

# Pedestrian Injuries

Each day in Ontario, three pedestrians are hospitalized after being injured. Ontarians 10-19 years and 60 years and older experience some of the highest rates of injury.

## Results

In Ontario, there were 1,182 pedestrian injury hospitalizations during the 2002/03 fiscal year. Males accounted for 56% of pedestrian injury hospitalizations. Among both sexes, these injuries occurred among people of all ages (Figure 1).

Pedestrians were most commonly injured in a collision with a car, pick-up truck, or van (80%), followed by a collision with a heavy transport vehicle or bus (3%) (Table 1).

A lower limb injury was the diagnosis most responsible for hospitalization in 42% of cases, followed by an injury to the head or neck (26%) (Figure 2). In particular, fractures to the lower leg or ankle and intracranial injuries were most common.

The 1,128 cases accounted for more than 12,000 days in an acute care hospital, with an average length of stay of 10.4 days. Some of the longest lengths of hospital stay were observed for pedestrians involved in a collision with a railway train or vehicle (average of 16.8 acute care hospital days) or a collision with a heavy transport vehicle or bus (average of 13.1 acute care hospital days).

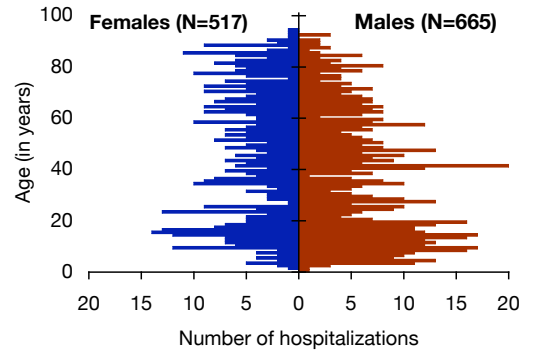
About 71% of cases were discharged home and 18% were transferred to another inpatient facility (e.g., rehabilitation centre). Nearly 5% of persons died during their hospital stay.

Pedestrian injury hospitalizations were most frequent in November and the lowest number of injury hospitalizations were observed in June (Figure 3).

In Ontario, the age-standardized hospitalization rate for pedestrian injuries was 10.1 per 100,000 population (Table 2). By region, the highest number and rate was observed in Toronto. The lowest number of pedestrian-related injury hospitalizations was seen in the North and the lowest rates were observed in the Central East, Central West, and East regions.

In Ontario, adults 60 years of age or older had the highest number and rate of pedestrian injury hospitalizations. Regional variations in injury patterns were observed by age (Table 3). In general, the numbers and rates of pedestrian injury hospitalizations were highest among the 10-19 year and 60+ age groups.

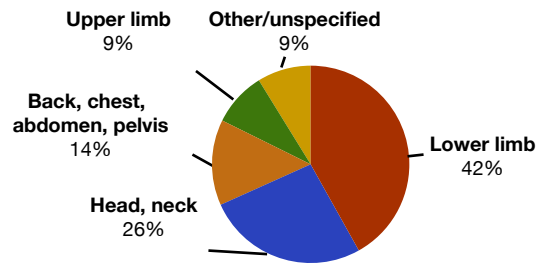
**FIGURE 1. Pedestrian injury hospitalizations by age (Ontario, 2002/2003)**



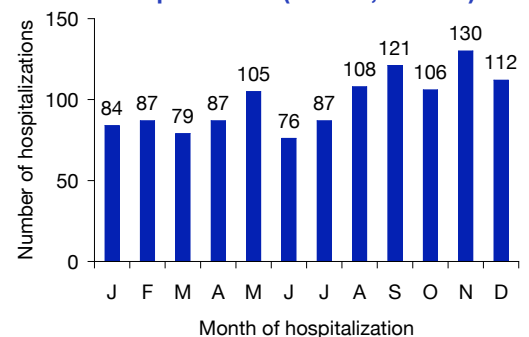
**TABLE 1. Type of pedestrian injury hospitalization (Ontario, 2002/03)**

Pedestrian injured in collision with...	Number	%
Car, pick-up truck, van	951	80
Heavy transport vehicle or bus	39	3
Two- or three- wheeled motor vehicle	19	2
Pedal cycle	18	2
Railway train or vehicle	14	1
Other/unspecified	141	12
<b>Total</b>	<b>1,182</b>	<b>100</b>

**FIGURE 2. Site of pedestrian injury hospitalization (Most responsible diagnosis, Ontario, 2002/03)**



**FIGURE 3. Month of pedestrian injury hospitalization (Ontario, 2002/03)**



**TABLE 2. Regional comparison of pedestrian injury hospitalizations (Ontario, 2002/03)**

	South West	Central South	Central West	Central East	Toronto	East	North	Ontario
Number	170	130	140	133	361	123	95	1,182
Rate per 100,000 <sup>a</sup>	10.9	10.9	7.1	7.0	14.1	7.7	10.1	10.1
Average age (in years)	41	40	38	42	44	40	38	41
% male	61	54	59	60	54	47	63	56

a. Age-standardized rate per 100,000 population. Note: Region of residence unknown/outside of Ontario for 30 hospitalizations.

