

ALL-TERRAIN-VEHICLE

ATV

SAFETY CRISIS

**AMERICA'S
CHILDREN
AT RISK**

Advisory Board of Health Professionals

The following physicians and other health professionals have reviewed this report, offered helpful comments and conducted much of the original research on which it is based. We gratefully acknowledge their assistance and commitment to protecting America's children.

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Executive Summary

At first glance, all-terrain vehicles, or ATVs, may seem harmless enough, given their big tires, apparently wide stance, 4-wheel drive, cushy seat – but appearances are deceiving. These vehicles are built and marketed for speed with many ATVs capable of traveling up to 75 miles per hour. They injure, maim and kill more than 111,000 Americans every year, and the real tragedy is that children younger than 16 years old pay the heaviest price. For nearly a decade, the toll on children has been climbing dramatically, while the off-road vehicle industry has aggressively marketed bigger, faster, and more dangerous ATVs.

Pediatricians, orthopaedic surgeons, medical researchers, consumer advocates and others believe it is time to say enough is enough to the industry's approach to ATV safety – an approach that can best be described as self-regulation. Simply put, there is not a state in the nation that regulates ATVs the way that automobiles are regulated even though ATVs can go as fast as, and according to some experts, are more dangerous than cars. There are good, common sense reasons that states set minimum age levels and requirements for training, testing and licensing in order to drive a car. The very same reasons ought to apply to ATVs, but all too often they do not. It is time for a new approach that puts the well-being of America's children – and every ATV rider – first.

This report describes the serious threats ATVs pose to public health, especially to children too young to drive a car; analyzes the 15-year history of an industry-dominated approach to safety; and offers a series of recommendations that, if implemented, would provide real protection for America's children — and every operator of an ATV.

Size Matters

There is a good reason why children under 16 should not be allowed to drive an ATV: they are heavy, unwieldy, and require size, strength and coordination to operate safely.

- The average adult-size ATV weighed 550 pounds in model year 2001.
- Steering is complex and counterintuitive. According to the 4-H ATV Rider Handbook, the recommended method of turning requires the rider to “lean [your] upper body to the inside of the turn while applying pressure to the outer footrest. The objective of this is to reduce weight on the inside wheel.” A child cannot even begin to follow this process if he or she is too short to reach the footrest and is outweighed by the machine many times over.

Exploding ATV Sales and Speed

All-terrain vehicle sales are growing rapidly in the United States. The industry is aggressively building and marketing bigger, faster and more dangerous machines. Its advertising emphasizes speed, power and thrill.

- At least 7 million ATVs are estimated to be in use in the United States today. The industry has set a goal of selling 1 million ATVs annually by 2004.
- Between 1989 and 1997, the industry increased production of ATVs with large engines three-fold.
- ATV enthusiast magazines prominently display “drag race times” charting how fast ATVs can speed the length of a football field.
- The industry’s spending on advertising increased more than six-fold between 1996 and 2001.

Rising Injuries and Fatalities

As bigger, faster and more dangerous ATVs were introduced into the market throughout the 1990s, injuries and deaths increased significantly. By virtually every measure, injuries and fatalities are once again approaching the levels that prompted the U.S. Consumer Product Safety Commission (CPSC) to force the phase-out of highly dangerous three-wheel ATVs in the late 1980s.

- Between 1982 and 2001, at least 4,541 adults and children were killed in ATV accidents.*
- Between 1993 and 2001, the number of injuries caused by ATV-related accidents more than doubled to 111,700.
- During this same period, the number of injuries caused solely by accidents involving four-wheel ATVs increased by 211 percent to nearly 100,000.
- The risk of injury to riders of four-wheel ATVs today is nearly as great as it was in the late 1980s.

Children Under 16 Most at Risk

Pediatricians, orthopaedic surgeons and other health professionals across the country are expressing growing concern that the industry’s self-regulating approach has failed to protect children and continues to leave them as vulnerable to injury and death as they were 15 years ago. The problem is so serious that major medical associations have issued formal policies concerning ATV use by children.

- Between 1982 and 2001, 1,714 children under the age of 16 – or 38 percent of the total number of fatalities – were killed in ATV accidents. Of those, 799 were children under age 12.

* The term “accident” as used in this report is a term that has become one often associated with vehicular incidents. However, the authors agree with injury prevention experts that this term is misleading since it implies that injuries occur by chance and cannot be foreseen or prevented. The use of the term “accident” in this report has no such implication. The goal of this report is to implement public health strategies to reduce the frequency and severity of death and injuries related to all-terrain vehicles.

- Children under 16 make up approximately 14 percent of all ATV riders, but they disproportionately suffered 37 percent of all injuries and accounted for 38 percent of total fatalities between 1985 and 2001.
- Health care professionals, including the American Academy of Pediatrics (AAP) and the American Academy of Orthopaedic Surgeons (AAOS), have issued formal policies recommending that children under 16 not be allowed to drive ATVs under any circumstance.

The ATV industry's current approach to safety is ineffective. It relies on recommendations that children under 16 not ride adult-size machines, warning labels, and tiny print in magazine and television advertising, rather than actively working to protect children. Based on years of medical and other research, the industry's approach has failed to reduce fatalities and injuries generally — and to protect children in particular.

- More than 95 percent of children under age 16 injured in ATV-related accidents ride adult-size machines.
- More than half of all injured ATV riders either do not know if their ATV has warning labels or state that it does not.
- Only 4 percent of injured riders received any kind of formal training.
- Recent research on ATV injuries to children in Arkansas, Georgia, Ohio, Oklahoma, Pennsylvania, South Carolina, Utah, West Virginia and Wisconsin demonstrates that children under 16 continue to suffer a disproportionate share of injuries, do not wear helmets, and fail to receive formal training.

Industry's Self-Regulating Approach to Safety is Not Working

No one bears the burden of ATV-related injuries or deaths more than the victims and their families. The emotional pain and loss experienced by far too many families cannot be calculated. Unfortunately, the growing safety problem also inflicts costs on our society as a whole in the form of medical bills, disability payments and lost economic productivity.

- The American Academy of Orthopaedic Surgeons estimates that ATV-related injuries cost society \$6.5 billion in 2000.
- In West Virginia alone, ATV-related fatalities are estimated to cost taxpayers as much as \$34 million annually.

Americans Pay for Industry's Failure

Forty three states and the District of Columbia require children to be at least 16 years old in order to be licensed to drive a car. Every state requires automobile drivers to pass written and driving tests to be licensed. However, when it comes to ATVs, nearly half of all states do not set any minimum age and the vast majority do not require operators to be licensed or trained — even though ATVs are as, if not more, dangerous than automobiles.

- 24 states have no minimum age limit to drive an ATV, and 19 more allow children 12 years old or younger to drive them.
- 42 states do not require a license to drive an ATV.
- 35 states do not require any special training to drive an ATV.

