

Children in rural communities at risk for poor lawnmower injury outcomes

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Children in rural communities are 1.7 times more likely to undergo an amputation after a lawnmower injury than children in urban communities, according to a new study by researchers at Children's

Hospital of Philadelphia (CHOP). The researchers also found that although lawnmower injuries are prevalent throughout the United States, children in Southern and Midwestern states account for more than 80% of pediatric lawnmower injuries.

The findings were published in the May issue of the *Journal of the American Academy of Orthopaedic Surgeons*.

"Lawnmower injuries affect thousands of [children](#) each year across the country," said Theodore J. Ganley, MD, an orthopaedic surgeon in CHOP's Pediatric Trauma Program and senior author of the study. "It is important for parents to understand that riding on or being near a lawnmower can have devastating consequences for children. These traumatic injuries have a huge impact on children, their families, and future generations."

Approximately 9,400 pediatric lawnmower injuries occur each year, with a hospitalization rate two times higher than any other consumer product-related injury. The injuries often require lengthy inpatient stays and multiple surgeries due to their severity and involvement of bone and soft tissues. These injuries also carry a high economic burden, costing the healthcare system about \$90 million a year.

To assess the geographic distribution of these incidents, the research team used the Pediatric Health Information System, a unique, pediatric-specific database containing information from 49 not-for-profit hospitals across the United States. They analyzed data from children aged 0 to 18 between 2005 and 2017 and identified 1,302 patients who presented to a hospital with a lawnmower injury.

Of those patients, more than half were between the ages of 1 and 5. In [rural areas](#), more than 60% of lawnmower injuries occurred in this youngest group, versus 43.7% in urban areas. The incidence, severity,

and complications of lawnmower injuries were all greater in [rural communities](#) than in urban ones, with children in rural communities more likely to require an inpatient stay and 1.7 more likely to require an amputation.

The researchers also looked at injuries by geographic region and found that a combined 81.9% of all injuries occurred in the South and Midwest. The team attributes the high incidence in these regions to the [warmer weather](#) in the South, leading to more time spent mowing lawns, and the higher prevalence of ride-on mowers in the Midwest due to larger land areas.

Although many lawnmowers come with [safety features](#), such as ride-on lawnmowers whose blades do not operate when the mower is reversing, the authors note many of these features can be overridden by operators.

"The safety features built into the lawnmower design can be improved by further scientific research, exploring risk stratification and design guidelines," Ganley said. "Regardless of the design, however, young children should be kept away from lawnmowers of any type, as the consequences of a lawnmower [injury](#) can be devastating and life-altering."

More information: Ronit Shah et al, Lawnmower Injuries in Children, *Journal of the American Academy of Orthopaedic Surgeons* (2019). [DOI: 10.5435/JAAOS-D-19-00233](#)

Provided by Children's Hospital of Philadelphia

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