

# Falls from Slips and Trips

Every six minutes in Ontario, one person visits an emergency department and every 30 minutes one person is hospitalized due to a slip or trip on the same level. Falls happen to people of all ages; however, adults 80 years and older experience the highest rates.

## Results

During the 2005/06 fiscal year, there were a total of 91,320 emergency department visits and 10,266 hospitalizations due to a fall from a slip or trip on the same level (See Methods Section for Data Sources). The overall provincial rate for emergency department visits was 704.8 per 100,000 population and for hospitalizations was 69.3 per 100,000 (Table 1).

For emergency department visits, peaks in the numbers of falls from slips and trips were seen across the lifespan. In particular, the numbers were highest among males 1-2 years of age (Figure 1). In contrast, for hospitalizations, injuries peaked among females 76-91 years of age (Figure 2). By age group, the highest injury rates for emergency department visits and hospitalizations were observed for the 80+ age group (Table 3).

A wide range of injuries result from slips and trips on the same level. The leading three natures of injury are highlighted in Table 2, based on the diagnosis that was most responsible for the visit. For emergency department visits, cuts to the head or face were most common, followed by ankle sprains or strains, and femur/hip fractures. In contrast, for hospitalizations, femur/hip fractures were by far the leading nature of injury, accounting for 40% of hospitalizations, followed by lower leg and forearm fractures.

About 86% of Ontarians who visited an emergency department due to a slip or trip were discharged to their place of residence. For hospitalized cases, about 48% were discharged home, 23% were transferred to another facility that provides inpatient hospital care, and 22% were transferred to a long term care facility. Fewer than 1% of Ontarians died after arrival in the emergency department and about 4% died after hospital admission. The 10,266 hospitalized cases accounted for more than 86,000 days in acute care hospitals with an average length of stay of 8.4 days.

FIGURE 1. Emergency department visits due to slips and trips on the same level, by age and sex (Ontario, 2005/2006)

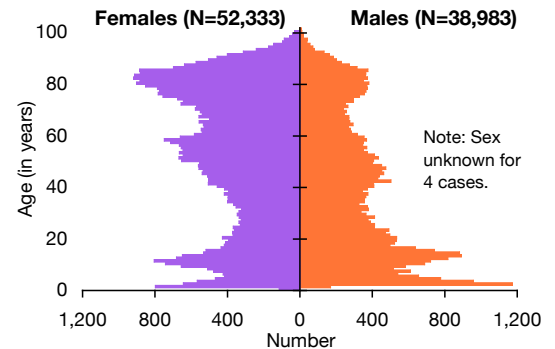


FIGURE 2. Hospitalizations due to slips and trips on the same level, by age and sex (Ontario, 2005/2006)

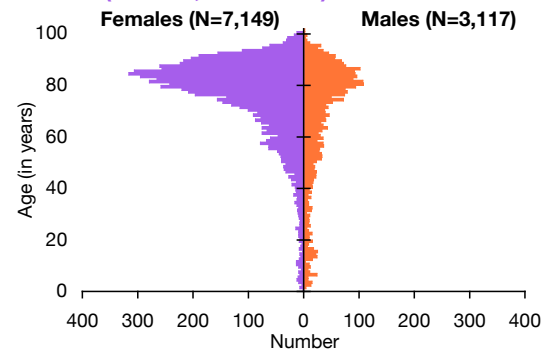


TABLE 2. Top 3 natures of injury for slips and trips on the same level (Most responsible diagnosis, Ontario, 2005/06)

| Top 3 Natures of Injury            | Number (%)   |
|------------------------------------|--------------|
| <b>Emergency Department Visits</b> |              |
| 1. Cut to the head or face         | 11,105 (12%) |
| 2. Ankle sprain or strain          | 4,850 (5%)   |
| 3. Femur/hip fracture              | 3,508 (4%)   |
| <b>Hospitalizations</b>            |              |
| 1. Femur/hip fracture              | 4,140 (40%)  |
| 2. Lower leg fracture              | 1,366 (13%)  |
| 3. Forearm fracture                | 634 (6%)     |