What's Good for Cars, Should be Good for ATVs

America's Children Can be Protected

There is an ATV safety crisis in America today, and it poses a great threat to the health and well-being of our children. While the problem is serious, promising solutions are available. Many of these remedies have been developed by the pediatricians and other physicians who treat injured children every day. The authors of this report support the following action steps to protect children — and every operator of an ATV.

- 1) Every state should adopt the recommendation of the American Academy of Pediatrics and the American Academy of Orthopaedic Surgeons that no child under 16 be allowed to operate ATVs under any circumstance;
- 2) The off-road vehicle industry should join health care professionals, consumer advocates and others in urging every state to adopt model legislation developed by the AAP concerning age limits, licensure, training and other aspects of ATV safety; and
- 3) The CPSC should ban the use of adult-size ATVs by children under the age of 16 and require manufacturers to provide refunds for all three-wheel ATVs and four-wheel ATVs intended for adults purchased for use by children under 16.

ATV 101 – The Background

All-terrain vehicles, commonly known by the acronym “ATV,” have been on the market for approximately 30 years. ATVs are three- or four-wheel machines specifically designed for off-road travel. Three-wheel machines have not been manufactured since 1988, but many remain in use because they were not recalled by the U.S. Consumer Product Safety Commission (CPSC) and the ATV industry. ATVs are equipped with wide, knobby or paddle-like tires and special suspension systems capable of handling extremely rough terrain and cushioning jumps. Although the earliest three-wheel machines had little more power than a large riding lawnmower, ATVs today have larger and more powerful engines and many can travel 75 miles per hour.¹

These vehicles are generally marketed under broad categories, including sport, sport/utility and utility. ATVs in the sport category are designed especially for recreation and racing. Machines in the sport/utility and utility classes are also recreational vehicles, but they have cargo racks and can be fitted with attachments, including trailers. By the mid-1980s, a handful of major manufacturers were selling as many as 600,000 three- and four-wheel ATVs annually in the United States.² During this period, dramatic increases in the number of ATV-related accidents,* injuries and fatalities prompted the federal government, consumer advocates, doctors and others to investigate possible causes. Most quickly concluded that the three-wheel design had inherent flaws which made it prone to tipping or flipping over.



Suzuki Eiger (Sport/Utility Model)



Honda TRX (Sport Model)

Photos: U.S. Consumer Product Safety Commission

The threat to public safety was so serious that CPSC took a two-tiered approach to the problem: initiating rulemaking and filing a lawsuit against ATV manufacturers. The CPSC asked a federal court to declare ATVs to be “imminently dangerous consumer products.”³ The lawsuit sought to require that manufacturers: 1) end production of three-wheel ATVs, 2) repurchase all three-wheel ATVs from dealer stocks, 3) offer financial incentives to encourage owners of three-wheel ATVs to return them, and 4) provide safety education.

Government Takes Action — 1988 Consent Decree

* The term “accident” as used in this report is a term that has become one often associated with vehicular incidents. However, the authors agree with injury prevention experts that this term is misleading since it implies that injuries occur by chance and cannot be foreseen or prevented. The use of the term “accident” in this report has no such implication. The goal of this report is to implement public health strategies to reduce the frequency and severity of death and injuries related to all-terrain vehicles.

The industry mounted stiff opposition while at same time reducing production of three-wheel ATVs and increasing the number of four-wheel machines made. In the spring of 1988, a federal district court approved a negotiated consent decree between CPSC and industry that included the following major elements:

- 1) Manufacturers would cease production of any new three-wheel ATVs — an action they had largely taken by the time the decree was approved;
- 2) Manufacturers would recommend that ATVs with engine sizes greater than 70cc be sold only for children 12 and older and that “adult-size” ATVs, with engines greater than 90 cc, be sold only for individuals 16 and older;
- 3) ATVs would be labeled to warn purchasers that children should not ride adult-size ATVs;
- 4) Manufacturers would use their best efforts to ensure that dealers complied with the age recommendations and communicated them to prospective purchasers; and
- 5) Manufacturers would launch a public awareness campaign designed to alert consumers to the hazards associated with ATVs.⁴



Photo: Joe DeFelice

The final decree did not include some of the most important elements of the original CPSC lawsuit, including the requirement that manufacturers offer financial incentives to encourage owners of three-wheel ATVs to return them to dealers. This guaranteed that hundreds of thousands of dangerous “three-wheelers” would remain in use nationwide.

The decree covered a ten-year period. As it neared expiration, CPSC initiated a series of comprehensive usage, injury and risk studies designed to determine whether or not the decree should be extended. These studies were publicly released in April 1998. The major findings of the usage and injury studies include:

- 95 percent of injured riders under 16 years old rode adult-size machines;⁵
- Children under 16 years old accounted for nearly half of all injured ATV riders during the study period;⁶
- Children under 16 were injured more frequently on four-wheel ATVs than the total population of ATV riders. Overall, 73 percent of those injuries occurred while driving four-wheel ATVs. However, four-wheel ATVs were ridden in 87 percent of accidents involving children 12 to 15.⁷

Separate research using data from these CPSC studies concluded that drivers injured while riding ATVs required hospitalization four times more frequently (nearly 16 percent compared to 4 percent) than the average for users of all other consumer products.⁸

These findings and others demonstrate that the consent decree was not effective in many respects. While it successfully barred the production of new three-wheel ATVs, almost every injured child rode adult-size ATVs, children under 16 continued to suffer a disproportionate share of all ATV-related injuries, and injuries caused by ATVs were much more severe when compared with those caused by other consumer products.

When the consent decree expired in 1998, CPSC and major manufacturers entered into voluntary, company-specific agreements, known generally as ATV Action Plans, which embody many of the decree's main tenets (outlined on page 6). These agreements continue to recommend that children under 16 not ride adult-size ATVs, require warning labels, describe in great detail information that will be included in owner's manuals, and reiterate that the industry will make formal training available to purchasers of new ATVs.⁹

Industry's Self-Regulating Approach — Voluntary ATV Action Plans

The Action Plans can be best described as self-regulation by the ATV industry. Unlike the consent decree, they are not enforceable by CPSC. The companies can pull out at any time provided they give the Commission 60 days notice; however, Honda — the leader in ATV sales — has refused to agree to provide any notice whatsoever.¹⁰ Furthermore, the recommendation against the sale of adult-size ATVs for use by children under 16 is implemented at the discretion of the manufacturers. Manufacturers instruct their dealers to implement this policy and then sample some segment of dealers annually to gauge compliance.

The evidence available today demonstrates that the Action Plans are a failure particularly in terms of protecting children. The total number of ATV-related injuries and fatalities has increased significantly since 1998, children under 16 continue to be injured and killed in astounding numbers, and an entirely new segment of the industry has emerged which is not subject to these voluntary agreements.

