

# Injuries from falls involving skateboards & in-line skates

## Understanding the Issue

Skateboarding and in-line skating are two common forms of active transportation for children in Canada that create a risk for injury. In both cases, falls are the most common mechanism of injury, which leads to an increased risk for elbow, forearm and wrist injuries.<sup>1</sup>

To help better understand the issue, this Ontario Injury Compass presents emergency department (ED) visit data for injuries related to falls involving skateboards and in-line skates for those 0-14 years, as well as strategies to prevent injuries resulting from a fall.

## Injury Trends - Then vs. Now

During the early 2000's the number of ED visits from falls involving skateboards and in-line skates decreased dramatically. For example in 2002 the number of ED visits was 4511 and by 2008 it was 2504, a 44% reduction. Since that time, the number of ED visits from falls involving skateboards and in-line skates has remained relatively stable. For example in 2009 the number of ED visits was 2564 and in 2015 it was 2420, a 6% reduction (see Figure 1).

## Risk Factors

### Age

Between 2011 and 2015, the number of ED visits from falls involving skateboards increased incrementally with age and older children (aged 12-14) experienced a higher number of ED visits (6363) than all other ages combined (3357).

During this time, the number of ED visits due to falls involving in-line skates also increased incrementally with age but this trend reversed after reaching a peak of 445 ED visits at age 10 (see Figure 2).

### Sex

Between 2011 and 2015, males accounted for 81% of ED visits from falls involving skateboards whereas females accounted for 53% of ED visits

from falls involving in-line skates. Males had a higher number of ED visits from falls involving skateboards for every age group.

FIGURE 1. ED visits for injuries from falls involving skateboards and in-line skates, NACRS, Ontario 2001-2015

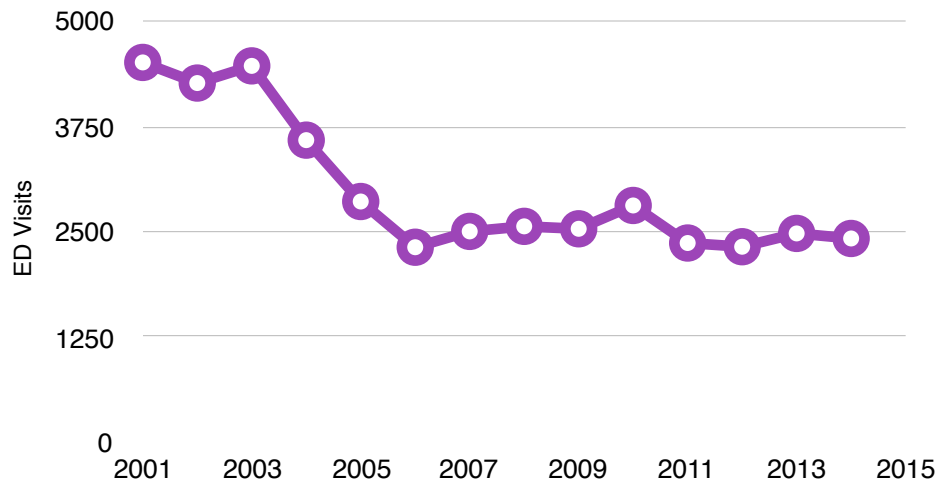
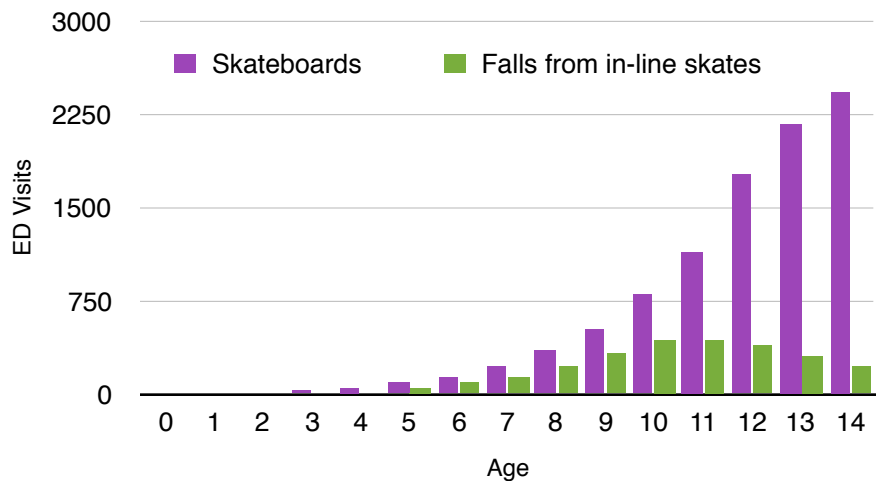


