

Skiing & Snowboarding Injuries

On average, each month approximately 950 individuals visit an emergency department for an injury from skiing and snowboarding. Young males have the highest rate of injury.

Results

During the 2007/08 fiscal year, there were a total of 11,593 emergency department visits for injuries from skiing and snowboarding. (See Methods Section for Data Sources). These numbers translate into provincial rates of 96.7 per 100,000 population for emergency department visits (Table 1).

Males represented over 60% of emergency department visits and peaks in the number of cases were observed in those aged 10 to 19 (Figure 1).

Injuries to the upper and lower limbs were the most commonly reported injury for emergency department visits, accounting for 50% and 22% of emergency department visits respectively. (Figure 2).

Injury rates varied by region, with the highest overall rates reported in the northern region of the province (Table 1).

For each region, pre-teens and teenagers 10 to 19 years of age represented the highest rates of emergency department visits (Table 2).

Of the 11,593 individuals who visited an emergency department for treatment for a ski or snowboard injury, over 90% were discharged to their place of residence.

FIGURE 1. Emergency department visits for injuries from skiing and snowboarding by age and sex (Ontario, 2007/2008)

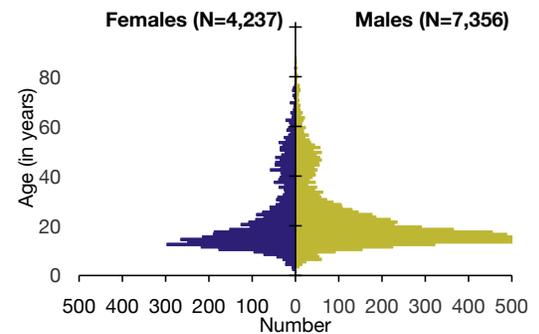


FIGURE 2. Nature of skiing and snowboarding injuries (Most responsible diagnosis, Ontario, 2007/2008)

Emergency Department Visits

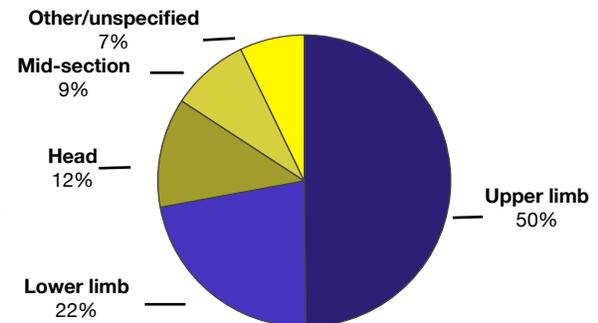


TABLE 1. Regional comparison of skiing and snowboarding injuries (Ontario, 2007/08)

	South West	Central South	Central West	Central East	Toronto	East	North	Ontario
Emergency Department Visits								
Number	1,183	800	2,006	2,800	1,603	1,696	1,231	11,593
Rate per 100,000^a	77.4	71.0	85.4	127.2	66.7	107.8	148.0	96.7
Average Age	23	21	22	22	25	23	21	23
% Male	65	66	64	66	59	63	63	63

a. Age-standardized rate per 100,000 population. Note: Region of residence unknown/outside of Ontario for 274 emergency department visits.

TABLE 2. Regional comparison of ER visits for skiing and snowboarding injuries in the pre-teen, teen and young adult population, by age group (Ontario, 2007/08)

	South West	Central South	Central West	Central East	Toronto	East	North	Ontario
Emergency Department Visits- Rate per 100,000^a								
10-14 years	309.1 (335)	244.9 (198)	359.1 (603)	535 (857)	259.7 (386)	436.2 (478)	720.1 (425)	400.8 (3345)
15-19 years	263 (291)	254.9 (209)	266.3 (429)	465.3 (733)	180 (265)	334.1 (365)	514.6 (318)	322.7 (2677)
20-24 years	146.9 (163)	179.6 (145)	159.7 (261)	231.3 (331)	100 (180)	180 (199)	240.5 (138)	171.5 (1451)
25-29 years	79.8 (79)	77.8 (56)	87 (141)	102.3 (127)	76.2 (170)	107.8 (114)	144.1 (65)	93.6 (778)

a. Age-specific rate per 100,000 population. Note: Region of residence unknown/outside of Ontario for 274 emergency department visits.



