

All-Terrain Vehicles (ATVs) and Children's Safety

All-terrain vehicle (ATV) use is growing rapidly across Ontario and throughout Canada. These versatile vehicles are used for work purposes and, increasingly, as recreational vehicles for people of all ages. Concerns about the safety of ATVs, and unease about the lack of legislation regulating their use, has grown in tandem with their popularity. The safety concerns are particularly poignant for physicians, who witness first-hand the injuries and fatalities that result from ATV accidents each year.

Of particular concern to physicians are ATV accidents involving younger patients. It is this adverse and disproportionate health impact being felt by children that is the focus of this position paper.

As part of the Ontario Medical Association's dedication to public health and safety, as well as our commitment to speaking out when the health of patients is at risk, we believe that it is our duty to deliver a medical perspective on ATV use by children.

Based on the available literature, this paper will present evidence demonstrating the significant, but avoidable, risks of injury and death associated with ATV use by children. The OMA will then offer a series of recommendations that we believe are necessary to prevent the avoidable injury risks that ATVs pose to the children of this province.

Findings: Evidence of Harm

There are inherent injury risks associated with the operation of ATVs, just as there are risks associated with operating any type of motorized vehicle. Children, however, are particularly vulnerable to risks associated with ATV use.

For their safe operation, ATVs necessitate considerable muscle strength, as well as proficient cognitive, motor and co-ordination skills, and experience in making split-second judgments.^{1,2} Additionally, with a high centre of gravity, narrow track width and short wheelbase, ATVs are somewhat unstable, and thus for balance require operators to shift their weight quickly from front to back and side to side.^{3,4} Generally, these are skills which are critically lacking or underdeveloped in children, who are neither physically nor cognitively suited to operate ATVs.

Academic research into the impact

that ATV use has on children began in the 1980s, and consequently, a wealth of studies and reports have been published on the subject. The studies have predominantly tracked and analyzed the injury and death rates of children in hospitals and emergency departments (ED) in North America. Attention to the topic, both by researchers and the broader public, persists, as does the popularity of the vehicles, and the injuries and deaths from collisions and accidents.

Statistics from Canadian studies demonstrate the clear threat ATVs pose to the health and safety of children. The Canadian Institute for Health Information reports that ATV-related injuries requiring hospitalization have increased 50% in Canada between 1996 and 2001, and that a substantial 36% of these hospitalizations occurred among children and youths.⁵

This threat to Canadian children is echoed by a 2006 study in the *Journal of Paediatric Surgery*, which found that nearly half of all ATV-related injuries, and over 35% of all ATV-related deaths, are suffered by children 16 years of age and younger.⁶

Finally, the Ontario Injury Prevention Centre reports that in the 2005-2006 fiscal year, there were a total of 5,584 ED visits in Ontario associated with ATV use, and that young males aged 15 to 19 had the highest rate of visits of any age group included in that figure.⁷

Similar evidence of harm can be found in studies across the United States. A study published in 2008 in the *American Journal of Preventive Medicine* reports that there were an estimated 58,254 ATV-related hospitalizations in the United States between the years 2000 and 2004, 30% of which involved youth under the age of 18.⁸

The 2001 Annual Report from the U.S. Consumer Product Safety Commission (CPSC) on ATV-related deaths and injuries estimates that 14% of all ATV riders are children under the age of 16; however, these children have suffered a disproportionate 37% of all injuries, and 38% of total fatalities between 1985 and 2001.⁹ This 2001 CPSC report notes that ATV-related injuries increased 94% for children under 16 between 1993 and 2001. While slightly more modest, in its 2007 report, the CPSC pegged the proportion of children under 16 suffering ATV-related injuries between 1985 and 2007 at 35%, and ATV-related fatalities at 28% for the same period.¹⁰

A 2006 article appearing in the *Injury Prevention Journal* argues that the risk of significant injury to a child is six-fold higher when riding an ATV compared to riding a conventional motor vehicle,¹¹ while a retrospective review study in the *Journal of Trauma* from 2005 concluded that adolescent ATV riders have more severe injuries and more head injuries than do riders in any other age groups.¹²

