



ULTRAMANSKI SHUTTERSTOCK

Injury Insight

Pedestrian Injury from Motor Vehicle Crashes in BC

Nearly 1 in 5 people killed in car crashes every year in British Columbia (BC) are pedestrians, and most of these deaths are preventable, according to the Insurance Corporation of British Columbia (ICBC).⁷ In 2013, there were approximately 2,200 motor vehicle crashes (MVC) involving pedestrians across the province, resulting in 2,300 pedestrian injuries and 52 pedestrian fatalities.⁴

A recent Vancouver study of pedestrian injury found that:⁸

- Pedestrian collisions are more frequent on weekdays than weekends.
- The highest proportion of pedestrian collisions occurs during the peak afternoon rush hour period from 3:00 pm to 6:00 pm.
- Although late night/early morning pedestrian collisions (midnight to 6:00 am) are relatively infrequent, they have almost double the risk of fatality.
- Nearly half of all pedestrian collisions occur between November and February, with the fewest occurring in August. This can be attributed to shorter days and longer nights, influenced by daylight savings.¹⁵
- Young adults aged 20 to 29 are involved in more collisions as pedestrians than other age groups.
- Pedestrian collisions are equally distributed between males and females; however, 26.2% of female pedestrian collisions occur among ages 20 to 29, as compared to 22.7% of male pedestrian collisions occurring within the same age group.
- Males account for 54.9% of all pedestrian fatalities.
- Approximately 75% of all pedestrian collisions happen at intersections.

DEFINITIONS



Pedestrian: Any person involved in an incident who, at the time of the incident, was not riding in or on a motor vehicle. This includes: exteriorly making adjustments to a vehicle; being on foot; or using a pedestrian mode of transportation such as a baby stroller, walker, wheelchair, roller skates, scooter, skateboard, skis, or sled.¹

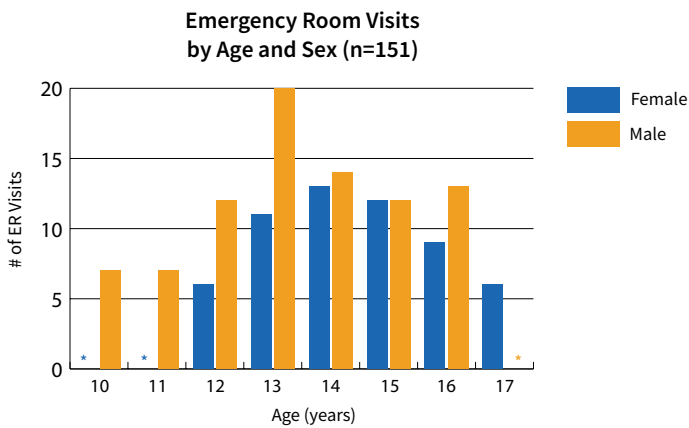
Distraction: Anything that prevents an individual from giving their full attention to something or someone else. Types of distraction that may inhibit pedestrian awareness are: cell phone conversations, texting, eating on the go, talking with friends, looking at the time, being lost in thought, reading a book or newspaper, listening to music, and waving away an insect.^{10,5}

- The top three situations resulting in pedestrian-involved MVC's are:
 - Vehicle turns left while the pedestrian crosses with the right-of-way at a signalized intersection (25.6% of known collision types).
 - Vehicle turns right while the pedestrian crosses with the right-of-way at a signalized intersection (17.1%).
 - Pedestrian hit while crossing mid-block without a traffic control, or jaywalking (11.5%).



Late night collisions

are nearly **2x** as likely to **lead to a fatality**



Data source: BC Children's Hospital, Canadian Hospitals Injury Reporting and Prevention Program (CHIRPP), 2009-2014.
 Note: * indicates fewer than five cases.