The Action Plans only cover the specific companies (Honda, Polaris, Suzuki, Yamaha, Kawasaki, and Arctic Cat) that executed them with CPSC. They do not apply to other entities that manufacture, sell or import ATVs in the United States. Since the plans were adopted, there has been a dramatic increase in the number of companies selling ATVs in this country. Most of these firms or individuals import ATVs from Taiwan, Hong Kong, Korea, Italy and other countries around the world and sell them under a range of names, including Monsoon, Predator, Monster Joe, and Xtreme Machine. These companies are not covered by the Action Plans. Therefore, they are free to sell vehicles of any size to any individual, they do not have to offer training, and they are completely exempt from even the minimal oversight that the major ATV makers exercise over their dealer networks.

Voluntary Approach Fails to Address Emerging Market

The growth in this emerging market further demonstrates the fundamental flaw with a voluntary, company-specific approach. It would make no sense for the federal government to sign agreements with Chevrolet and Honda to equip their cars with seat belts while not doing the same with Chrysler and Volkswagen. However, this is just the type of "system" that exists today as more than 800,000 new ATVs enter the market each year.

“ all these machines have engines so big and powerful they’ll scare your riding buddies straight back to their mommies’ houses.”

4-Wheel ATV Action

ATVs Are Bigger, Faster and More Dangerous Than Ever

Explosive Growth in ATV Sales — The industry’s self-regulating approach to safety has failed to curb injuries and fatalities. At the same time, it aggressively builds bigger, faster and more dangerous ATVs and advertises them based on speed, power and thrill. In 1998, CPSC estimated that approximately 4 million three- and four-wheel ATVs were in use nationwide.¹¹ Based on the durability of ATVs and rapidly increasing sales, there could be as many as 7 million in use today.* Moreover, the industry is committed to increasing sales to 1 million annually by 2004.¹²

Speed and Power Dominate Ads and Reviews — Engine sizes, speed and power are being ratcheted up by the ATV industry every year. Many ATVs can travel as fast as 75 miles per hour. There is even a web site where riders boast about how fast their ATVs can go:

- “I’ve had my [Honda] 250R up to 84 mph, radared by a county sheriff.”
- “I got my [Kawasaki] Prairie 650 going 67 on the speedo.”
- “2002 [Yamaha] Grizzly 660, had it up to 62 MPH and ran out of room to go any faster.”
- “had my polaris sportsman 500 up to 57 mph but not topped out.”¹³

The CPSC found the number of ATVs with large engines increased three-fold between 1989 and 1997.¹⁴ One article in an enthusiast magazine explains that only a few years ago Suzuki’s largest ATV had a 300 cc engine – “hardly an earth-shaker.”¹⁵ However, it continues: “But that was before the displacement wars when Polaris and others were just beginning to explore displacement bigger than 400 cc finally culminating this year in the 650-700 cc twins.”

Company web sites and ATV enthusiast magazines stress speed and power above all else. Magazines commonly conduct “ATV Shootouts” comparing different manufacturers’ models in similar classes. Many prominently display “drag race times.” The following are common examples:

- One magazine raves about the Kawasaki Prairie 650, which weighs more than 600 pounds: “All of the machines in this group [of large ATVs] are capable of forceful acceleration, but stabbing the throttle on the Kawasaki gets you hurtling down the trail like you’re on a sport quad, not a big 4x4.”¹⁶
- The same publication describes some of the largest ATVs on the market as follows: “all these machines have engines so big and powerful they’ll scare your riding buddies straight back to their mommies’ houses.”
- Another magazine rates the 600 pound Yamaha Grizzly very highly because the “Grizzly’s power plant enables you to wheelie over trail obstacles most of the time and slide the rear end almost at will *like a pure sport machine.*”¹⁷ (emphasis added)

* Sales totaled 734,000 vehicles in 2000 and 825,000 in 2001 based on figures cited in the New York Times, March 24, 2002, p. A24 and Outside Magazine, April 2002. Estimate above calculated based on 4 million figure derived by CPSC plus 2000 and 2001 sales plus the average of 2000 and 2001 sales (780,000) as sales figures for 1998 and 1999. The authors developed this estimate because the industry refuses to provide its figures on the total population of ATVs currently in use in the United States.

- The following assessment sums up the industry’s approach to speed: “[T]he resurgence of the sport segment *following the end of government restrictions* has caused a few manufacturers to take off the gloves and go back to what we really enjoy: enthusiastic machines.”¹⁸ (emphasis added)

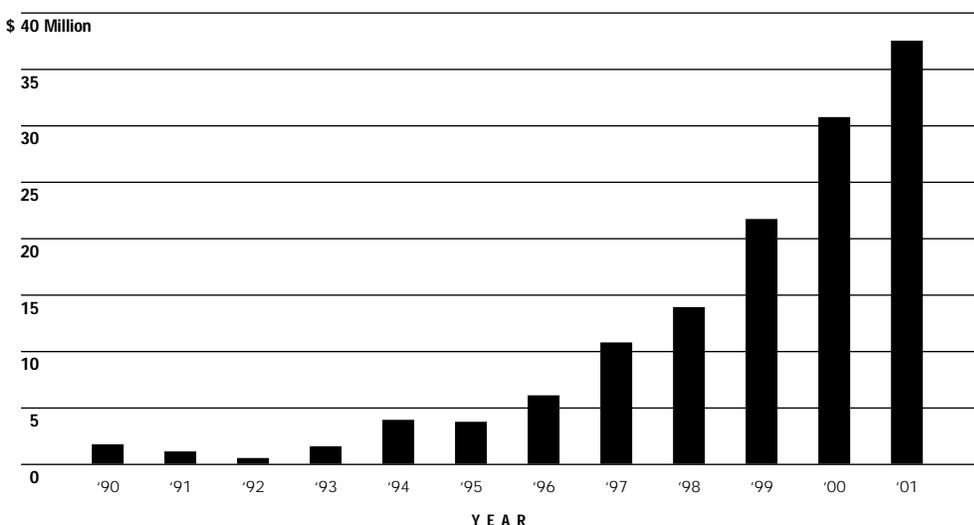
It is perhaps no surprise that the large increase in ATV injuries and fatalities between 1993 and 2001 matched a similarly dramatic trend in advertising expenditures by ATV manufacturers. For example, between 1996 and 2001, ATV-related advertising jumped nearly 6.5 times from \$5.8 million to \$37.3 million.¹⁹ (See Figure 1) These amounts represent an absolute minimum because they do not include advertising in enthusiast magazines or on the world wide web. Moreover, major manufacturers, including Honda and Suzuki, spend tens of millions of additional dollars annually advertising on behalf of local dealers. As a result, it is very likely that some of these resources are spent to promote ATV and motorcycle dealers and their products in general.