Many ATV injuries are being suffered by children at very young ages. According to the CPSC, in the United States in 2007, 12% of ATV-related fatalities were suffered by children younger than 12 years of age.¹³ Despite a prohibition on ATV use by children eight years and under, state-wide hospital and ED statistics in Utah show that 25% of injured children in this age group were found to actually be driving the ATVs at the time of their injury.¹⁴

Common injuries suffered by children include, but are not limited to, extremity fractures, head injury, facial trauma, contusions, abrasions and lacerations. Many of these injuries are suffered not only by drivers, but by passengers, despite industry warnings that carrying passengers destabilizes ATVs and increases risk of injury and death.¹⁵

A literature review compiled by the injury prevention committee of the Canadian Paediatric Society reported that drivers were carrying passengers in 15% to 30% of cases where children were hospitalized for ATV trauma.¹⁶ Ontario's physicians are concerned that unless action is taken, children with serious ATV-related injuries will continue to show up in hospital EDs and physician offices across the province.

Industry Activity

The evidence of harm strongly suggests that more must be done to prevent avoidable ATV-related injuries and deaths to children in this province.

The ATV industry has faced public concern over the safety of its products before. In response to these concerns, the CPSC and major ATV manufacturers signed a consent decree in 1988 aimed at improving ATV safety in the United States.¹⁷ The agreement included a pledge to stop manufacturing the more dangerous three-wheeled ATVs. It prohibited manufacturers from recommending the sale of ATVs with engines larger than 90 cubic centimetres (cc) to children who are younger than 16, or recom-

mending the sale of ATVs with engines bigger than 70cc to children under the age of 12 (current engine displacement of ATVs can range anywhere from 50cc to 700cc). Finally, manufacturers also agreed that ATVs would be labelled to warn purchasers that children should not ride adult-sized ATVs.

This U.S. consent decree may have influenced the Canadian market, however, it was only voluntary and it expired in 1998.

ATV manufacturers and associations continue to recommend that children not drive inappropriately sized ATVs, and publicly state that no ATV is appropriate for drivers less than six years old.

The Canadian ATV industry has endorsed voluntary standards which include product labels recommending that children under 12 years not be permitted to ride ATVs greater than 70cc, and those 16 years and younger should not ride ATVs with engines bigger than 90cc.¹⁸

Messaging about child-appropriate size and speed of ATVs is now common in the promotional material produced by manufacturers and retailers. The most common "child-sized" ATVs are 90cc, 70cc, and 50cc.

As we will discuss, there is no law in Ontario that limits the size of an ATV that children can ride. However, even if there were such restrictions, and Ontarians complied, there is no evidence which suggests that children would be protected by riding these less-powerful vehicles.

Child-sized ATVs are capable of very fast speeds. Although the speed capabilities of these vehicles depend on many factors, including the weight of the child driving, advertisements for 50cc ATVs put their top speed in the range of 45 km/hr,¹⁹ whereas 90cc vehicles have estimated top speeds around 70 km/hr.²⁰

While the ATV industry focuses on right-sizing vehicles for children, none suggest that there is anything inherently dangerous about marketing products to very young children that allow them to drive at speeds much faster than they could

ever hope to go, under their own power, on say a bicycle. The Canadian and American websites of manufacturers and retailers market a wide variety of ATVs for riders age six years and older. One Canadian retail site even recommended a 70cc ATV for five-year-olds to nine-year-olds;²¹ especially disconcerting when the top speed on a 70cc ATV is approximately 50 km/hr.²²

Increasing Speed and Power

Not only do ATVs continue to be popular purchases each year, but evidence shows that the vehicles themselves are being made both bigger and faster.

According to the CPSC, between 1997 and 2001, the number of ATVs with engines with 300cc to 399cc displacement increased by nearly 78% to 1.7 million in the United States, while those with engines bigger than 400cc jumped by more than 200% to 1.1 million.²³

Injuries caused by ATVs with engines larger than 400cc skyrocketed in the United States by 567% from 3,662 to 24,437 during this same 1997-2001 period. It is interesting to note that injuries also increased 33.8% in this period for ATVs with engine outputs less than 90cc — those designed for children.

Legislation in Ontario

In Ontario, there is a patchwork of regulations and guidelines that pertain to where the ATV is being operated.

