



ATVs and Youth: Matching Children and Vehicles

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From backyards to farm fields to forest lands, youth are operating all-terrain vehicles (ATVs). They go fast and can travel in forests and over fields. ATV use by youth is mainly for recreation but older youth use ATVs for chores such as a pulling a cart to haul firewood, feeding calves or scraping snow. Riding ATVs can be fun, provide a means of physical fitness, give parents and youth an opportunity for quality family time, and provide a means of accomplishing work.

ATVs are also getting bigger and faster, ranging up to 700cc and more in engine size, weighing 600 or more pounds, with speeds exceeding 70 miles per hour. Machines of this size and speed are not suitable for most youth. This fact sheet discusses selection and use of ATVs for youth, along with recommendations for adults to help youth have positive experiences with ATVs. Lifelong enjoyment and use of these popular recreational and work vehicles is possible through training in safe ATV operation.

ATVs Can Be Dangerous

A recent National Safe Kids Campaign report stated that over 30,000 children age 14 and under were treated in hospital emergency rooms for ATV-related injuries (fractured bones, head and facial injuries) and 44 children in this age group died as a result of ATV-related injuries (head and neck injury). Children ages 10-14 accounted for more than 75% of the deaths. As a comparison, ATV related injuries are 12 times more likely to result in death than bicycle-related injuries. Nearly 90 percent of ATV-related injuries suffered by children under age 16 were caused by adult-sized ATVs (ATVs that are 90cc or larger). Additionally, reports show that males account for 60 percent of the ATV-related death among children ages 14 and under. Youth account for more than 33 percent of the ATV fatalities, but made up only 14 percent of the riders.

A recent National Institute of Occupational Health (NIOSH) Childhood Agricultural Injury Survey shows that ATVs are often used on farms and that youth operators are not likely to have formal training. Injury and fatality numbers are expected to grow as ATV sales continue to climb. Clearly the ATV can be a dangerous vehicle.

Youth Readiness to Safely Operate an ATV

Before considering the purchase of an ATV for your child, consideration should be given to the child's physical and emotional development. Physical development includes size and strength as well as visual perception and coordination. Emotional development (mental maturity) includes focus, discipline, reasoning and decision-making ability. A parent often overestimates their own child's skills and abilities and may want a more objective evaluation of skills and abilities from another adult that is familiar with the child.



Figure 1. NAGCAT Guidelines offer visual and written recommendations to adults to help youth have positive agricultural work experiences.

Physical Development. Have your child stand on the foot rests of the ATV and grasp the handlebars. There should be at least 3 inches of clearance between the ATV seat and the youngster’s seat of the pants. Have your child move the handlebars all the way to the right and to the left. Can they do this? Can your child operate the throttle and squeeze the brake lever with one hand as these controls are intended to be used? Can your child shift their weight from side to side and from front to back and maintain their balance? One good measure of readiness to successfully ride an ATV is the ability to ride a bicycle. Can your child easily control a bicycle?

Emotional Development. The child’s emotional maturity can be viewed from a standpoint of discipline. Does your child have self-control as shown by conforming to expected rules of behavior and by awareness of the consequences of their actions? Riding an ATV safely demands following the rules of riding. Understanding that uncontrolled behavior can result in injury or death is a sign of emotional maturity. Parents should recognize that all children are different in maturity levels at a particular age. Just because a child is big for their age and can reach the controls of the ATV does not mean that they will use mature judgment in dealing with the many circumstances that may occur while riding the ATV.

The North American Guidelines for Children’s Agricultural Tasks (NAGCAT) offers guidelines for adults to determine the readiness of youth to operate an ATV. Use the Internet to access www.nagcat.org. Click on Guidelines and scroll to the ATV section.

Selecting an ATV for Youth

When selecting an ATV for your child, there are numerous factors and features to consider in addition to physical and emotional development. These include: type of ATV, power, speed, drive mechanism, adult supervisory controls, carrier racks, suspension systems, brake and foot controls, and heat and burn prevention.

Three-wheeler vs. Four-wheeler. Purchase four-wheel ATVs. They are more stable and less prone to side overturns. The overwhelming asset of the four-wheeler is its stability. The sale of new three-wheeled ATVs has been banned for many years, but many used three-wheelers are sold by after-market ATV dealers or owners. Don’t purchase a used three-wheeler.

Power and Speed. The Consumer Product Safety Commission (CPSC) has issued an ATV Safety Alert regarding engine size suggestions for young riders. The CPSC considers that an adult size ATV has an engine of 90cc and greater and suggest youth be at least 16 years old to operate an adult size ATV. ATV manufacturers offer guidelines on engine size for young rider’s safe ATV use. See Figure 2 and page 4.

| <u>Age of Operator</u> | <u>ATV Engine Size</u> |
|------------------------|--------------------------|
| Under 6 years of age | No operation recommended |
| Age 6 to 11 | Under 70cc. |
| Age 12-15 | 70-90cc. |
| 16 years and older | Over 90cc. |

Figure 2. Age and size recommendation for ATV operation supported by manufacturers.

Drive Lines. ATVs with single speed, automatic transmissions are ideal for beginning riders. Power is easily controlled by the novice operator and an automatic clutch reduces chances of “popping-the-clutch,” which can result in a rear overturn. The automatic transmission offers reasonable speed for the learner. More sophisticated transmissions and drivelines are available for the larger adult-sized machines.

