

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.¹

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

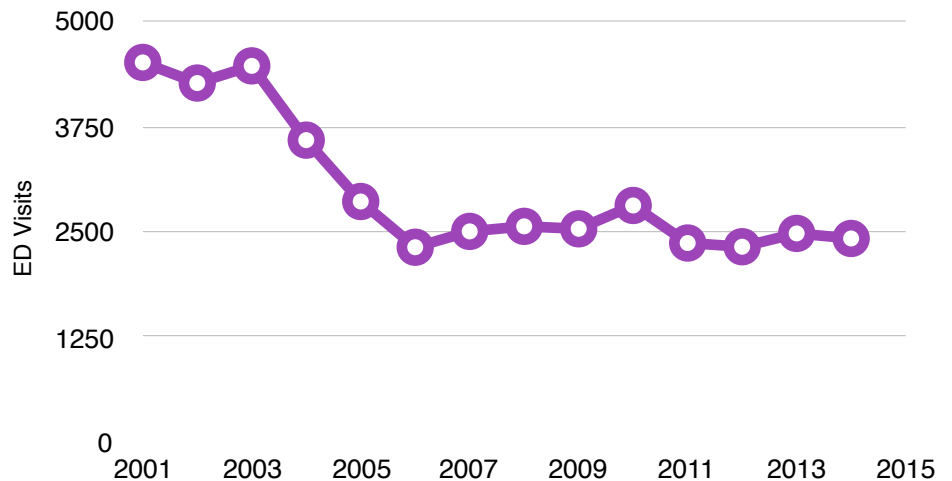
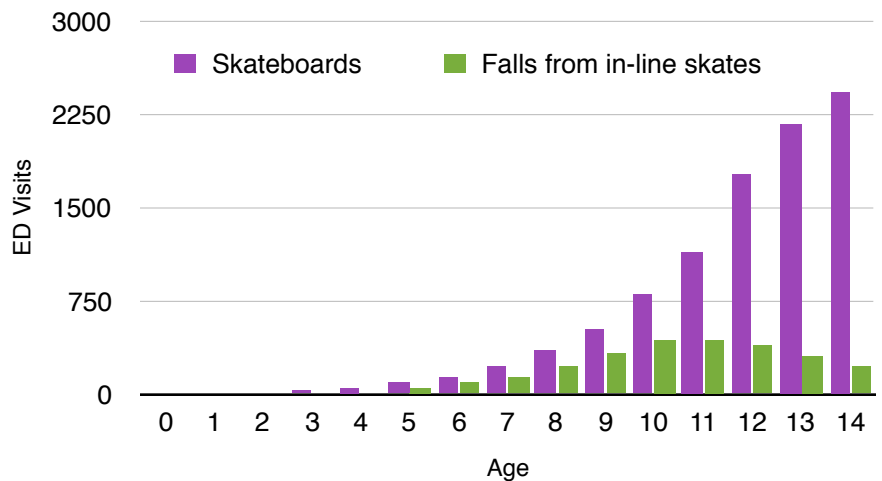


FIGURE 2. ED visits for injuries from falls involving skateboards vs. in-line skates, by age group, NACRS, Ontario, 2011-2015



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).¹⁻²

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,³ 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%⁴ 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.¹

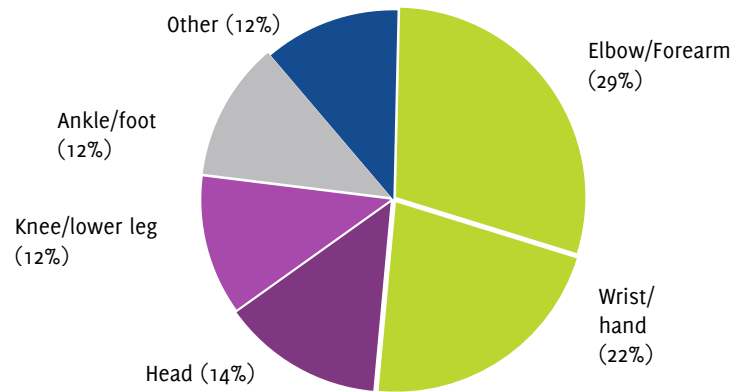
However, research suggests that less than 50% of children injured from in-line skating and less than 30% of children from skateboarders wear helmets.^{1,3} Therefore, more efforts are needed to increase helmet use for children participating in these activities.

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.⁵

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

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

1. Lindsay, H., Brussoni, M. (2014). Injuries and helmet use related to non-motorized wheeled activities among pediatric patients. *Chronic Diseases and Injuries in Canada*, 34, 74-81. Retrieved from: <http://www.phac-aspc.gc.ca/publicat/hpcdp-pspmc/34-2-3/ar-02-eng.php>
2. Schieber, R.A., Branche-Dorsey, C.M., Ryan, G.W., Rutherford, G.W Jr., Stevens JA., & O'Neil J. (1996). Risk factors for injuries from in-line skating and the effectiveness of safety gear. *The New England Journal of Medicine*, 335, 1630-1635. Retrieved from: <http://www.nejm.org/doi/full/10.1056/NEJM199611283352202>
3. Thakore, S., Tram, J., Hagel, B., Kyle, T., Senger, T., & Belanger, F (2009). Injuries among wheeled shoe users: A comparison with other nonmotorized wheeled activities. *Paediatric Child Health*, 14, 509-513. Retrieved from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2780964/pdf/pch14509.pdf>
4. Macpherson AK. Apr 2015. Personal communication.
5. American Academy of Pediatrics Committee on Injury and Poison Prevention. (2002). Skateboard and Scooter Injuries. *Pediatrics*, 109, 542-543. Retrieved from: <http://pediatrics.aappublications.org/content/pediatrics/109/3/542.full.pdf>
6. American Academy of Pediatrics Committee on Injury and Poison Prevention. (1998). In-line Skating Injuries in Children and Adolescents. *Pediatrics*, 101, 720-722. Retrieved from: <http://pediatrics.aappublications.org/content/pediatrics/101/4/720.full.pdf>

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