TABLE 1. Regional comparison of slips and trips on the same level (Ontario, 2005/06)

|                                    | South West | Central South | Central West | Central East | Toronto | East  | North | Ontario |
|------------------------------------|------------|---------------|--------------|--------------|---------|-------|-------|---------|
| <b>Emergency Department Visits</b> |            |               |              |              |         |       |       |         |
| Number                             | 1,762      | 1,169         | 1,534        | 1,527        | 1,908   | 1,318 | 935   | 10,266  |
| Rate per 100,000 <sup>a</sup>      | 944.2      | 791.5         | 545.7        | 652.1        | 608.7   | 705.7 | 859.8 | 704.8   |
| Average age (in years)             | 45         | 46            | 42           | 44           | 47      | 47    | 44    | 45      |
| % female                           | 57         | 57            | 56           | 57           | 58      | 60    | 58    | 57      |
| <b>Hospitalizations</b>            |            |               |              |              |         |       |       |         |
| Number                             | 1,762      | 1,169         | 1,534        | 1,527        | 1,908   | 1,318 | 935   | 10,266  |
| Rate per 100,000 <sup>a</sup>      | 84.2       | 72.3          | 68.6         | 65.0         | 58.7    | 63.3  | 84.5  | 69.3    |
| Average age (in years)             | 74         | 71            | 70           | 72           | 72      | 73    | 70    | 72      |
| % female                           | 71         | 68            | 69           | 67           | 69      | 72    | 71    | 70      |

a. Age-standardized rate per 100,000 population. Notes: Unknown sex for 4 emergency department visits. Region of residence unknown/outside of Ontario for 1,445 emergency department visits and 113 hospitalizations.

## Ontario Injury Compass

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**TABLE 3. Regional comparison of slips and trips on the same level, by age group (Ontario, 2005/06)**

|  | South West | Central South | Central West | Central East | Toronto | East    | North   | Ontario |
|--|------------|---------------|--------------|--------------|---------|---------|---------|---------|
| <b>Emergency Department Visits- Rate per 100,000<sup>a</sup></b> |            |               |              |              |         |         |         |         |
| <5 years   | 1,287.1    | 1,152.9       | 736.7        | 862.2        | 850.3   | 857.4   | 942.2   | 930.6   |
| 5-14 years   | 1,086.5    | 898.8         | 610.5        | 717.2        | 759.8   | 731.4   | 980.6   | 797.4   |
| 15-24 years  | 805.6      | 617.1         | 386.4        | 510.5        | 361.5   | 578.7   | 736.8   | 541.6   |
| 25-49 years  | 612.3      | 514.5         | 316.6        | 406.2        | 332.7   | 441.8   | 665.2   | 433.4   |
| 50-64 years  | 848.4      | 777.6         | 530.1        | 614.1        | 647.5   | 695.0   | 811.1   | 694.0   |
| 65-79 years  | 1,504.0    | 1,263.0       | 981.8        | 1,101.8      | 1,161.0 | 1,201.2 | 1,190.3 | 1,215.3 |
| 80+ years  | 4,192.9    | 3,296.9       | 2,936.3      | 3,240.1      | 3,014.1 | 3,726.8 | 2,877.6 | 3,371.1 |
| <b>Hospitalizations- Rate per 100,000<sup>a</sup></b>            |            |               |              |              |         |         |         |         |
| <5 years   | 10.8       | 19.8          | 11.0         | 8.3          | 12.5    | 9.5     | 14.2    | 11.8    |
| 5-14 years   | 15.9       | 15.6          | 16.0         | 10.8         | 17.1    | 8.2     | 23.5    | 14.9    |
| 15-24 years  | 9.9        | 9.8           | 9.6          | 10.6         | 10.1    | 12.3    | 17.6    | 11.1    |
| 25-49 years  | 18.8       | 23.1          | 13.2         | 13.9         | 12.0    | 16.8    | 26.1    | 16.1    |
| 50-64 years  | 71.4       | 79.3          | 59.0         | 49.9         | 58.4    | 57.4    | 96.9    | 64.5    |
| 65-79 years  | 327.0      | 265.9         | 235.6        | 234.2        | 208.3   | 224.1   | 281.7   | 252.0   |
| 80+ years  | 1,465.2    | 1,033.1       | 1,252.1      | 1,185.0      | 975.7   | 1,082.3 | 1,214.6 | 1,163.0 |

a. Age-specific rate per 100,000 population. Notes: Region of residence unknown/outside of Ontario for 1,445 emergency department visits and 113 hospitalizations.

