

Ice Skating Falls

Each year in Ontario, more than 5,000 people visit an emergency department and nearly 300 are hospitalized due to a fall while ice skating.

Results

During the 2004/05 fiscal year, there were a total of 5,102 visits to an emergency department and 283 hospitalizations due to a fall while ice skating in Ontario. Males accounted for 54% of emergency department visits and 59% of hospitalizations due to a fall while ice skating. For emergency department visits in Ontario, a large peak in the number of injuries was observed among males and females 9-17 years of age (Figure 1). For hospitalizations, small peaks were seen among those 10-12 and 40-44 years of age. In some cases, detailed results for ice skating-related injury hospitalizations are not presented due to small numbers.

For emergency department visits due to ice skating falls, the upper limb was the most common site of injury, followed by injuries to the lower limb, head, or neck (Figure 2). More specifically, fractures of the forearm or lower leg and cuts to the head or face were most frequent. In contrast, for hospitalizations, the lower limb was the most frequent site for injury, followed by injuries to the upper limb. In particular, lower leg fractures were most common, followed by forearm fractures.

About 94% of persons who visited an emergency department due to an ice skating fall were discharged home and nearly 3% were admitted to the reporting facility. For hospitalized cases, about 96% were discharged home and 3% were discharged to another facility providing inpatient care (e.g., rehabilitation centre). There were no deaths reported after arrival in an emergency department or admission to an acute care hospital. The 283 hospitalized cases accounted for 678 days in acute care hospitals with an average length of stay of 2.4 days.

January was the most common month for a ice skating fall, followed by February and December. This pattern was seen for both emergency department visits and hospitalizations.

FIGURE 1. Emergency department visits for ice skating falls by age and sex (Ontario, 2004/2005)

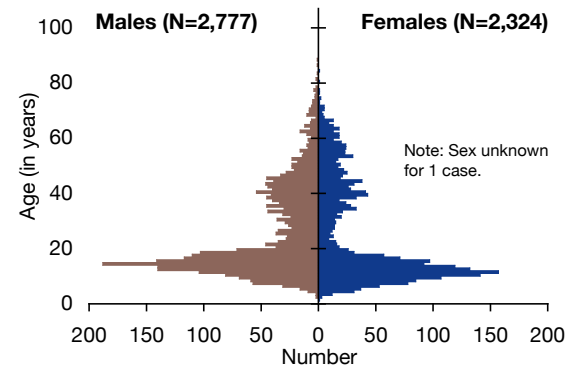
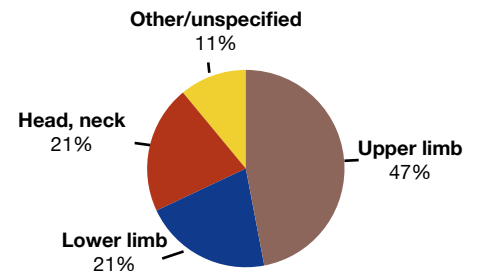


FIGURE 2. Site of injury for ice skating falls (Most responsible diagnosis, Ontario, 2004/05)

Emergency Department Visits



Hospitalizations

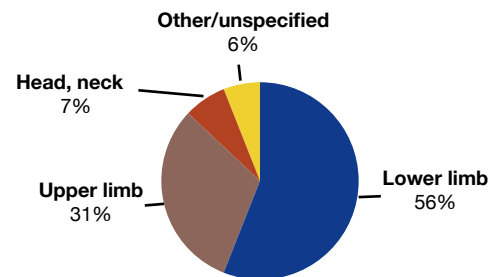


TABLE 1. Regional comparison of ice skating falls (Ontario, 2004/05)

	South West	Central South	Central West	Central East	Toronto	East	North	Ontario
Emergency Department Visits								
Number	835	456	616	942	540	1,088	506	5,102
Rate per 100,000 ^a	55.2	39.9	26.0	42.7	22.2	67.0	60.1	42.0
Average age (in years)	22	23	25	25	26	29	23	25
% male	54	59	57	52	56	53	55	54
Hospitalizations								
Number	33	16	47	57	25	68	32	283
Rate per 100,000 ^a	2.1	1.4	2.0	2.5	0.9	3.8	3.2	2.2
Average age (in years)	34	30	40	34	40	43	39	38
% male	73	63	66	74	44	50	41	59

a. Age-specific rate per 100,000 population. Notes: Unknown sex for 1 emergency department visit. Region of residence unknown/outside of Ontario for 119 emergency department visits and 5 hospitalizations.