## Ontario Injury Compass

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**TABLE 3. Regional comparison of pedestrian injury hospitalizations by age group (Ontario, 2002/03)**

	South West	Central South	Central West	Central East	Toronto	East	North	Ontario
<b>Rate per 100,000 population<sup>a</sup> (Number)</b>								
<10 years	10.1 (20)	7.6 (11)	4.8 (14)	5.1 (13)	13.3 (41)	6.7 (13)	10.0 (11)	8.4 (126)
10-19 years	12.2 (26)	20.6 (32)	12.2 (34)	9.3 (25)	18.7 (52)	11.3 (23)	17.3 (22)	14.4 (219)
20-29 years	11.4 (23)	6.1 (9)	5.9 (17)	4.9 (11)	9.2 (36)	6.8 (14)	4.4 (5)	7.8 (123)
30-39 years	5.6 (13)	9.5 (17)	3.3 (12)	3.8 (12)	7.0 (33)	4.3 (11)	7.4 (10)	5.7 (111)
40-49 years	11.5 (26)	6.9 (12)	4.1 (13)	7.2 (22)	11.1 (41)	5.7 (14)	11.6 (16)	8.3 (147)
50-59 years	8.3 (14)	11.5 (15)	8.6 (19)	5.8 (12)	13.4 (36)	8.8 (16)	13.4 (14)	10.0 (128)
60+ years	17.6 (48)	15.4 (34)	11.7 (31)	13.3 (38)	27.7 (122)	11.9 (32)	10.4 (17)	17.1 (328)

a. Age-specific rate per 100,000 population. Note: Region of residence unknown/outside of Ontario for 30 hospitalizations.

## Discussion

This Compass highlights patterns of pedestrian-related injury hospitalizations in Ontario. There were 1,182 pedestrians hospitalized in the 2002/03 fiscal year. A Canadian analysis of pedestrian-related injury hospitalizations reported similar findings.<sup>1</sup> Some of the highest rates of injury were observed among the 10-19 year and 60+ year age groups. With Ontario's aging population, pedestrian injuries among seniors are an important consideration.<sup>2</sup>

It is important to consider that hospitalizations represent only one aspect of the issue. According to the Ontario Road Safety Annual Report, 120 pedestrians were killed and another 4,758 were injured in 2003.<sup>2</sup> There was an 8% decline in the number of pedestrian deaths in the province from 2002 to 2003; however, pedestrians still accounted for 14% of motor vehicle fatalities.<sup>2</sup>

Pedestrian injuries were more common in urban areas.<sup>2,3</sup> About 50% of deaths and 64% of injuries occurred at an intersection or pedestrian crossing.<sup>2</sup> Traffic patterns also affect risks for injury. Studies in Hamilton, Ontario, noted that left-turning vehicles posed higher risks for pedestrians and that children are at higher risk for pedestrian injuries on one-way compared to two-way streets.<sup>4-5</sup>

Other factors such as attention to surroundings, alcohol, and visibility may play a role in pedestrian injuries. About 14% of injured pedestrians were documented as being inattentive.<sup>2</sup> In a Canadian study of pedestrian injuries and deaths, blood alcohol concentration was tested in 247 fatally injured pedestrians.<sup>3</sup> Of those tested, more than 40% had been drinking and the majority of these people had a Blood Alcohol Concentration above 80 mg%.<sup>3</sup> Time of day has been suggested as a factor. Fatal collisions were over-represented at night compared to personal injury collisions.<sup>6</sup>

## References

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## Managing the risk

Pedestrian injuries affect people of all ages. Here are some tips for how to manage the risks:

- ❖ Walk on the sidewalk. If you have to walk on a road that does not have a sidewalk, walk facing traffic.
- ❖ Cross at intersections or crosswalks and obey traffic signals. Look left, right, and then left again for traffic before crossing. Watch for traffic turning at intersections and leaving driveways.
- ❖ See and be seen. Make eye contact with drivers when crossing busy streets. Wear bright and light colours or reflective clothing to be seen.
- ❖ Supervise children when they are near traffic as it is difficult to judge vehicle distances and speeds. Teach and reinforce proper techniques for crossing the road and walking near traffic.

Examples of ways to prevent these injuries include:

- ❖ Area-wide traffic calming, such as slowing down and redistributing traffic or changes to the road environment
- ❖ Safety education for pedestrians
- ❖ Increasing visibility of pedestrians, such as reflective clothing or flashing lights

## For Further Information

Ontario Ministry of Transportation- Quick notes on...pedestrian safety  
[www.mto.gov.on.ca/english/safety/quicknotes/pedestrian.htm](http://www.mto.gov.on.ca/english/safety/quicknotes/pedestrian.htm)

Cochrane Injuries Group  
[www.cochrane-injuries.lshtm.ac.uk/](http://www.cochrane-injuries.lshtm.ac.uk/)

SMARTRISK Catalogue of Best Practices  
[www.smartrisk.ca/ListingSections.aspx?dd=4&sd=207](http://www.smartrisk.ca/ListingSections.aspx?dd=4&sd=207)

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Turner C, McClure R, Nixon J, Spinks A. Community-based programmes to prevent pedestrian injuries in children 0-14 years: a systematic review. *Inj Control Saf Promot* 2004;11:231-7.

## Methods

Hospitalization data included acute care hospitalizations for pedestrian injuries in Ontario from the 2002/03 fiscal year. Data were obtained from the Discharge Abstract Database at the Canadian Institute for Health Information (CIHI). Pedestrian injuries were classified according to the International Classification of Diseases, 10th revision (ICD-10) using codes V01-V09. Regions were defined according to place of residence using the Ontario Ministry of Health Region Codes.