ATV Ad Spending is Spiraling Upward

Figure 1 paints a picture of an industry aggressively promoting a dangerous product. The trend is particularly significant because spending began to increase most dramatically as government oversight, in the form of the consent decree, neared expiration and was replaced with industry self-regulation. For example, expenditures jumped nearly 52 percent between 1998, the last year in which the consent decree was in effect, and 1999, the first year covered by the voluntary ATV Action Plans. Every company increased spending with Honda, Suzuki and Yamaha leading the way. Industry advertising spiked upward at the same time that CPSC found “statistically significant” increases in ATV-related injuries annually from 1997 to 2001.²⁰

When CPSC acted to protect consumers in the late 1980s, three-wheel ATVs were injuring and killing more than 100,000 Americans annually. Unfortunately, ending production of “three-wheelers” has not eliminated the problem. Their four-wheel successors are implicated in the vast majority of injuries and fatalities today.

FIGURE 1 ATV Ad Spending in Dollars



Source: AD \$ Summary. CMR and Magazine Publishers of America.

Industry Self-Regulation: A Prescription for Danger

Many Americans probably remember the horrendous safety record of “three wheelers” and how the industry was forced to discontinue their production in the late 1980s. Many probably also believed that the conversion to four-wheel ATVs would produce sustained safety improvements in the future.

Unfortunately, under the industry’s self-regulating approach, the safety problem today is as serious, particularly from the standpoint of negative impacts on children, as it was when CPSC initiated regulatory action nearly two decades ago.

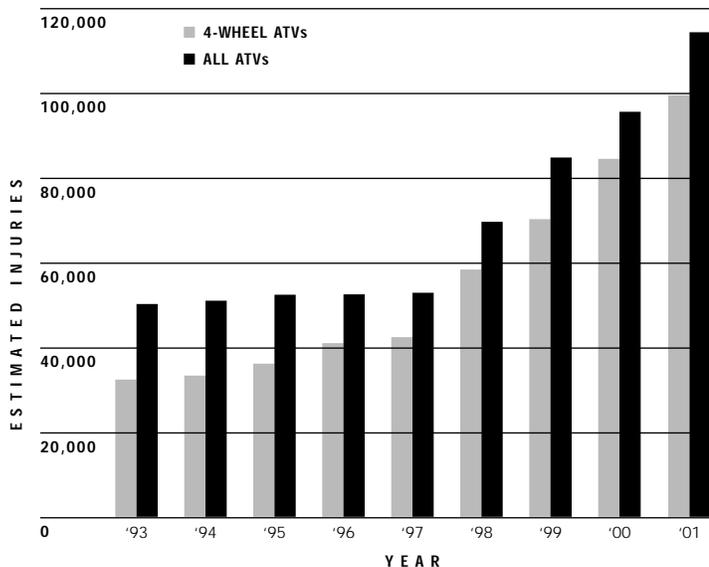
Injuries and Deaths Keep Rising

The upward trend in ATV injuries and deaths can be traced back to 1993. Between 1993 and 2001, CPSC estimates that the number of ATV-related injuries requiring emergency room treatment more than doubled to 111,700.²¹ During this same period, the number of injuries caused by four-wheel ATVs increased by 211 percent — to 99,600.²² (See Figure 2)

Moreover, the three-wheel ATVs still in use continued to cause a significant amount of injuries throughout the 1990s. By 2001, 13 years after production ceased, accidents involving these vehicles caused at least 12,000 injuries. (See Figure 2)

The estimated number of fatalities involving ATVs increased during the 1990s as well. From 1993 to 2000, ATV-related deaths increased 159 percent from 211 to at least 547.²³ (See Figure 3) In 1999, CPSC began to receive fatality information in a new format. The CPSC states that the fatality data it received prior to 1999 “underestimates” the total while the new format represents “a better approximation of the num-

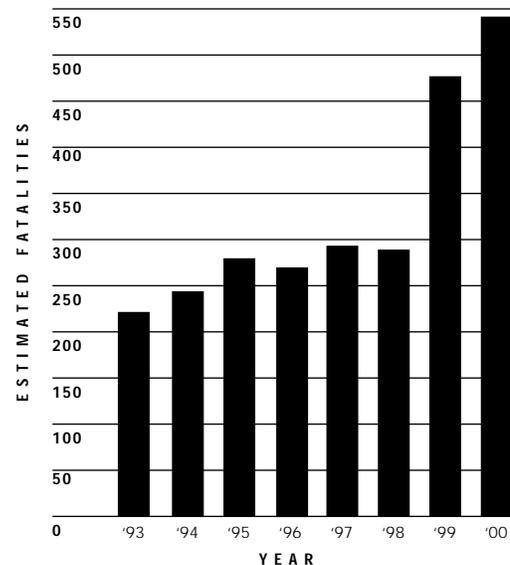
FIGURE 2 ATV Injuries



Source: U.S. Consumer Product Safety Commission. 2001 Annual Report All-Terrain Vehicle (ATV)-Related Deaths and Injuries.

Note: Reporting for 2001 is incomplete.

FIGURE 3 ATV Fatalities



Source: U.S. Consumer Product Safety Commission. 2001 Annual Report All-Terrain Vehicle (ATV)-Related Deaths and Injuries.

Note: Reporting for 1999 and 2000 is incomplete.

ber of deaths associated with ATVs.”²⁴ As additional evidence of an increase in ATV-related fatalities apart from more accurate data collection, CPSC points to the fact that the risk of injury continues to increase.²⁵

The industry attempts to explain away these significant increases by maintaining that more injuries will occur as the number of ATVs grows. However, CPSC has concluded that the increase in injuries is not solely explained by rising sales, and that there was a “statistically significant” increase in the number of injuries annually between 1997 and 2001.²⁶ According to CPSC, the risk of injury for riders of four-wheel ATVs increased from 164.7 injuries per 10,000 ATVs in 1993 to 261.8 injuries per 10,000 in 2001.²⁷ This injury rate is nearly as high as it was in 1988 (275.8 injuries per 10,000).²⁸

In addition, trends with automobiles demonstrate that increased usage or number of vehicles does not automatically translate into more injuries or fatalities. Injuries and fatalities associated with automobiles fell between 1990 and 2000 in terms of rates per registered vehicles, miles driven and licensed drivers even as the number of registered vehicles increased by more than 32.7 million and miles driven jumped by 606 billion.³¹ The U.S. Department of Transportation directly links the overall decrease in fatalities and injuries over several decades to government regulations that establish mandatory minimum safety standards and testing requirements for automobiles.³²

Size Matters

There is a good reason why children under 16 should not be allowed to drive an ATV: they are heavy, unwieldy, and require size, strength and coordination to operate safely.

- The average adult-size ATV weighs 550 pounds.*
- Steering is complex and counterintuitive. According to the 4-H ATV Rider Handbook, the recommended method of turning requires the rider to “lean [your] upper body to the inside of the turn while applying pressure to the outer footrest. The objective of this is to reduce weight on the inside wheel.”²⁹
- Driving an ATV requires the rider to make instantaneous decisions and adjustments. The CPSC describes one scenario: “If the ATV hits a bump, the driver has to determine almost instantaneously, the throttle setting, steering angle, and position of his/her body on the ATV.”³⁰ Children do not have the physical or mental abilities to make these complex, split-second decisions.