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Discussion

Alpine skiing and snowboarding are very popular winter sports in Canada for individuals of all ages and skill levels. The thrill of gliding down a mountain side with the wind in your face is one that many cannot resist. It's important to remain active and continue to participate in these winter activities, but before you hit the slopes, be sure to educate yourself on ways to reduce your risk of being injured. The following 'Managing the risk' section outlines ways in which individuals can continue to enjoy skiing and snowboarding while mitigating their risk of becoming injured, as sadly, every year there are reports of traumatic injury resulting from participation.

Results from a recent study which looked at snowboarding, skiing and related traumatic injuries over 10 years, indicated that the majority of injuries were a result of falls and of collisions with natural objects. Further, head injuries represented the majority of severe cases, followed by chest, spinal injuries and injuries to the extremities.¹

Another study highlighted the risk of severe injury associated with these two sports, stating that traumatic brain injury is the most common cause of death and catastrophic injury for each.

Evidence shows that helmets reduce the risk of head injury by 22-60%. More specifically, a very recently released study has reported that skiers and snowboarders wearing a helmet are 35% less likely to suffer from a head injury than those without a helmet.² In addition, it was found that helmets do not increase the risk of injury to the neck.²

As of now, snowboard and ski helmets with a CSA seal are not yet available as the CSA standard was released only in 2008. It is highly recommended; however, that skiers and snowboarders wear helmets. Estimates show that for every 10 people who wear a helmet, up to six may avoid an injury to the head.³

In consideration of these findings, injury prevention initiatives should emphasize the use of helmets as well as other ways to minimize the risk of injury. This includes the emphasis on the responsibility of the skiers and snowboarders to stay safe (the responsibility code).⁴

Finally, severity of snowboarding injury increases with increased skill level, therefore injury prevention strategies should be targeted by skill level.⁵

Public Health can work with organizations in the community to educate the public on winter safety and promote injury prevention initiatives, using the following messages.

References

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7. Safe Kids Canada. Skiing <http://www.safekidscanada.ca/SKCFORParents/section.asp?s=Safety+In+formation+by+Topic&slD=10774&ss=Winter+Safety&sslD=11338&sss=Downhill+Skiing&ssslD=26440>

Managing the risk^{6,7}

❖ Snowboarding:

- The American Academy of Pediatrics recommends that children under 7 years of age should not snowboard.
- Snowboards should have full length steel edges and stiff, secure bindings. The board leash must be securely attached and children should ride a short board (no longer than chest high).

❖ Skiing:

- Ensure all ski equipment is professionally checked every year. Ensure bindings, boots, and skis fit properly.

❖ Skiing & Snowboarding:

- Beginners should take lessons from a qualified instructor.
- Wear a helmet at all times.
- Dress to avoid frostbite and UV ray exposure. Sunglasses or goggles. Sunscreen.
- Be extra vigilant on your first and last run of the day (highest risk for injury).
- Stop before it gets too dark or you become too tired.
- Always ski/snowboard with company. Never ski/snowboard alone.
- High speed and jumps increase your risk of injury. Be cautious.
- Remain on designated paths and trails and follow all rules.
- Choose runs which suit your ability. Ensure you understand the signs which indicate difficulty level.
- Remain alert for hazards and visibility changes from fluctuating weather.

For Further Information:

Safe Kids Canada
<http://www.safekidscanada.ca>
ThinkFirst Canada
www.thinkfirst.ca
SMARTRISK
www.smartrisk.ca

Methods

Emergency department data were obtained from the National Ambulatory Care Reporting System and acute care hospitalization data were obtained from the Discharge Abstract Database at the Canadian Institute for Health Information for the 2007/08 fiscal year. ICD-10 coding (W22.00, W51.00, W02.01, W02.04) was used to isolate all emergency department visits and hospitalizations for skiing and snowboarding injuries. Note that some persons were seen in an emergency department and then admitted to hospital; however, persons can be admitted to hospital without visiting an emergency department. Regions were defined according to place of residence using the Ontario Ministry of Health Region Codes. Deaths occurring outside of the hospital setting were not included in this analysis.