

Firearm Injuries Affecting the Pediatric Population

Committee on Injury and Poison Prevention

In the United States approximately 30 000 people die from firearm injuries each year. Many more are wounded. In the mid 1980s, more than 3000 of the dead were children and adolescents aged 1 to 19 years.¹ In 1989 nearly 4000 firearm deaths were among children 1 to 19 years of age, accounting for 12% of all deaths in that age group.² All of these deaths or injuries affect other children because the victims who are killed or wounded are frequently relatives, neighbors, or friends.

Comparison data for childhood age groups demonstrate that in 1987, 203 children aged 1 to 9 years, 484 children aged 10 to 14 years, and 2705 adolescents aged 15 to 19 years died as a result of firearm injuries.¹ Firearm deaths include unintentional injuries, homicides, and suicides. Among the 1- to 9-year-olds, half of the deaths were homicides and half were unintentional. Among the 10- to 14-year-olds, one third of the deaths were homicides, one third were suicides, and one third were unintentional. Among the 15- to 19-year-olds, 48% were homicides, 42% were suicides, and 8% were unintentional.¹

Firearm homicides are the leading cause of death for some US subpopulations, such as urban black male adolescents and young adults.³ Table 1 indicates how firearms contributed to the deaths of children and adolescents (homicides, suicides, and all causes) in 1987. Table 2 illustrates the unusual scale of firearm violence affecting young people in the United States compared with other developed nations.⁴ Firearm injuries are the fourth leading cause of unintentional injury deaths to children younger than 15 years of age in the US.⁵

Because the Consumer Product Safety Commission no longer monitors firearm injury incidence, current data on nonfatal firearm injuries are sketchy.⁶ However, medical reports indicate that of all children and adolescents hospitalized due to firearm injuries, about 12% die, and many survivors are permanently disabled.⁷⁻¹¹ Alarming, there is now evidence from the National Center for Health Statistics,⁴ National Pediatric Trauma Registry, newspaper monitoring, and emergency department physician accounts that the number of medically treated firearm injuries to children and adolescents is increasing nationwide.

There is substantial evidence that handguns are the major contributor to firearm injuries affecting children and adolescents. At least half of all fatal and

hospitalized nonfatal pediatric firearm injuries are caused by handguns.¹² Of the roughly 500 unintentional firearm injury deaths each year (the majority of which affect boys younger than 15 years of age), most involve handguns found in the home of the victim, a relative, or a friend.^{7,14,15} The majority of firearm homicides and suicides involve handguns.^{1,16} Media accounts have identified semiautomatic handguns as the weapons used in some recent firearm homicides involving children and adolescents.

The following facts are particularly pertinent for short-term and long-term prevention of child and adolescent firearm injuries.

- Half of the homes in the US contain firearms. There are an estimated 200 million firearms in these homes, and 60 million of these are handguns.
- Manufacturers and retailers promote handguns (and handgun ammunition) to home owners, but no safety regulations exist for these potentially deadly consumer products. Possible regulations could address minimum trigger pressure, trigger locks, loading indicators, and bullet characteristics.
- Societal factors, including media portrayals, foster dangerous gun use patterns by children, adolescents, and adults.
- Developmental vulnerabilities of children and adolescents contribute to injury patterns (eg, childhood curiosity, adolescent bravado). These cannot be fully overcome by changes in gun design or education.
- Firearm safety programs directed at children are being promoted actively by some groups in some locales. There is no evidence that these programs are effective in reducing either gun handling or gun injuries. This may be because developmental characteristics of children and adolescents (eg, impulsivity, poor judgment, active imagination) cannot be addressed effectively by such programs.
- Although legal authorities agree that the second amendment to the US Constitution prohibits Congress from interfering with state militias, this amendment does not preclude legislative and regulatory measures that would reduce the accessibility of handguns in the environments in which children live and play.¹⁷

Because firearm injuries to children are particularly devastating to the children, their families, and society, pediatricians and other child health care providers can and should provide effective leadership in efforts to stem our national firearm injury epidemic. Proposed prevention strategies include firearm design

The recommendations in this publication do not indicate an exclusive course of treatment or serve as a standard of medical care. Variations, taking into account individual circumstances, may be appropriate. This statement has been approved by the Council on Child and Adolescent Health. PEDIATRICS (ISSN 0031 4005). Copyright © 1992 by the American Academy of Pediatrics.

TABLE 1. Contribution of Firearms to All Deaths, Homicides, and Suicides, in 1987

| Death Category | Firearm-Related Deaths in Children and Adolescents* | | | |
|----------------|---|-------|---------|-----------------------|
| | 1-4 y | 5-9 y | 10-14 y | 15-19 y |
| All causes | 1 | 2.9 | 10.9 | 17.3 (Black: 40.8) |
| Homicides | 12 | 39.0 | 65.0 | 71.0 (Black: 82.0) |
| Suicides | ... | ... | 60.0 | 60.0 (Black: 71.0) |

* Values stated are percentages.