* This estimate is based on 2001 model year ATVs and excludes machines with more than four wheels and those made for children as young as six.

“Although manufacturers have touted the four-wheel vehicles as being safer than the three-wheel variety, the relative increase in safety is negligible, especially considering the criteria that led to the recall of three-wheel ATVs.”

Physicians at Arkansas Children's Hospital

Medical researchers directly challenge the assumption that four-wheel ATVs are fundamentally safer than the three-wheel machines phased out under the consent decree. One set of doctors conclude that “[D]ata are available stating both types lack appropriate lateral [side to side] stability... our data reveal that these vehicles [four-wheel ATVs] may be extraordinarily difficult [for children] to control even with smaller engines and age-specific engine recommendations.”³³

A 1998 study of neurological injuries associated with ATVs reached a similar conclusion. The authors state: “Although manufacturers have touted the four-wheel vehicles as being safer than the three-wheel variety, the relative increase in safety is negligible, especially considering the criteria that led to the recall of three-wheel ATVs. Injuries sustained in accidents involving four-wheel ATVs are just as severe as those incurred with three-wheel ATVs.”³⁴ This study further questioned whether safety had actually been improved under the consent decree based on the fact that four-wheel ATVs were involved in 74 percent of fatal ATV accidents. By 2000, four-wheel ATVs were involved in more than 90 percent of fatalities. The authors conclude: “To use a familiar phrase, ATVs are unsafe at any speed for children and adolescents.”³⁵

Four-Wheelers Are Just as Dangerous as Three-Wheelers



Photo: Joe DeFelice

Finally, CPSC concluded that 45 percent of accidents with a four-wheel ATV resulted when the machine tipped over.³⁶ In all cases where the ATV tipped over (including three- and four-wheel machines), 43 percent were lateral (side to side) and 57 percent were longitudinal (back to front).³⁷ The CPSC stated that “[T]he proportion of lateral to longitudinal tip over was not different between three- and four-wheel ATVs.”³⁸ This raises questions about the purported stability “benefits” associated with four-wheel ATVs. Moreover, the four-wheel design does not prevent these machines from tipping over backward or forward.

America's Children Pay the Price

“ Nearly 15 years after the industry agreed to improve safety, ATV-related accidents continue to take an alarming toll on children. ”

The efforts by CPSC in the mid- to late-1980s were driven in large part by the fact that children were being injured and killed by ATVs in alarming numbers. Nearly 15 years after the industry agreed to improve safety, ATV-related accidents continue to take an alarming toll on children.

- The CPSC estimates that 14 percent of all ATV riders are children under the age of 16. However, these children disproportionately suffered approximately 37 percent of all injuries and 38 percent of total fatalities between 1985 and 2001.³⁹
- Between 1982 and 2001, 1,714 children under the age of 16 – or 38 percent of the total number of fatalities – were killed in ATV-related accidents. Of those, 799 were children under age 12.⁴⁰
- For children under 16, the estimated number of ATV-related injuries increased 94 percent between 1993 and 2001 to 34,800.⁴¹
- Children under 16 suffer a higher number of injuries than any age group except those between 16 and 24. (See Figure 4)

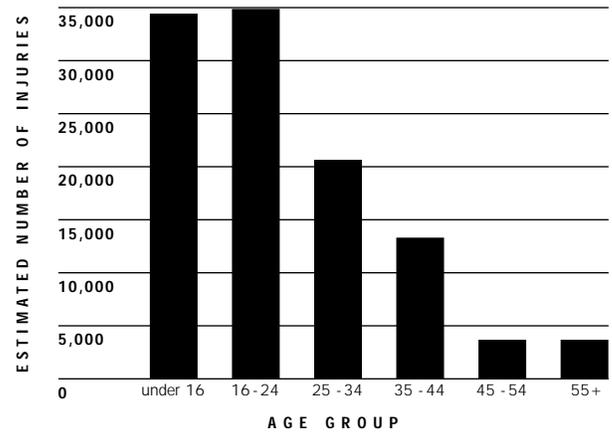
Unfortunately, these figures represent a minimum estimate of the number of injuries and fatalities because CPSC does not receive reports about every ATV-related incident. For example, the Commission states that its figures underestimate fatalities by 15 to 20 percent.⁴²

Furthermore, the risk of injury and death for children under 16 is significant and dramatically greater than for older riders. According to CPSC, “for riders under 16 years of age, there is a 1 in 3 chance of having an ATV-related injury during the lifespan of the ATV.”⁴³ CPSC research concludes that ATV operators under the age of 16 are 4.5 times more likely than older operators to receive injuries requiring emergency room treatment.⁴⁴



Photo: Joe DeFelice

FIGURE 4 ATV Injuries by Age Group Year 2001



Source: U.S. Consumer Product Safety Commission. 2001 Annual Report All-Terrain Vehicle (ATV)-Related Deaths and Injuries.

Pediatricians, orthopaedic surgeons and other health professionals across the country are expressing growing concern that the industry’s “solution” to the problem has failed to protect children and continues to leave them as vulnerable to injury and death as they were 15 years ago. The problem is so serious that major medical associations have issued formal policies concerning ATV use by children. Moreover, this is not just a “rural problem,” but one that doctors in suburban hospitals deal with every day.

Doctors Nationwide Sound Alarm about Impacts on Children

“[I]n light of statistics that show an inordinate number of injuries and deaths resulting from the use of ATVs, the American Academy of Orthopaedic Surgeons considers ATVs to be a significant public health risk.”

The American Academy of Pediatrics (AAP), which represents 57,000 primary care pediatricians, pediatric specialists and surgeons, issued its first formal policy concerning use of ATVs by children in 1987. In June 2000, the AAP updated and strengthened its recommendation that children younger than 16 not be allowed to operate ATVs regardless of size. A complete copy of the AAP Policy Statement is included in Appendix I. In making this recommendation, the Academy concludes: “[O]ff-road vehicles are particularly dangerous to children younger than 16 years who may have immature judgement and motor skills....An automobile driver’s license, and preferably some additional certification in ATV use, should be required to operate an ATV. The safe use of ATVs requires the same or greater skill, judgement and experience as needed to operate an automobile.”⁴⁵

The American Academy of Orthopaedic Surgeons (AAOS), the world’s largest medical association for musculoskeletal specialists, has also issued a formal Position Statement on this subject. A complete copy of the AAOS Position Statement is included in Appendix II. The Association states “[I]n light of statistics that show an inordinate number of injuries and deaths resulting from the use of ATVs, the American Academy of Orthopaedic Surgeons considers ATVs to be a significant public health risk.”⁴⁶ The Academy highlights the multitude of factors that make ATVs particularly unsafe for children: “Children under age 12 generally possess neither the

body size or strength, nor the motor skills or coordination necessary for the safe handling of an ATV. Children under age 16 generally have not developed the perceptual abilities or judgement required for the safe use of highly powerful vehicles.”⁴⁷

American People Pay for Industry's Failure

No one bears more of the burden of ATV-related injuries or deaths than the victims and their families. The emotional pain and loss experienced by far too many families cannot be calculated. Unfortunately, the growing safety problem is also inflicting significant economic costs on all Americans in the form of medical bills, disability payments and lost economic productivity.