FIGURE 2. ED visits for injuries from falls involving skateboards vs. in-line skates, by age group, NACRS, Ontario, 2011-2015



## Injury Location

The majority (58%) of injuries seen in Ontario EDs in 2015, from falls involving skateboards and in-line skates, were to the elbow/forearm and wrist/hand. Injuries to the head, lower leg/knee, and ankle/foot were also common (see figure 3).

## Prevention Strategies

### Safety Equipment

Children should wear properly fitted protective gear including wrist pads, elbow guards and knee pads to help protect against injuries from falls involving skateboards and in-line skates (such as fractures and sprains).<sup>1-2</sup>

One Canadian study found only 11% of children injured from in-line skating and 5.7% injured from skateboarding use any protective gear beyond a helmet,<sup>3</sup> which suggests more efforts are needed to increase the use of protective gear.

### Helmets

A properly fitted and correctly worn helmet can cut the risk of serious head injury by up to 80%<sup>4</sup> and the use of helmets is associated with a decreased likelihood of both head injury and hospital admission for children using skateboards and in-line skates.<sup>1</sup>

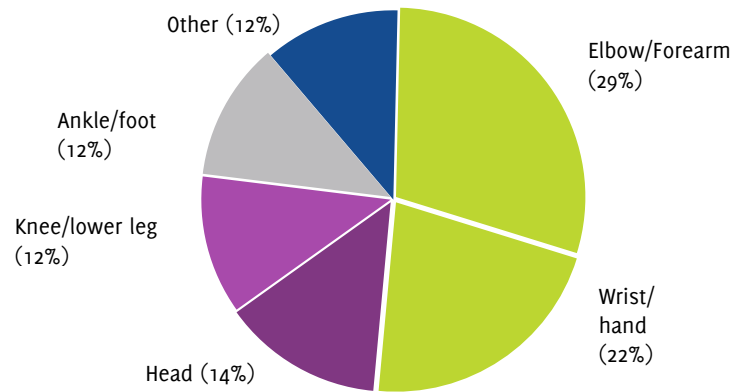
However, research suggests that less than 50% of children injured from in-line skating and less than 30% of children from skateboarders wear helmets.<sup>1,3</sup> Therefore, more efforts are needed to increase helmet use for children participating in these activities.

### Other Behavioural Strategies

The following recommendations from the American Paediatric Society can help to reduce the risk of injury from falls involving skateboards and in-line skates:

- Children younger than 5 years should not use skateboards and should

FIGURE 3. ED visits for injuries from falls involving skateboards and in-line skates, by injury location, NACRS, Ontario, 2015



undertake activities that are more developmentally appropriate.<sup>5</sup>

- Children younger than 10 years old should not use skateboards without close supervision by an adult or responsible adolescent.<sup>5</sup>
- In-line skaters should be trained to react appropriately to rapidly occurring and unpredictable circumstances by learning to stop quickly and fall safely.<sup>6</sup>

## Methodology

ED visit data were obtained from the National Ambulatory Care Reporting System (NACRS) at CIHI. Data are from calendar year 2015 (January 1, 2015 - December 31, 2015). This data was accessed using IntelliHEALTH ONTARIO through the Ministry of Health and Long-Term Care. ICD-10-CA coding was used to isolate falls involving skateboards and in-line skates (W02).

## References

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