

All-Terrain Vehicle Safety

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With more than 800 deaths and 130,000 injuries occurring each year, all-terrain vehicle (ATV) safety is a critically important issue for communities and riders across the country (Jennissen, Peck, et al., 2015). About one third of ATV-related deaths and injuries involve children younger than 16 years (Stiles, Helmer, Drake, & Hahn, 2015). Like other activities involving high speeds and heavy machinery, riding an ATV can be dangerous and certain behaviors will increase the risk of injury or death.

Position

The National Association of Orthopaedic Nurses (NAON):

- Urges that anyone younger than 16 years should never be on an adult ATV.
- Supports public education of the risks and dangers involved in riding ATVs.
- Encourages formal training to teach drivers how to control ATVs and what protective personal equipment should be worn, such as helmets and body armor.
- Recommends that a parent or other responsible adult must closely supervise children younger than 16 years riding an age-appropriate ATV.

Background/Rationale

All-terrain vehicles, introduced in the early 1970s, are powerful and potentially dangerous vehicles that can travel in excess of 65 miles per hour (mph). They can weigh more than 600 pounds and usually have no roll-over protection or seat belts. All-terrain vehicles have four large balloon-style tires, a straddle seat, handlebars for steering, and hand controls for throttle and brakes. The operator engages in “active riding,” requiring him or her to shift body weight while maintaining grip and footing. This is required to maintain vehicle-operator stability and prevent loss of control (Jennissen, Harland, & Denning, 2016). Because a child’s physical and cognitive abilities are not fully developed, he or

she may not be able to safely control the ATV (House, Schwebel, Mullins, Sutton, & Swearingen, 2016).

Rules of ATV Safety

The ATV Safety Institute (2017) “Rules of ATV Safety” include the following:

- All riders should always wear protective, reflective clothing, including:
 - A helmet designed for motor sports (Department of Transportation compliant),
 - Goggles for eye protection,
 - Long sleeves and gloves, and
 - Long pants and over-the-ankle boots.
- Ride an age-appropriate ATV. Anyone younger than 16 years should never be on an adult ATV, either as driver or as passenger.
- Supervise riders younger than 16 years on age-appropriate ATVs.
- Never carry a passenger on a single-rider ATV and not more than one passenger on an ATV specifically designed for two people.
- Never ride under the influence of alcohol or drugs.
- Never ride on paved roads, except to cross. Do so cautiously when permitted by law.
- Ride only on designated trails at a safe speed.
- Take a hands-on ATV safe rider course.

All-Terrain Vehicles for Children

There are four youth ATV categories that vary in speed and motor size. None are made for children younger than 6 years.

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- ATVs for riders 6 years and older can travel 10–15 mph.
- ATVs for riders 10 years and older can travel 15–30 mph.
- ATVs for riders 12 years and older can travel 15–30 mph.
- ATVs for riders 14 years and older can travel 20–38 mph.
- Children younger than 16 years should never be on an adult ATV, either as driver or as passenger. (American Academy of Pediatrics, 2018)

Traditional ATVs are designed for one rider only and having a passenger limits the ability of a driver to self-eject when losing vehicle control. Rollovers are the most common ATV accident (Jennissen, Godding, Harland, & Denning, 2015). The combination of low-inflation tires, short wheel base, and high center of gravity not only enhance maneuverability but also cause instability (House et al., 2016). When buying an ATV, it is recommended to choose one with a seat belt, roll bar, engine covers, and a speed-limiting device (American Academy of Pediatrics, 2018).

Injuries Associated With ATV Use

- Traumatic brain injuries
- Skull fractures
- Spinal cord injuries: cervical spine, thoracic spine, and/or lumbar spine
- Thoracic cavity injuries
- Intra-abdominal injuries
- Pelvic fractures
- Long bone fractures
- Facial fractures
- Blunt and penetrating trauma
- Soft tissue injuries. (Benham et al., 2017; Rhodes et al., 2015; Stiles et al., 2015; Thompson et al., 2016).

Orthopaedic nurses witness firsthand the devastating effects of injuries suffered during ATV accidents and play an important role on multidisciplinary teams treating victims of ATV accidents (Rhodes et al., 2015). “Education is considered an essential component in decreasing ATV-related deaths and injuries” (Jennissen, Peck, et al., 2015, p. 166).

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