For example, the American Academy of Orthopaedic Surgeons concluded that ATV-related injuries “cost the U.S. over \$6.5 billion in medical, legal and work loss expenses in 2000.”⁴⁸ Estimates of the cost borne by residents of individual states are equally troubling. Dr. Jim Helmkamp of the Center for Rural Emergency Medicine at West Virginia University has concluded that the “average annual comprehensive economic loss resulting from *fatal* ATV-related injuries is between \$10 million and \$34.2 million” in West Virginia alone.⁴⁹ (emphasis added) Cost to society can also be measured in noneconomic terms. For example, in West Virginia, where ATV accidents claimed 124 lives between 1990 and 1999, males lost an average of 41 years of productive life while females lost 55 years.⁵⁰

The evidence is clear and overwhelming — ATVs are killing and injuring Americans in greater numbers every year. Children too young to get a license to drive a car are most vulnerable and suffer more injuries than any other age group except one. The problem is as serious today as it was nearly 15 years ago when CPSC forced the industry to eliminate three-wheel ATVs. The evidence from the past decade and a half proves that the industry's self-regulating approach to safety has failed to protect consumers from injury and death.

Medical Research Nationwide Documents Growing Problem

Studies of ATV-related injuries and fatalities in Arkansas, Georgia, Ohio, Oklahoma, Pennsylvania, South Carolina, Utah, West Virginia, and Wisconsin reach similar general conclusions:

- 1) children younger than 16 continue to be killed and injured in large numbers;
- 2) injuries increased markedly in the late 1990s;
- 3) children face a significantly greater risk of injury than older riders;
- 4) few injured children receive formal ATV training; and
- 5) the vast majority of injured children do not wear helmets.

(See Appendix III for more detailed information about study findings from these states)



What’s Good for Cars, Should be Good for ATVs

“It is unfathomable that it is illegal for children to drive automobiles until they are 16 years of age, pass a driver’s training class, and obtain a valid driver’s license, yet we permit even younger children to ride ATVs without helmets, safety gear, formal training, parental supervision, or licenses...”

Physicians at Children’s Hospital Medical Center of Cincinnati

Doctors at Children’s Hospital Medical Center in Cincinnati reached this conclusion after studying ATV-related injuries to children for nearly a decade.⁵¹ ATVs are powerful motorized vehicles that can travel at highway speeds. Moreover, they expose their operators to greater risks because they do not have protective bodies, seat belts, air bags or other devices that provide considerable safeguards to drivers of most cars on the road today. Nevertheless, state laws governing ATV usage by minors, where they exist at all, fall far short of the recommendations of health professionals, let alone the long-standing and common sense standards for automobiles.

“ Utah allows children as young as 8 to drive ATVs while a 10 year old can drive them in New York, Maine and Pennsylvania.”

Minimum Age Standards

Forty three states and the District of Columbia require a minor to be at least 16 years old to obtain a license to drive an automobile.⁵² Moreover, because young drivers are more frequently involved in fatal accidents than any other age group, 34 states and the District of Columbia have implemented provisional or graduated licensing systems that commonly withhold full driving privileges until age 17 or 18.⁵³

It is a far different picture for ATVs. The vast majority of states either do not set any minimum age or allow children younger than 16 to drive ATVs. (See Table 1) In fact, Utah allows children as young as 8 to drive ATVs while a 10 year old can drive them in New York, Maine and Pennsylvania.⁵⁴

TABLE 1 – Minimum Age to Drive an ATV Under State Laws

No Minimum Age	Ages 8 – 12	Ages 13 – 15	16 and older
24 states	19 states ⁽¹⁾	5 states ⁽¹⁾	3 States ⁽¹⁾

(1) Most states have exceptions that allow children younger than the "minimum age" to drive ATVs. For example, some states have exceptions if the rider is "supervised" or has a "safety education certificate." In addition, other states only apply the minimum age requirement to ATV use on public lands.

NOTE: Includes the District of Columbia

Source: Specialty Vehicle Institute of America: State All-Terrain Vehicle Requirements, August 2001.

Driver's License

Every state in the nation requires every driver of an automobile to have a license. In contrast, 42 states do not require a license to drive an ATV.⁵⁵ (See Table 2) Moreover, even in states that require a license, the requirement is often so narrowly constructed that few operators would actually need one to ride virtually anywhere.

TABLE 2 – State ATV License and Safety Education/Testing Requirements

	Not Required	Required, Conditions Apply
License	42 states	9 states ⁽¹⁾
Safety Education/Testing	35 states	16 states ⁽²⁾

(1) License may only be required to cross a public highway, for use on public lands or under other limited circumstances.

(2) Requirements vary widely. In many instances, conditions apply which ultimately exempt a rider meeting them. Some states only require training for riding on public lands, for children younger than 16, or provide exceptions if a rider is "supervised" by another individual who has received training.

NOTE: Includes District of Columbia

Source: Specialty Vehicle Institute of America: State All-Terrain Vehicle Requirements, August 2001.

Training and Testing

The dichotomy between regulation of automobiles and ATVs continues in the area of training and testing. Every state requires any first-time automobile driver to pass a series of formal written and driving tests. These tests are designed to evaluate an individual's knowledge of "the rules of the road," safety issues and proficiency behind the wheel. Moreover, by offering reductions on premiums, many insurance companies encourage young people to take driver education courses through high schools or private companies. These courses commonly provide hours of classroom instruction and supervised on-the-road experience. In contrast, more than three out of five states do not require ATV operators to receive any kind of safety education.⁵⁶ (See Table 2) Furthermore, the education "requirements" in other states are so riddled with exceptions that few riders have to take a course or pass a test in order to ride virtually anywhere. Table 3 compares minimum age, testing and license requirements for ATVs and automobiles for all states and the District of Columbia.

Manuals Are Not a Substitute for Training and Testing

The need for state-sponsored training and testing becomes even more compelling when the issue is viewed in the context of the industry's approach to ATV safety. Much of it centers on plastering new machines with labels and hang tags and filling the owner's manual with a multitude of warnings and expecting dealers to communicate dangers to prospective purchasers. While warning labels and manuals play a role in informing consumers, they are not a substitute for a comprehensive approach to product safety.