Supervisory Controls. Controls that help adults supervise beginning ATV riders are available. Devices include: throttle limiters, exhaust restrictors and remote shut-off switches. Throttle limiters act as a governor to maintain slower speeds. Exhaust restrictors reduce the engine’s power. Remote shut-off switches may be an engine stop leash or tether which the adult can pull to operate an engine shut-off



Figure 3. Smaller ATVs are made for youth while larger models are considered adult size ATVs. Some groups object to youth less than 16 operating any ATV. See page 4.

switch. The remote could also be a more expensive electronic shut-off switch which can be activated from greater distance from the rider.

Carrier Racks. Carrier racks should not be installed on youth size ATVs because the weight of objects or materials carried on the rack can shift the ATVs center of gravity and reduce its stability. The material on the rack may also block the youth's vision.

Design Features for All ATVs

In addition to considering design features specific to young riders, there are design characteristics applicable to all ATVs that contribute to safer operation. These include:

Suspension Systems. ATV suspension systems vary with the machine. Less expensive models may use only balloon tires for suspension. These ATVs can bounce and pitch sideways at high speeds. Some models have suspension systems only on the front wheels while others have them on all four wheels. Some use only coil springs. Coil springs with shock absorbers provide the best traction, maximum control, and the smoothest ride.

Brakes and Foot Rests. The ATV may have rear brakes only or have both front and rear brakes with independent controls. Children must be trained to operate the brake system properly to reduce the hazard of lost control due to sharp braking. The rear fenders and foot peg or rest should be designed to make it difficult or impossible for the foot to slip off and be caught under the rear wheel.

Hot Engine Parts. The muffler, exhaust, and other hot engine components should be located, or guarded, to prevent burns. The design should also prevent the buildup of dry trash near hot exhaust parts to reduce the risk of fire.

Preparing To Operate the ATV

Safely operating an ATV includes proper dress, protective equipment and following established rules for ATV safety.

Dress Safely. Full face shield helmets offer the most protection. The helmet should fit snugly and securely. An American National Standards Institute (ANSI) Z90.1 label indicates that the helmet has met national

test standards. In a wooded area, eye protection showing the ANSI Z78.1 label is required if the helmet does not have a face shield. Over-the-ankle shoes with sturdy, non-slip heels and soles should be worn along with gloves and long sleeve shirt and pants.

Operate Safely. Operators of all ages should observe these ATV operation rules:

1. Use lights, reflectors and flags to increase the smaller ATV's visibility.
2. Don't show off, speed or try to perform stunts. Speed always increases risk of injury or death.
3. No passengers. ATVs have one seat for one operator.
4. Avoid public roads and paved surfaces. ATV tires are not designed for road travel.
5. Keep your ATV off hard surfaced roads as these increase the risk of loss of control and roll-over.

Legal Restrictions for Youth

At the present time there are only four legal regulations involving the operation of ATVs by youth under the age of 16. The Pennsylvania Vehicle Code, Chapter 77 states:

(Section 7725.a) No person under the age of 16 shall drive an ATV across any highway unless he (or she) has a valid safety certificate and is under the supervision of a person 18 years of age or older.

(Section 7725.b) No one under the age of 8 years may operate an ATV on any state-owned property.

(Section 7725.b.1) A person 8 or 9 years of age shall only operate an ATV with an engine size of 70 cc or less.

(Section 7725.c) No person from age 8 to their 16th birthday shall operate an ATV except on lands owned or leased by a parent or legal guardian, unless he or she is under the supervision of a certified ATV safety instructor or has completed a prescribed safety training course and received an ATV safety training certificate.

Some professional groups that advocate for youth safety feel that it is not acceptable for youth under 16 years of age to operate an ATV under any circumstances. The American Academy of Pediatrics and Safe Kids Worldwide both recommend that youth under the age of 16 should not operate an ATV of any size. The reasons given for this position include a youth's lack of judgment, maturity and physical development, the inherent risks associated with ATV operation, an increased number of injuries to youth operators in recent years, and a lack of safety devices to protect children against injuries common to ATV riding. Lay groups, such as "Concerned Families for ATV Safety", have recently formed to advocate for stricter regulations regarding youth and ATV operation. Whether or not the risk of injury to youth is sufficient to justify banning all ATV operation by youth under the age of 16 is an area that is sure to generate considerable debate over the next few years. Parents are encouraged to stay informed of the arguments for and against ATV operation by youth. Parents allowing their sons and daughters to operate ATVs should be aware of the risks, provide for proper instruction, and monitor the safe use of the ATV for both work and recreation.

Summary of

PENNSYLVANIA'S ALL-TERRAIN VEHICLE LAW



Figure 4. The Department of Conservation and Natural Resources brochure explains Pennsylvania regulations regarding ATV use.

ATV Training Programs for Youth

Young operators should always learn to operate an ATV in an approved safety training program. Approved safety training programs are most commonly offered by the ATV Safety Institute (www.atvsafety.org) and state agencies such as the PA Department of Conservation and Natural Resources (DCNR). For information on approved ATV safety training in Pennsylvania, visit the DCNR website (www.dcnr.pa.us) or call DCNR's Bureau of Forestry at 717-783-7941. Adult supervision of beginning riders can increase the development of safe ATV riding habits.

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