



AMERICAN PEDIATRIC SURGICAL ASSOCIATION
POSITION STATEMENT ON THE USE OF ALL-TERRAIN VEHICLES BY CHILDREN AND YOUTH

Trauma Committee of the American Pediatric Surgical Association

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Three-wheel all-terrain vehicle (ATV) sales started in the United States in 1970, and the sale of four-wheeled versions started in 1983. The first ATV developed for “younger riders” was a three-wheeled version that entered the market in 1973. Although ATVs were initially developed for recreation, which remains their primary use, diversification of ATV use occurred promptly, with additional uses identified in hunting and farming activities. The popularity of ATVs soared, and in 2008, the latest date for which government estimates are available, there were an estimated 10.2 million four-wheel ATVs in use in the U.S. [1]. The United States Consumer Product Safety Commission (CPSC) has provided annual reports on ATV-related injuries since 1984, with the most recent report from 2015 [2]. In addition to the annual CPSC reports, several hundred medical manuscripts that describe death and injury associated with ATV use have been published.

The American Pediatric Surgical Association Trauma Committee published a position statement on the use of ATVs by children in 2009 [3]. This followed position statements from other medical societies, including the American Academy of Orthopaedic Surgeons (initial statement in 1987, updated in 2005, 2010 and 2015) [4], the American Academy of Pediatrics [5], the Canadian Paediatric Society (initial statement in 2004, updated in 2012) [6], the Canadian Association of Pediatric Surgeons [7], and the American College of Surgeons [8]. All of these position statement were drafted out of response to the unacceptably high numbers of children being injured or killed while using an ATV.

The 2005 CPSC annual report on ATV-related deaths and injuries was the most recent report available to the author of the original APSA statement [9]. At that time, 2,178 children had been killed while riding ATVs, and over 20,000 children < 16 years were being injured annually. Children accounted for 30% of all ATV-related fatalities, a number that was disproportionately high relative to the number of children riding ATVs [9]. The cost of all ATV crashes in 2007 was estimated to be \$22.3 billion [1]. The number of reported deaths and estimated number of injuries peaked in 2007, and both of these have decreased in subsequent years [2]. These decreases in reported deaths and estimated injuries have occurred in all age groups, including children 12-15 years and children < 12 years.

Despite the reported decrease in annual injuries and fatalities, children are still injured and killed too frequently in ATV-related accidents. ATVs are the most dangerous “discretionary use product for children” within the jurisdiction of the CPSC [10]. The 2015 CPSC annual report [2] lists 3,163 ATV-related

fatalities from 1982-2015 of children < 16 years. Of those deaths, 1,380 were in children < 12 years. More than 600 children < 16 years and more than 300 children < 12 years have been killed since the original APSA position statement. In 2012, the last year for which finalized data is available, 68 children < 16 years, and 39 children < 12 years were killed in ATV-related accidents. More than 26,000 children < 16 years, and over 13,000 children < 12 years were estimated to have sustained an ATV-related injury in 2015 alone [2]. Male gender, age group of 12-15 years, significant head trauma, adult type ATVs (engine size>350cc), and absence of protective gear (helmets) are the major risk factors for fatalities and serious injuries associated with ATV accidents [11, 12]. A more recent concern is that of ATV-related accidents on public roads, where more than 300 ATV-related fatalities occur each year; 10% of these fatalities occurring in children < 15 years [13].

The reasons for the decreasing rate of death and injury are uncertain. The U.S. Consumer Product Safety Commission still monitors ATV-related injuries and fatalities, and works with industry organizations to approve vehicle standards. However, the CPSC has much less authority over ATV production and sales since the end of the 1988 Consent Decrees in 1998. The latest adoption of industry standards was accepted “not because it represents a giant leap forward in safety but because ‘the . . . standard *does not diminish the safety* of the ATV vehicle.’ To state the obvious, this is a low threshold for federal safety standards.” [10]

There are conflicting reports regarding the effect of legislation on ATV-related accidents. Upperman et al. [14] described limited effect of age-based or training-based legislation on ATV-related mortality. Helmkamp et al. [15] described a similar limited effect of training-based legislation, but improved mortality rates with helmet laws. A more recent statewide evaluation in Massachusetts found a decrease in emergency department and inpatient discharges associated with ATV injuries after legislation was enacted that restricted ATV use for children less than 14 years old on public and private land unless stringent requirements were met. This law included requirements for training classes, protective gear, adult supervision and registration of off-road vehicles [16]. In addition to previous recommendations of legislation, education, protective equipment, and sales restrictions for ATVs to be used by minors, some authors are suggesting interventions used in other areas of youth-related health issues (such as peer-to-peer interventions) as potential avenues to reduce ATV-related injuries [17]. Injury prevention with age-appropriate interventions, based on specific risk factors for different age groups, have also been advocated [12].

As part of promoting the health of their patients, physicians should advocate to limit activities and practices that put their patients at risk of injury and death. Due to this, the American Pediatric Surgical Association Trauma Committee recommends the following:

- Our strongest recommendation is that children younger than 16 years lack the judgment and physical ability to safely operate motorized vehicles and should not operate ATVs of any size. However, we recognize that many parents will find this recommendation unacceptable. For those parents with children younger than 16 years who choose to allow their children to operate an ATV, we recommend that only ATVs designed for younger children (i.e. 90 cc engine or less) be operated, that no child less than 12 years be allowed to operate an ATV, and that the remaining recommendations be followed.
- Children between ages 16 and 18 should ride age appropriate vehicles with an engine size no greater than 350 cc and should be supervised by a responsible adult. As mentioned above,

children between ages 12 and 15 should only operate ATVs with engine sizes appropriate for smaller children, generally less than 90 cc.

- All-terrain vehicle drivers should complete an approved and age appropriate training course.
- All-terrain vehicles are designed for a single rider, and no passenger of any age should ever be on board. This includes the recommendation that children not ride as passengers on ATVs with adult drivers.
- All-terrain vehicle operators should always wear a government-approved helmet, eye protection and appropriate protective clothing.
- All-terrain vehicles are intended for off-road use and should not be used on public roads.
- No one should drive an ATV while under the influence of alcohol or other substances that can impair judgment, insight and reaction time.
- All-terrain vehicles should not be used after dark.

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