The Washington Post printed a lengthy article on May 26, 2002 entitled "Why Won't We Read the Manuals." It made clear that most Americans do not read, let alone

TABLE 3 – State Requirements to Drive an ATV and Automobile

STATE	MINIMUM AGE		LICENSE REQUIRED		PASS TEST TO DRIVE	
	ATV	AUTOMOBILE	ATV	AUTOMOBILE	ATV	AUTOMOBILE ^F
Alabama	None	16 ^B	No	Yes	No	Yes
Alaska	14 ^A	16	No	Yes	No	Yes
Arizona	None	16	No	Yes	No	Yes
Arkansas	12 ^A	14 ^C	No	Yes	No	Yes
California	14 ^A	16 ^B	No	Yes	— ^E	Yes
Colorado	None	16 ^B	No	Yes	No	Yes
Connecticut	12 ^A	16	— ^D	Yes	— ^E	Yes
Delaware	12 ^A	16 ^B	No	Yes	No	Yes
D.C.	None	16 ^B	No	Yes	No	Yes
Florida	None	16 ^B	No	Yes	No	Yes
Georgia	None	16 ^B	No	Yes	No	Yes
Hawaii	None	16	No	Yes	No	Yes
Idaho	None	15 ^{B,C}	No	Yes	No	Yes
Illinois	None	16 ^B	No	Yes	No	Yes
Indiana	14	16 ^B	— ^D	Yes	No	Yes
Iowa	12 ^A	17 ^B	No	Yes	— ^E	Yes
Kansas	None	16	No	Yes	No	Yes
Kentucky	12 ^A	16	No	Yes	No	Yes
Louisiana	None	16 ^B	No	Yes	No	Yes
Maine	10	16	No	Yes	— ^E	Yes
Maryland	12 ^A	16 ^B	— ^D	Yes	No	Yes
Massachusetts	12	16 ^B	No	Yes	No	Yes
Michigan	12 ^A	16 ^B	No	Yes	— ^E	Yes
Minnesota	12 ^A	17	No	Yes	— ^E	Yes
Mississippi	None	15 ^C	No	Yes	No	Yes
Missouri	16 ^A	16 ^B	No	Yes	No	Yes
Montana	None	15 ^C	No	Yes	No	Yes
Nebraska	None	16 ^B	No	Yes	No	Yes
Nevada	None	16	No	Yes	No	Yes
New Hampshire	18 ^A	16 ^B	— ^D	Yes	— ^E	Yes
New Jersey	14 ^A	17 ^B	No	Yes	— ^E	Yes
New Mexico	None	15 ^B	No	Yes	No	Yes
New York	10 ^A	17 ^B	No	Yes	— ^E	Yes
North Carolina	None	16 ^B	No	Yes	No	Yes
North Dakota	12	16	— ^D	Yes	— ^E	Yes
Ohio	12	16 ^B	— ^D	Yes	No	Yes
Oklahoma	None	16	No	Yes	No	Yes
Oregon	12 ^A	16 ^B	— ^D	Yes	— ^E	Yes
Pennsylvania	10 ^A	17 ^B	No	Yes	— ^E	Yes
Rhode Island	12 ^A	16 ^B	— ^D	Yes	No	Yes
South Carolina	None	15 ^{B,C}	No	Yes	No	Yes
South Dakota	None	14 ^C	No	Yes	No	Yes
Tennessee	None	16 ^B	No	Yes	No	Yes
Texas	14 ^A	16 ^B	No	Yes	— ^E	Yes
Utah	8 ^A	16 ^B	— ^D	Yes	— ^E	Yes
Vermont	12 ^A	18 ^B	No	Yes	— ^E	Yes
Virginia	16	16 ^B	No	Yes	No	Yes
Washington	None	16 ^B	No	Yes	No	Yes
West Virginia	None	16 ^B	No	Yes	No	Yes
Wisconsin	12 ^A	16 ^B	No	Yes	— ^E	Yes
Wyoming	None	16	No	Yes	No	Yes

(A) Exceptions apply that frequently allow children younger than this minimum age to drive ATVs. Common loopholes include applying the age limit only to use on public lands or when the rider is unsupervised.

(B) State has a provisional or graduated licensing system for young automobile drivers that withholds full driving privileges. Most systems prohibit these drivers from carrying passengers younger than a certain age (except for family members) and/or from driving late at night. These restrictions are commonly lifted when the driver turns 17 or 18.

(C) While these states allow children younger than 16 to obtain a driver's license, numerous conditions apply. For example, a 15-year-old can only obtain a license in Idaho or Montana if he/she successfully completes a driver education course. Otherwise, the minimum license age is 17 in Idaho and 16 in Montana. Arkansas only issues unrestricted licenses to minors 16 and older.

(D) License may only be required to cross a public highway, for use on public lands or under other limited circumstances.

(E) State has some form of ATV safety education for young riders. Programs vary widely and exceptions apply that exempt many riders from having to participate. Moreover, most do not require participants to pass a formal test to be certified and some allow courses to be completed at home.

(F) According to the American Association of Motor Vehicle Administrators, every state requires first time drivers to pass written and driving tests in order to obtain a license to drive an automobile.

attempt to understand, manuals that accompany a wide array of consumer products.⁵⁷ Filling an owner's manual full of warnings and technical jargon is unlikely to be effective in terms of communicating important information to consumers, especially to children. In addition, CPSC found that more than half (53 percent) of all injured riders either did not know if their ATV had warning labels or stated that it did not.⁵⁸

No state in the nation has determined that a child of any age is adequately prepared to drive a car after hearing a series of warnings from the dealer and being given the owner's manual. However, this is just what is taking place with equally, if not more, dangerous ATVs. While the industry provides an opportunity for purchasers of new ATVs (and certain eligible members of their immediate family) to take a training course free of charge, only a small fraction of purchasers actually take the training each year. For example, in 2001 the industry sold 825,000 ATVs but only about 5 percent of purchasers participated in training.⁵⁹ Furthermore, CPSC found that only 4 percent of injured ATV riders had "received formal training of any kind, either from an organized program or a dealership."⁶⁰ Once again, it is clear that the industry's self-regulating approach has failed to adequately protect consumers.

Every state in the United States has adopted a comprehensive and virtually uniform approach to protecting children younger than 16 from the many risks associated with driving a car without proper training and without a certain level of physical and mental maturity. While this system is not fool proof, it is better than the alternative of simply letting the auto industry regulate driver licensing and training. However, that is precisely how ATVs are treated today. No minimum age limits exist in nearly half of all states, four out of five states do not require a license, and training requirements for riders are rare.

Simply put, ATV use by children is not regulated in the common sense manner applied to automobiles. In this environment, the industry is allowed to push bigger, faster and more dangerous machines while hiding behind a façade of self-regulation that has failed to protect consumers from injury and death.

