

Fact Sheet

Youth ATV Injuries

October 2001



Background

All-terrain vehicles (ATVs) are motorized vehicles with large, low-pressure tires, are designed for off-highway use. ATV models can weigh from 100 to 600 pounds¹ and travel up to 75 MPH.

The Consumer Product Safety Commission and ATV distributors signed a 10 year consent decree with ATV manufacturers containing the following components: three-wheeled ATVs could no longer be sold, offer free safety training for new ATV operators, prevent sales of adult sized ATVs for use by youth under 16 years, safety warnings to prospective ATV buyers, and development of voluntary standards to make ATVs safer. The agreement expired in 1998.

Population at Risk

According to a 1997 survey, an estimated 826,000 U.S. children under 16 years operate ATVs.² Sixty percent of ATV-owning households are located in areas with populations of less than 100,000 persons. ATV-owning households are more prevalent in the South and Midwest and less prevalent in the Northeast.³ Forty-two percent of ATVs in U.S. households were not purchased at a franchised dealership.²

What is the injury experience of youth on ATVs?

- From 1995 to 1999, the estimated number of ATV-related emergency department visits for U.S. youth under age 16 grew annually from 19,300 to 28,700, a 33% increase.⁴
- Nationwide in 1999, youth under 16 represented 34% of all ATV-related emergency department visits.⁴
- From 1982-1999, 1,310 U.S. youth under age 16 died while riding an ATV. Youth under 16 represented 35% of all ATV-related deaths.⁴
- Youth are commonly injured fatally and non-

fatally in rollover crashes, collisions with stationary objects, and by falling off the ATV.^{5, 6}

- Approximately 70% of fatal injuries to youth under 19 years involve the head and neck.⁵ Common non-fatal injuries include broken upper and lower extremities, head injuries, bruises and scrapes.^{6, 7}
- ATV operators under 16 are nearly four times more likely than ATV operators over 16 to experience an injury requiring emergency room treatment.⁸
- According to a 1997 national survey of ATV riders, 36% reported wearing a helmet all the time.³
- A national survey of injured ATV operators found the hospitalization rate for ATV-related injuries was 13%, compared to a hospitalization rate of 4% for other consumer product-related injuries.²

What factors associated with ATV-related injuries to youth?

- Youth Under 16 years
 - No helmet use^{6, 7, 9-11}
 - Immature judgment, risk taking and/or motor skills¹²⁻¹⁴
 - Male gender^{6, 7, 11, 13}
 - Having a passenger^{5, 6, 9, 10}
 - Recreational use^{2, 15}
 - Driving an ATV larger than that recommended for their age²
 - Alcohol is generally not a factor among youth injuries^{5, 7, 10}
- General population (including youth)
 - Three-wheel ATVs⁸
 - more years of driving experience⁸

What developmental factors put youth at-risk for ATV-related injuries?

Most youth under 16 years do not possess:

- The physical size, strength, coordination, and motor skills to operate an ATV

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- The cognitive capacity to look for and react to potential hazards
- Good judgment to not act impulsively or take excessive risks

What strategies promote safe ATV operation among youth?

- The American Academy of Pediatrics recommends children under 16 should not operate an ATV.¹⁶
- Wearing a helmet reduces the risk of fatal head injury by 42% and the risk of non-fatal head injury by 64%.¹⁷ The helmet should also provide face protection. Other recommended riding gear includes a long sleeve shirt/jacket, long pants, goggles (if the helmet does not provide face protection), boots and gloves.
- It is uncertain whether participation in an ATV safety education prevents injuries.

Citations

1. Rodgers GB. All-terrain vehicle injury risks and the effects of regulation. *Accid Anal Prev.* 1993;25:335-46.
2. Rodgers GB. All-terrain vehicle exposure, injury, death, and risk studies. . Bethesda, MD: U. S. Consumer Product Safety Commission; 1998:95.
3. Rodgers GB. The characteristics and use patterns of all-terrain vehicle drivers in the United States. *Accid Anal Prev.* 1999;31:409-19.
4. David J. Annual Report of ATV deaths and injuries. Washington, DC: United States Consumer Product Safety Commission; 2000:7.
5. All-terrain vehicle-related deaths--West Virginia, 1985-1997. *MMWR Morb Mortal Wkly Rep.* 1999;48:1-4.
6. Lynch JM, Gardner MJ, Worsley J. The continuing problem of all-terrain vehicle injuries in children. *J Pediatr Surg.* 1998;33:329-32.
7. Lister DG, Carl J, 3rd, Morgan JH, 3rd, et al. Pediatric all-terrain vehicle trauma: a 5-year statewide experience. *J Pediatr Surg.* 1998;33:1081-3.
8. Rodgers GB, Adler P. Risk factors for all-terrain vehicle injuries: a national case-control study. *Am J Epidemiol.* 2001;153:1112-8.
9. Helmkamp JC. All-Terrain vehicle-related deaths and injuries in the United States, 1985-1998. *2001 Congress of Epidemiology Abstracts.* Toronto, Canada: 2001.
10. Stevens WS, Rodgers BM, Newman BM. Pediatric trauma associated with all-terrain vehicles. *J Pediatr.* 1986;109:25-9.
11. Bercher DL, Staley K, Turner LW, Aitken M. Pediatric injuries resulting from use of all-terrain vehicles. *J Ark Med Soc.* 2001;97:351-3.
12. Ganos D, Crady S, Poortenga S, Hoffman G, Mann R. Trauma associated with three- and four-wheeled all-terrain vehicles: is the four-wheeler an unrecognized health hazard? *Am Surg.* 1988;54:429-33.
13. Helmkamp JC. Adolescent all-terrain vehicle deaths in West Virginia, 1990-1998. *W V Med J.* 2000;96:361-3.
14. Dolan MA, Knapp JF, Andres J. Three-wheel and four-wheel all-terrain vehicle injuries in children. *Pediatrics.* 1989;84:694-8.
15. Gibbs L, Lawrence D, Reilley B. ATV-related central nervous system injuries in Louisiana. *J La State Med Soc.* 1997;149:276-8.

16. American Academy of Pediatrics Committee on Injury and Poison Prevention. All-terrain vehicle injury prevention: two-, three-, and four-wheeled unlicensed motor vehicles. *Pediatrics.* 2000;105:1352-4.
17. Rodgers GB. The effectiveness of helmets in reducing all-terrain vehicle injuries and deaths. *Accid Anal Prev.* 1990;22:47-58.

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