TABLE 2. Firearm Homicides in Males Aged 15 to 24 Years in the US and Several Other Developed Countries⁴

| Country | Year | Firearm Homicides | Total Homicides |
|---------------|------|-------------------|-----------------|
| US | 1987 | 3187 | 4223 |
| Canada | 1986 | 17 | 62 |
| Japan | 1987 | 3 | 49 |
| France | 1986 | 32 | 59 |
| West Germany | 1987 | 3 | 49 |
| Australia | 1987 | 11 | 34 |
| England/Wales | 1987 | 3 | 48 |
| Sweden | 1986 | 3 | 14 |

Source: Fingerhut LA, Kleinman JC. *JAMA*. 1990;263:3292-3295.⁴

regulations and modifications, appropriate product liability actions, public and parent education, and legislation to restrict private possession of firearms.¹⁸ The injury situation is extremely urgent, yet no prevention approach has been evaluated fully. Judgments about the merits of the various approaches must be based on knowledge of child development and injury prevention. Based on the information now available, the Academy makes the following recommendations, which are consistent with both previous American Academy of Pediatrics policy¹⁹ and the US Department of Health and Human Services 1990 public health objectives.²⁰

1. The Academy believes that the surest way to reduce the effects of firearm-related trauma on children is to remove handguns from the environments in which children live and play.
2. The Academy supports legislative and regulatory measures that would reduce the accessibility of handguns in the environments in which children live and play. Such measures might include restrictions on the private purchase of handguns and restrictions on the possession of handguns within the home (up to and including bans).
3. The Academy supports efforts to regulate and so reduce the destructive power of handgun ammunition.
4. The Academy urges pediatricians and other child health care providers to inform patients and parents about the dangers of having a handgun in the home. Particular emphasis should be placed on high-risk homes—those with alcohol or drug-prone or drug-addicted individuals—and those with adolescent boys.
5. The Academy supports efforts to reduce the romanticization of gun use in the popular media.

6. Because gun education programs are widely available and heavily promoted, the Academy cautions educators to choose educational programs and approaches carefully, avoiding those that might inadvertently encourage or promote the access of firearms to children. Gun safety education programs directed at children should be evaluated prior to widespread implementation.

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REFERENCES

1. Fingerhut LA, Kleinman JC. *Firearm Mortality among Children and Youth*. Advance data from Vital and Health Statistics of the National Center for Health Statistics, No. 178; November 3, 1989.
2. Fingerhut LA, Kleinman JC, Godfrey E, Rosenberg H. Firearm mortality among children, youth, and young adults 1-34 years of age, trends, and current status: United States, 1979-1988. *Monthly Vital Statistics Report*. Hyattsville, MD: National Center for Health Statistics; 1991;39 (suppl): No. 11
3. O'Carroll PW. Homicides among black males 15-24 years of age, 1970-1984. *MMWR*. CDC Surveillance Summ 1988;37 (55-1):53-60.
4. Fingerhut LA, Kleinman JC. International and interstate comparisons of homicide among young males. *JAMA*. 1990;263:3292-3295
5. Baker SP, Waller AE. *Childhood Injury: State-by-State Mortality Facts*. Baltimore, MD: Johns Hopkins Injury Prevention Center; January 1989
6. Christoffel K. Violent death and injury in US children and adolescents. *AJDC*. 1990;144:697-706
7. Wintemute GJ, Teret SP, Kraus JF, et al. When children shoot children: 88 unintended deaths in California. *JAMA*. 1987;257:3107-3109
8. Ordog GJ, Wasserberger J, Schatz I, et al. Gunshot wounds in children under 10 years of age: a new epidemic. *AJDC* 1988;142:618-622
9. Keck NJ, Istre GR, Coury DL, Jordan F, Eaton AP. Characteristics of fatal gunshot wounds in the home in Oklahoma: 1982-1983. *AJDC*. 1988;142:623-626
10. Musameche CA, Miner ME, Gibson A, Andrassy RJ. Gunshot wounds in children: an urban experience. *Pediatr Emerg Care*. 1988;4:144
11. Walsh IR, Eberhart A, Knapp JF. Pediatric gunshot wounds: powder and nonpowder weapons. *Pediatr Emerg Care*. 1988;4:279-283
12. Tanz RR, Barthel MJ. Bullets, BB's, and boys: understanding gun injuries treated at a pediatric trauma center. *AJDC*. 1989;143:426
13. National Pediatric Trauma Registry data analysis, provided by Barbara Barlow, MD, FAAP

14. Smith DR, Cohen J, Lautman B. *Child's Play: A Study of 266 Unintentional Handgun Shootings of Children*. Washington, DC: Center to Prevent Handgun Violence; 1988
15. Smith D, Scherzer V, Lautman B. *The Killing Seasons: A Study of When Unintentional Handgun Shootings Among Children Occur*. Washington, DC: Center to Prevent Handgun Violence; June 1989
16. Wintemute GJ, Teret SP, Kraus JF, et al. The choice of weapons in firearm suicides. *Am J Public Health*. 1988;78:824-876
17. Zimring FE, Hawkins G. *The Citizens Guide to Gun Control*. New York: MacMillan Publishing Co; 1987
18. Christoffel KK. Toward reducing pediatric firearm injuries: charting a legislative and regulatory course. *Pediatrics*. 1991;88:294-305
19. American Academy of Pediatrics, Committee on Accident and Poison Prevention. Handgun control. *AAP News*. August 1985
20. US Department of Health and Human Services, Office of Disease Prevention and Health Promotion. *Healthy People 2000: National Health Promotion and Disease Objectives*. 1990. Department of Health and Human Services publication PHS-50213

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