Action Steps to Protect Children

Based on the overwhelming evidence available today, the current approach to ATV safety is ineffective in general and, more specifically, in terms of protecting children younger than 16. The annual number of injuries and fatalities now rival figures from the mid- to late-1980s. Children under 16 continue to suffer approximately 37 percent of all injuries and account for 38 percent of total fatalities. Moreover, the steady increases in injuries and fatalities are not explained by rising sales indicating that the causes of this problem extend well beyond the industry's position that more injuries will naturally occur with more machines in use.

This evidence begs the following question: how many more injuries and deaths will ATVs cause before the industry's self-regulating approach is abandoned? By every measure other than ending production of new three-wheel ATVs, this voluntary approach has failed to produce sustained improvement especially in terms of protecting the health and safety of our youngest citizens. It is time to implement a new approach supported by health care professionals, consumer advocates and others that would promote national uniformity and safety standards as well as focus public attention on the serious safety risks associated with every model of ATV.

The authors of this report support the following action steps to protect children — and every operator of an ATV.

Recommendations

- 1) Every state should adopt the recommendation of the American Academy of Pediatrics (AAP) and the American Academy of Orthopaedic Surgeons (AAOS) that no child under 16 be allowed to operate ATVs under any circumstances;**
- 2) Industry should join health care professionals, consumer advocates and others in pressing every state to adopt model legislation (which will need to be revised to reflect characteristics of new ATVs, usage patterns and the worsening safety problem) developed by the AAP concerning licensure, training and other aspects of ATV safety. A copy of the model bill can be found in Appendix IV; and**
- 3) The CPSC should ban the use of adult-size ATVs by children under the age of 16 and require manufacturers to provide refunds for all three-wheel ATVs and four-wheel ATVs intended for adults purchased for use by children under 16.**

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APPENDICES



Appendix I

American Academy of Pediatrics
DEDICATED TO THE HEALTH OF ALL CHILDREN™



Policy Statement
<http://www.aap.org/policy/re9855.html>



Appendix II



AAOS

American Academy of Orthopaedic Surgeons®
American Association of Orthopaedic Surgeons®

Policy Statement
<http://www.aaos.org/wordhtml/papers/position/atvs.htm>



Appendix III

Summary of Medical Research on ATV Safety
pages 22-23



Appendix IV

American Academy of Pediatrics
DEDICATED TO THE HEALTH OF ALL CHILDREN™



Model Bill- All-Terrain Vehicle Regulation Act
<http://www.aap.org/policy/m951.html>

Appendix III

Summary of Medical Research on ATV Safety

The following summary of medical research from across the nation proves that the current approach is failing by every reasonable measure to protect children from injury and death caused by ATV-related accidents.

ARKANSAS:

Researchers in Arkansas examined all patients (a total of 33) admitted for neurosurgery services following an ATV accident at the three hospitals that comprise the University of Arkansas for Medical Sciences between January 1993 and April 1996. Their analysis determined that:

- 64% of patients were younger than 16 while 18% were between 8 and 10 years old;
- Only 1 of the 33 patients wore a helmet;
- In 54% of all cases, the victim was thrown or flipped from the ATV; and
- The authors conclude: "To use a familiar phrase, ATVs are unsafe at any speed for children and adolescents."¹

GEORGIA/SOUTH CAROLINA:

Research by doctors at Memorial Health University Medical Center, which serves portions of Georgia and South Carolina, reviewed all ATV-related cases treated at the institution during the ten years covered by the consent decree (1988 – 1998). They found that:

- 50% of the injured persons were younger than 16;
- Only 8% of children wore helmets; and
- The facility experienced a significant increase in injuries over the final four years of the study period.²

OHIO:

Doctors at Children's Hospital Medical Center in Cincinnati compared injuries suffered by 109 children in ATV-related accidents with those of 994 children riding bicycles between January 1991 and June 2000. They found that:

- The average age of injured ATV riders was 11 years old;
- ATV-related trauma "was associated with multiple injuries, more operative interventions and longer hospital stays" when compared with bicycle injuries;
- Only 14% of injured ATV riders (or their parents answering on their behalf) reported receiving any formal training prior to riding; and
- Nearly 20% of the children injured in ATV accidents were passengers.³

OKLAHOMA:

The Oklahoma State Department of Health Injury Prevention Service studied all ATV-related accidents which caused traumatic brain injury (TBI) resulting in hospitalization or death statewide between 1992 and 1999. The Service identified 185 people who suffered a TBI during this period. It found:

- Hospitalizations increased 81% between 1998 and 1999, the year after the consent decree expired;
- Children 6 to 15 years old suffered 42% of all injuries and 39% of deaths;
- The injury rate for children 6 to 15 years old was nearly 3 times greater than the rate for all victims; and
- 31% of victims rode three-wheel ATVs.⁴

PENNSYLVANIA:

Children's Hospital of Pittsburgh serves western Pennsylvania, northern West Virginia and eastern Ohio. Between January 1991 and December 1995, 51 children were admitted to the hospital's trauma unit for ATV-related injuries. Doctors found several common threads, including:

- The average victim was 11.5 years old;
- 63% of injuries resulted when the ATV rolled over or the victim fell off; and
- Nearly 50% of victims suffered multiple injuries.⁵

UTAH:

Doctors in Utah studied all ATV-related injuries requiring emergency room treatment or hospitalization statewide between 1992 and 1996. They were particularly interested to understand whether or not a Utah law that allows children as young as eight to ride ATVs undermined the effectiveness of industry's agreement not to recommend the sale of adult-size ATVs for children under 16. They concluded that:

- 32% of victims were younger than 16;
- 25% of injured drivers were children younger than 8 years old;
- 50% of children killed in ATV accidents were younger than 8; and
- "By adhering to existing state regulations and recommendations governing ATVs, 61 children would not have been injured as passengers on ATVs, 15 children would not have been injured while driving ATVs and 4 children would not have died."⁶

WEST VIRGINIA:

Between January 1991 and December 1995, doctors at the five major trauma centers serving West Virginia treated 218 children 16 years old and younger for injuries sustained in ATV-related accidents. Their research concluded:

- The average victim was 12.4 years old;
- 20% of injured children required treatment in intensive care units for an average of 4.5 days;
- 88.5% of victims were not wearing helmets; and
- Nearly 40% of injured children required surgery.⁷

Additional research in West Virginia analyzed all ATV-related fatalities statewide between 1990 and 1998. It found:

- One-quarter (25 of 101) of all victims were children 16 years old and younger;
- The average age of these children was less than 11 (10.8) years old;
- Only one victim wore a helmet;
- The adolescent fatality rate in West Virginia was 5 times greater than the national average; and
- All fatalities involved four-wheel ATVs.⁸

WISCONSIN:

Research in Wisconsin found that ATV-related injuries require hospitalization six times more often and result in death 12 times more frequently when compared with bicycle injuries per 1,000 vehicles.⁹

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