

ATV study to improve fit, safety among kids

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The University of Kentucky is conducting a first-ever study of its kind to analyze all-terrain vehicle (ATV) safety, particularly in children. UK trauma surgeon Dr. Andrew Bernard is the primary investigator of a comprehensive multi-year investigation which will measure a number of physical and behavioral issues accompanying pediatric ATV usage. The research will begin June 9 at the Wenner Gren Biomedical Research Facility on the UK campus.

One of the ways to improve ATV safety for children is to buy the proper size vehicle. Current recommendations for determining the right vehicle size are based upon age categories, 6-11, 12-15 or 16 and above. The problem with these categories is that each of these age groups can have a wide variability in the rider size.

"Since most children injured on ATVs are riding adult size vehicles, this study will attempt to determine the fit between a child and a vehicle that is adult-size," said Bernard. "It will also try to determine how often a youth in a certain age bracket is actually fitted with the wrong vehicle."

During the 2008 Memorial Day weekend, there were 13 ATV-related deaths nationally and four of those in Kentucky. It's an all too common headline in this state, which ranks third in the nation for ATV deaths.

The premise of the Phase I aspect of this unique study is that age is not the best indicator of how a child is properly fit to, and can safely use, an ATV. Thus, quantification of pediatric biometrics, or the measurement of physical characteristics, in ATV riders is the first goal of this research

program. The resulting experimental procedure involves use of a custom-designed variable incline ramp that simulates riding an ATV over varying terrain. Video cameras will be focused on the child sitting on the ATV and will record a host of parameters, including arm reach, leg angle, head and trunk inclination. Grip reach and strength will also be quantified in an effort to determine how brake lever design contributes to safety with regard to braking capabilities.

Young research subjects are being recruited to sit on youth and adult size ATVs while key body dimensions are being measured and compared to ATV dimensions. Subsequent phases of this study will include an examination of visual perception, hazard recognition, as well as and ATV braking and steering.

Although some pediatricians would respond that this research is unnecessary because a child should not be on an ATV at all, the approach taken by this research will provide consumers, manufacturers, and potentially government regulators important information for those parents who choose to allow a child to ride, said Dr. Bernard.

"ATVs are the fastest growing part of the motor sports industry and Kentucky is one of the leading states in the country in per capita ATV death rates over the last five years," said Bernard. "Kids are going to ride and there is little that can be done to prevent that. However, there are things that can be done to dramatically lower the likelihood that a child or adult will be injured on an ATV."

Source: University of Kentucky

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