Data from the Canadian Hospitals Injury Reporting and Prevention Program

Data from the Canadian Hospitals Injury Reporting and Prevention Program (CHIRPP) collected at BC Children's Hospital captured 151 emergency department visits due to pedestrian injury from 2009 to 2014 among youth aged 10 to 17 years. Males were more frequently involved as a pedestrian in a pedestrian-MVC, and the highest number of visits occurred among 13-year-olds. (FIGURE 1)

Top contributing factors for drivers in crashes involving pedestrians are distraction, failure to yield right of way, and weather



A subset of 57 of these pedestrian emergency department visits identified information about the injury event. The most commonly reported circumstance during which a pedestrian was injured was crossing within a crosswalk. This may be due to the concept of assumed right-of-way and lack of attention to surroundings. (FIGURE 2)

Contributing Factors for Pedestrian Injury

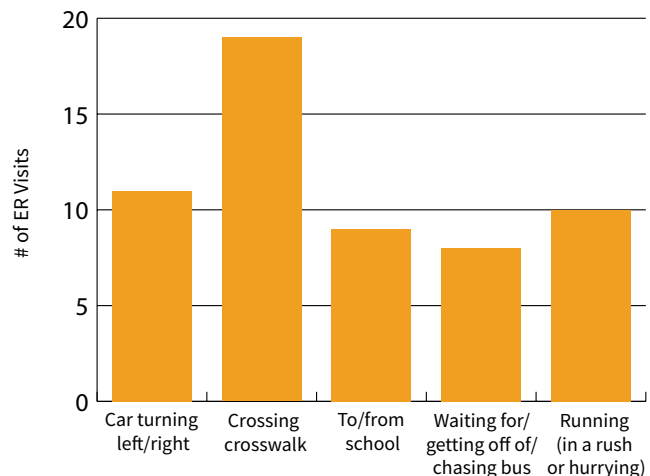
The leading contributing factors reported for drivers in crashes involving pedestrians are distraction, failure to yield the right of way, and weather.⁷

While distracted driving is a hot topic, emerging research is being done on pedestrian distraction and how it influences pedestrian-MVC rates. For the period of 2008 to 2012, the top contributing factor in police reports for MVCs with a pedestrian fatality was pedestrian error/confusion (31.0%). Pedestrian distraction, including texting or talking on a cell phone while crossing the street, has been found to increase the risk of pedestrian-involved MVCs.⁴

Studies have found that:

- Pedestrians who are texting or searching the web while crossing the street have a 3.9 times higher risk of exhibiting unsafe behaviours,² such as not looking left and right before crossing and missing safe opportunities to cross. They are also at higher risk of being hit or almost hit by oncoming vehicles.³
- Cell phone conversations increase distraction and risky behaviours among pedestrians, although the content of a conversation does not alter one's level of risky behaviour/distraction.¹²
- Pedestrians who obey traffic signals have a 2.8 times higher risk of not looking both ways before crossing.²
- Pedestrian countdown signals have an uncertain but contributory effect towards pedestrian/motor vehicle crashes.⁶ A 26% increase in the rate of pedestrian collisions has been found following the installation of pedestrian countdown signals.¹⁴ Crosswalks without countdown signals have experienced a 1.36% reduction in pedestrian injuries.⁶

FIGURE 2: Emergency Room Visits by Circumstance of Pedestrian Injury (n=57)



Data source: BC Children's Hospital, Canadian Hospitals Injury Reporting and Prevention Program (CHIRPP), 2009-2014, aged 10 to 17 years.

How to Be a Safe Pedestrian

- Stay alert and attentive; focus your full attention on what is happening around you.⁷
- Never assume you have the right of way as a pedestrian, even if the crosswalk signal is giving you the go-ahead.⁴
- Do not step into the path of a vehicle that cannot be reasonably be expected to stop in time.⁹
- Be sure to shoulder check left and right before crossing.⁵
- Always make eye contact with drivers. Never assume that a driver has seen you.⁷
- Cross streets within the painted crosswalk lines.⁴
- Make yourself more visible to drivers by wearing reflective clothing or gear.^{4,7}
- If you are using a mobile device, don't walk!⁵

Future Considerations

Given the uncertain but contributory effect of pedestrian countdown signals towards pedestrian-MVCs, further consideration should be given to the use of these devices. A more effective approach may be to implement the use of 'pedestrian scrambles' in intersections—a road feature that requires all drivers to yield/halt so that pedestrians may walk in any direction they please.



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LIMITATIONS:

CHIRPP data are not population-based, therefore rates were not calculated. Older youth may be underrepresented in the CHIRPP dataset as they are less likely to be brought to BC Children's Hospital Emergency Department than are younger ages. The CHIRPP dataset did not contain sufficient information on the injury event circumstances to support the literature in identifying contributing factors of pedestrian-MVCs, such as pedestrian distraction.

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