Ontario Injury Compass

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TABLE 2. Regional comparison of ice skating falls for select age groups (Ontario, 2004/05)

	South West	Central South	Central West	Central East	Toronto	East	North	Ontario
Emergency Department Visits - Rate per 100,000 population^a (Number)								
5-9 years	100.7 (100)	105.3 (77)	55.1 (90)	89.0 (130)	47.6 (71)	116.9 (115)	124.5 (64)	84.2 (657)
10-14 years	243.6 (264)	154.6 (125)	85.8 (144)	154.8 (248)	92.2 (137)	231.8 (254)	267.7 (158)	162.4 (1,355)
15-19 years	127.4 (141)	84.2 (69)	48.4 (78)	89.5 (141)	36.0 (53)	116.2 (127)	155.3 (96)	86.8 (720)
20-24 years	38.8 (43)	35.9 (29)	20.2 (33)	28.0 (40)	15.6 (28)	40.7 (45)	29.6 (17)	28.8 (244)
25-29 years	44.4 (44)	22.2 (16)	19.1 (31)	28.2 (35)	11.2 (25)	38.8 (41)	28.8 (13)	25.7 (214)
30-34 years	44.4 (45)	25.0 (19)	17.8 (32)	36.0 (52)	15.7 (37)	55.9 (63)	42.5 (22)	30.8 (278)
35-39 years	45.6 (51)	34.2 (30)	31.8 (64)	36.9 (65)	20.6 (45)	61.5 (77)	41.9 (25)	36.7 (360)
40-44 years	32.4 (42)	28.0 (28)	26.8 (57)	39.7 (81)	24.8 (54)	60.8 (88)	28.3 (21)	34.9 (378)
45-49 years	23.2 (28)	14.0 (13)	16.6 (30)	24.0 (43)	16.3 (31)	41.0 (54)	37.8 (27)	24.0 (232)
50-54 years	17.0 (18)	16.0 (13)	7.3 (11)	17.4 (26)	12.1 (20)	64.4 (74)	20.6 (13)	22.6 (188)
55-59 years	20.3 (19)	19.3 (14)	7.8 (10)	19.8 (25)	10.6 (15)	46.1 (47)	19.5 (11)	20.3 (146)
60-64 years	19.1 (14)	12.3 (7)	13.0 (12)	26.2 (24)	6.6 (7)	58.2 (45)	43.9 (20)	24.3 (132)

a. Age-specific rate per 100,000 population. Note: Region of residence unknown/outside of Ontario for 113 emergency department visits among those 5-64 years of age.

For emergency department visits in Ontario, the rate of ice skating falls was 42.0 per 100,000 population and the hospitalization rate was 2.2 per 100,000 population (Table 1). By region, the lowest rates of emergency department visits and hospitalizations were observed in the Toronto region and the highest rates were seen in the East region. Regional differences were also observed in the highest numbers and rates of ice skating falls by age group (Table 2). In all regions, the highest rates were seen among those 5-19 years of age.

Discussion

This Compass highlights patterns of emergency department visits and hospitalizations due to ice skating falls in Ontario. Canadian research studies that examine ice skating injuries are rare.¹⁻³ It is important to note that this Compass focuses on injuries due to a fall. There are other types of injuries, such as colliding with another skater or injuries related to ice hockey, that would not be included in this analysis. Another important consideration is that it was not possible to examine the location (e.g., at an indoor rink or an pond) or level of play (e.g., recreational or organized activity).

Several research studies have compared ice skating injuries to other activities, such as rollerskating and inline skating. Research results indicate that ice skaters sustained a greater proportion of head injuries compared to rollerskaters and inline skaters.⁴⁻⁶ One study suggested children typically try to break a fall with their arms or hands but ice skating takes place on a low friction surface and attempts to break falls with the arms or hands are often unsuccessful, leading to head injuries.⁴

References

1. Sibbald B. Winter can be fun until the injuries start. *CMAJ* 1999;160:302.
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4. Knox CL, Comstock RD. Video analysis of falls experienced by paediatric iceskaters and roller/inline skaters. *Br J Sports Med* 2006;40:268-71.
5. Knox CL, Comstock RD, McGeehan J, Smith GA. Differences in the risk associated with head injury for pediatric ice skaters, roller skaters, and in-line skaters. *Pediatrics* 2006;118:549-54.
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Managing the risk

In Ontario, skating is a popular winter activity enjoyed not only on ice at indoor rinks but also outdoor rinks, frozen lakes, ponds, or rivers. Here are some tips that can be used to help reduce the risks of injury:

- ❖ Wear a hockey helmet while skating and ensure that it fits properly. Make sure your skates fit properly.
- ❖ Take the time to learn the proper techniques and be aware of the potential risks for injury.
- ❖ Be conscious of your surroundings. Watch for obstacles and other people. Stay in control.
- ❖ When public skating, follow the rules of the skating rink and skate in the same direction as the crowd. Avoid sudden stops in high traffic areas.
- ❖ Supervise young children while skating.
- ❖ If you are skating on a frozen lake, pond, or river, test the thickness of ice before venturing out. Ice must be at least 10 cm for skating alone and 20 cm for group skating.
- ❖ Ensure you have a base level of physical conditioning.
- ❖ Wear several layers of light, loose and water- and wind-resistant clothing for warmth and protection.

For Further Information

Skate Canada

www.skatecanada.ca

Speed Skating Canada

www.speedskating.ca

Health Canada, Consumer Product Safety-Winter Sports Safety

www.hc-sc.gc.ca/cps-spc/pubs/cons/winter-hiver_e.html

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Methods

Emergency department data were obtained from the National Ambulatory Care Reporting System and data for acute care hospitalizations were obtained from the Discharge Abstract Database at the Canadian Institute for Health Information for the 2004/05 fiscal year. Ice skating falls were classified according to the International Classification of Diseases, 10th revision (ICD-10) using code W02.00. Ice hockey injuries were not included. 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.