Regional variations were observed for rates of slips and trips on the same level. For emergency department visits, the highest rate was seen in the South West region and the lowest rate was observed in the Central West (Table 1). In contrast, for hospitalizations, the North region had the highest rate, followed closely by the South West region, and the Toronto region had the lowest rate. In all regions, the highest rates were seen among those 80 years of age and older (Table 3).

## Discussion

This Compass highlights patterns of falls due to slips and trips on the same level for emergency department visits and hospitalizations. Slips and trips on the same level have been identified as a leading cause of injury in past Ontario Injury Compass issues (i.e., Injuries among Children, Youth, and Seniors) and in an Ontario report of injuries among seniors.<sup>1</sup> Refer to past issues of the Ontario Injury Compass for other fall-related topics. Past issues are available at: [www.OnInjuryResources.ca](http://www.OnInjuryResources.ca). While slips and trips are a common cause of falls, there is a lack of provincial or national research specifically related to this topic.

Slips and trips are common among Ontarians of all ages and can happen anywhere (e.g., in the home, at work, or outdoors). This analysis includes emergency department visits and hospitalizations. There are likely thousands of other falls that go unreported or where people seek medical attention at after-hour clinics or from their family physician.

Slips happen when there is insufficient friction or traction between a foot and a surface.<sup>2</sup> Some causes of slips are: loose or unanchored rugs, wet or oily surfaces, and changes in the texture or traction of flooring or other walking surfaces. In contrast, trips occur when a foot makes contact with an object and causes a loss of balance. Some causes of tripping are: clutter, uncovered cables, poor lighting, and uneven thresholds or walking surfaces.<sup>2</sup>

## References

1. Ontario Injury Prevention Resource Centre. *Injuries among Seniors in Ontario: A Descriptive Analysis of Emergency Department and Hospitalization Data*. Toronto: Ontario Injury Prevention Resource Centre, 2007.
2. Canadian Centre for Occupational Health and Safety. Available at: [http://www.ccohs.ca/oshanswers/safety\\_haz/falls.html](http://www.ccohs.ca/oshanswers/safety_haz/falls.html)

## Managing the risk

When you fall, you lose your balance and footing and there's no place to go but down. But slips and trips can be prevented by recognizing and managing the risks. Here are some tips.

- ❖ Check your home for fall hazards. Review features in your home and make modifications, such as improving lighting, installing grab bars in bath tubs, and removing scatter rugs or cables that cross walkways. Clean up spills immediately.
- ❖ Use alcohol and medications wisely. Some medications including "over the counter" ones can make you drowsy or dizzy. Check with your pharmacist or doctor.
- ❖ Wear appropriate non-slip footwear.
- ❖ Have regular health check-ups. For example, changes in vision and hearing could lead to a fall.
- ❖ Take your time. Adjust your stride to a pace that is suitable for the walking surface and the tasks you are doing.
- ❖ Supervise young children.

### For Further Information

Ontario Injury Prevention Resource Centre  
[www.OnInjuryResources.ca](http://www.OnInjuryResources.ca)  
Ontario Neurotrauma Foundation  
[www.onf.org](http://www.onf.org)  
Safe Kids Canada  
[www.safekidscanada.ca](http://www.safekidscanada.ca)  
SMARTRISK  
[www.smartrisk.ca](http://www.smartrisk.ca)  
ThinkFirst Foundation of Canada  
[www.thinkfirst.ca](http://www.thinkfirst.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 2005/06 fiscal year. Falls on same level from slipping, tripping, and stumbling were classified using code W01 from the International Classification of Diseases, 10th revision (ICD-10) classification system. Code W00 (Fall on same level involving ice and snow) was not included in this analysis. A separate issue for code W00 will be completed. 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 are not included in this analysis.

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