Children under the age of 12 are restricted from using an ATV, unless they are operating it on the vehicle owner's land, or are closely supervised by an individual of at least 18 years of age.²⁴ As part of the Highway Traffic Act, Ontario does limit the use of ATVs on public roads to those holding a valid drivers licence.²⁵ Therefore, anyone under the age of 16 years is effectively banned from driving an ATV along or across provincial highways.

Additionally, municipalities are permitted to enact further regula-

tions on roads under their jurisdiction. Ontario does not require mandatory safety courses to operate an ATV, although these are available, and helmet use is only required by law when operating an ATV on highways or on public land. In effect, a five-year-old can ride an ATV anywhere in the province except on roads, as long as an adult is supervising. Once the young ATV rider turns 12, he or she no longer requires adult supervision.

Legislative Differences in Other Provinces

Some provinces in Canada share Ontario's approach to the regulation of ATV use, but for others, there are some noteworthy differences.

Several provinces have placed more stringent age restrictions on ATV use for children. In New Brunswick, Newfoundland and Labrador, Nova Scotia, and Prince Edward Island, ATV riders must be at least 14 years old to operate ATVs. In all of these jurisdictions, close adult supervision is required until the ATV driver is 16 years old.

ATV size is also regulated in some provinces. For example, in Quebec, the minimum age is 16 years to operate a full-size ATV. Children under 16 are only permitted to operate "youth-sized" ATVs as approved by government legislation. Similar size-sensitive legislation exists in Newfoundland and Labrador, where 14-year-olds and 15-year-olds are only permitted to operate ATVs that are 90cc or smaller, provided they are under adult supervision.

Finally, safety training is also a mandatory requirement in some provinces. Quebec, New Brunswick, Nova Scotia, and Prince Edward Island mandate completion of safety training courses for children to operate ATVs.²⁶

Conclusions and Recommendations

As is clear from this report, the danger to children and youth from ATV use is real, and the health impact for children from driving or riding an ATV remains substantial.

Several health groups in Canada

and the United States have previously identified concerns about young people using ATVs, and have put forth injury-prevention recommendations. Key among these groups is the Canadian Paediatric Society, Canadian Association of Pediatric Surgeons, and American Academy of Pediatrics.

The Ontario Medical Association, with support from the OMA Sections on General and Family Practice, Pediatrics, and Rural Practice, believes it important to add a provincial voice to this issue in Ontario.

The OMA recognizes that there is difficulty legislating the use of recreational vehicles on private land, and in restricting the sale of ATVs that are designed to be used by children. Ontario's current ATV laws, however, are vague and thus do not provide helpful guidance to parents considering an ATV for their child. The evidence of the risk that ATVs pose to children is clear, but is not communicated by government or the industry.

Although, intuitively, less power and slower speeds suggest less danger, the OMA was unable to find evidence of reduced injury that resulted from child-sizing ATVs for children. Thus, the safest course is to avoid ATV use altogether for our youngest patients.

The OMA recommends:

- That children under the age of 14, not be permitted to operate all-terrain vehicles (ATVs) of any size within the province of Ontario;
- That youth aged 14 to 16 be permitted to ride only power-restricted vehicles that cannot exceed 30 km/hour;
- That any person between the ages of 14 and 18 wanting to operate an ATV, be required to first obtain an all-terrain vehicle learner's permit, for which they must have permission and ongoing supervision of their parent or guardian;
- That the Ontario Ministry of Transportation investigate and publicly report on ways to enforce these ATV driver age restrictions.

Since provincial laws regarding ATVs may only apply on public land, and a significant amount of

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ATV use occurs on privately held land,

- *The OMA recommends the province ensure that any ATV legislation protecting children include provisions to ensure that this applies to public and private property.*

ATV retailer and manufacturer marketing initiatives often reach much larger audiences than government's educational communication initiatives. As it is clear that current provincial recommendations for ATV age restrictions do not prevent the ATV industry from marketing their products to children,

- *The OMA recommends that the advertising of ATVs for use by children be prohibited, and as a gesture of support, that ATV manufacturers respond to medical community concerns and voluntarily discontinue their marketing to children without waiting for legislative restrictions on such activity to be passed into law.*

Although the focus of this paper is the safety of children and youth, the OMA believes that it is important to take this opportunity to stress the importance of helmet use for all who use ATVs.

- *The OMA recommends that government-approved helmets be compulsory for ATV users.*

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