

# Study finds ATV guidelines inadequate

September 17 2008

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National size guidelines for all-terrain vehicles (ATV) are inadequate to ensure the safety of young riders, according to preliminary results from a study by researchers at the University of Kentucky.

Based on initial experiments, the researchers found that national ATV size guidelines for youth – which match the rider's age to a recommended vehicle frame or engine size – do not assure a proper fit. Though results are preliminary and the initial experiments were considered exploratory, the results have profound implications.

"We hope that these data will lead to changes in ATV use that will save the lives of children in the Commonwealth and elsewhere," said UK trauma surgeon Dr. Andrew Bernard, who is principal investigator of the ATV study group.

The group – made up of engineers, surgeons, and trauma prevention experts – has completed the initial phase of its comprehensive, multi-year study to measure various physical and behavioral aspects of ATV safety, particularly involving children.

Two preliminary experiments involved 11 children age 12-15 and eight children age 6-11. The research, the first of its kind, began in June at UK's Wenner Gren Biomedical Research Facility.

The study found that current guidelines do not account for variability in body size and shape among children of the same age group or even of the same age. For example: larger children under age 16 may fit the

adult-size vehicle frame better, even though the recommendation would be for a "youth" sized frame or engine. Consequences of rider misfit include the inability to adequately steer, brake, or accommodate varying terrain. The converse applies for those above age 16 but who are of small stature.

"Enormous variability exists among similar-age kids with regard to parameters of fit," Bernard said. "This makes it uncertain that current guidelines will correctly match a youth to the right ATV frame size."

The study found that seven of the eight children age 6-11 tested did not meet recommended existing guidelines for proper fit when mounted on the adult-size ATV.

"This evidence shows us that young children do not fit and should never be allowed to operate an adult ATV of the type tested, regardless of experience, supervision or equipment," Bernard said.

The study also found that downhill operation of either large or small ATVs, particularly during turning, is associated with limited maneuverability by young riders.

In summary, Bernard said, the current guidelines are important because they do limit engine size, but they fall far short of actually determining the correct frame size for young riders. Body size and mechanics directly affect the rider-vehicle fit but are not considered in the current guidelines.

"The result may be vehicles that are too large or even perhaps too small. In either case, they can present operational safety hazards," Bernard said. "Much further research is needed. We recommend extreme caution if parents choose to allow their child to ride an ATV, with optimal fit, equipment, training and supervision being essential."

Source: University of Kentucky

Citation: Study finds ATV guidelines inadequate (2008, September 17) retrieved 20 March 2024 from <https://phys.org/news/2008-09-atv-guidelines-inadequate.html>

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