

# More children injured on bouncy castles than mechanical amusement rides

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More children are injured by inflatables such as bouncy castles than mechanical amusement rides, finds a study by Kathryn Woodcock, director of Ryerson's THRILL Lab (Tools for Holistic Ride Inspection Learning and Leadership) and a professor in the School of Occupational and Public Health.

You see them at birthday parties, indoor playgrounds or school fairs –bouncy castles – and kids love playing on them. A new study by Ryerson University found more children are injured on inflatables than on mechanical amusement rides.

"In amusement parks, roller coasters, Ferris wheels and other mechanically operated amusement rides are designed to keep people safe," says Kathryn Woodcock, a professor in the School of Occupational and Public Health, and the lead author of the study.

"However, inflatable bounces are just big bags of air. Children can easily collide with each other, land in a bad position or even fall off the device and potentially seriously hurt themselves." Inflatable rides range from small bouncy castles to tall inflated slides and climbing devices that could also tip, blow away or even deflate if improperly set up.

The risk of getting injured on amusement rides is very low. According to a report by the U.S.-based National Safety Council in 2010, the chance of getting injured on a ride is four in a million, with less than one per cent of that number requiring hospitalization for at least one night.

However, Woodcock, who studies amusement ride design and engineering and is director of the THRILL lab (Tools for Holistic Ride Inspection Learning and Leadership), says amusement ride injuries is an area that has not been well researched. Furthermore, studying accident patterns on amusement rides is hindered by lack of detail in publicly collected data. "In order to prevent injuries on rides, we need to know how these [injury](#) events are happening and on which rides."

Since there aren't any national reporting regulations for amusement ride injuries in Canada, Woodcock analysed amusement injury data collected by the U.S.-based National Electronic Injury Surveillance System (NEISS) in 2010. She reviewed injury reports collected from a network of 100 hospital emergency rooms in the U.S with 476 cases representing a national estimate of 13,770 injuries associated with amusement rides for the country. Each report included the injured person's age, gender, ethnicity, diagnosis, and the nature of their visit to the hospital.

Woodcock found that inflatable bounces accounted for 42 per cent of amusement injuries in all age groups, with over half of the injuries in children aged 15 years and under. The study also found that 20 per cent injuries were from roller coasters, followed by carousels (three per cent) and bumper cars (three per cent). Girls and women reported over half of the injuries; only for children age five and under did boys outnumber girls. One third of the injuries reported did not specify the particular ride. The researcher cautions that this large gap in data makes it difficult for researchers to gain a more accurate injury rate on specific rides.

So what does this mean for parents? Woodcock urges them to use caution when their children go on rides, and not let their guard down for inflatables. "In Ontario, amusement operators - big and small – are regulated by the Technical Standards and Safety Authority (TSSA). Parents should look at amusement rides including inflatables to verify they have license tags. If in doubt, ask the operator or contact TSSA if

things look questionable." Woodcock also suggests parents should watch attendants to ensure they are instructing the children on safe behaviour, making sure the ride is not overloaded, and ensuring children of similar ages play in the inflatable at separate times."

As for operators, Woodcock looks forward to more pooling of injury report data. "Injuries in this industry are pretty rare, and patterns are not going to be easy to find within business volumes of any but the largest operators. We are going to have to find a way to share data that doesn't create administrative headaches for the operator, but does collect information that researchers can interpret and feed back to them."

To that end, Woodcock is developing tools to help operators collect information from guests and make it easier for operators to share their data.

**More information:** Kathryn Woodcock, "Amusement ride injury data in the United States," *Safety Science*, Volume 62, February 2014, Pages 466-474, ISSN 0925-7535, [dx.doi.org/10.1016/j.ssci.2013.10.003](https://doi.org/10.1016/j.ssci.2013.10.003).

Provided by Ryerson University

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