; 2004a. [cited 2005 Feb 23]. Available from: URL: www-nrd.nhtsa.dot.gov/pdf/nrd-30/NCSA/TSF2003/809769.pdf.

———. *Traffic Safety Facts 2003: Older Population.* Washington (DC): NHTSA; 2004b. [cited 2005 Feb 23]. Available from: URL: www-nrd.nhtsa.dot.gov/pdf/nrd-30NCSA/TSF2003/809766.pdf.

———. *Traffic Safety Facts 2003.* Washington (DC): NHTSA; 2005. [cited 4 Mar 2005]. Available from: URL: www-nrd.nhtsa.dot.gov/pdf/nrd-30/NCSA/TSFAnn/2003HTMLTSF/TSF2003.htm.

Powell JW, Barber-Foss KD. Traumatic brain injury in high school athletes. *Journal of the American Medical Association* 1999; 282(10):958–963.