Distraction-Related Fatal Collisions | 2000-2020

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TRAFFIC INJURY RESEARCH FOUNDATION

Key Findings

- According to the **Traffic Injury Research Foundation's (TIRF) National Fatality Database**, the number of traffic fatalities in which at least one of the drivers involved was distracted decreased from 458 in 2000 to 310 in 2020. However, during this same period, the percentage of all distraction-related fatalities increased increased from 19.1% to 26.1%.
- Among drivers who were fatally injured between 2016 and 2020:
  - females (18.2%) were more likely to be distracted than males (15.5%);
  - younger drivers (23.1% of those aged 16-19) and older drivers (18.2% of those aged 65 and older) were more likely to be distracted than drivers of other ages;
  - those driving commercial vehicles (heavy trucks and tractor-trailers) were more likely to be distracted (23.9%) than drivers of other highway vehicles.
- A larger percentage of fatal crashes involving distraction occurred:
  - during the workday (9 am to 6 pm) than at other times of the day;
  - on Tuesdays (28.0%) as opposed to Sundays (20.3%);
  - in vehicles with five or more occupants (32.9%).

Introduction

In recent years, distracted driving has been increasingly prioritized in road safety planning in Canada. Some Canadian jurisdictions have reported that distracted driving fatalities are more common than impaired driving fatalities, although some of this growth may be due to improvements in data collection (Robertson et al. 2017).

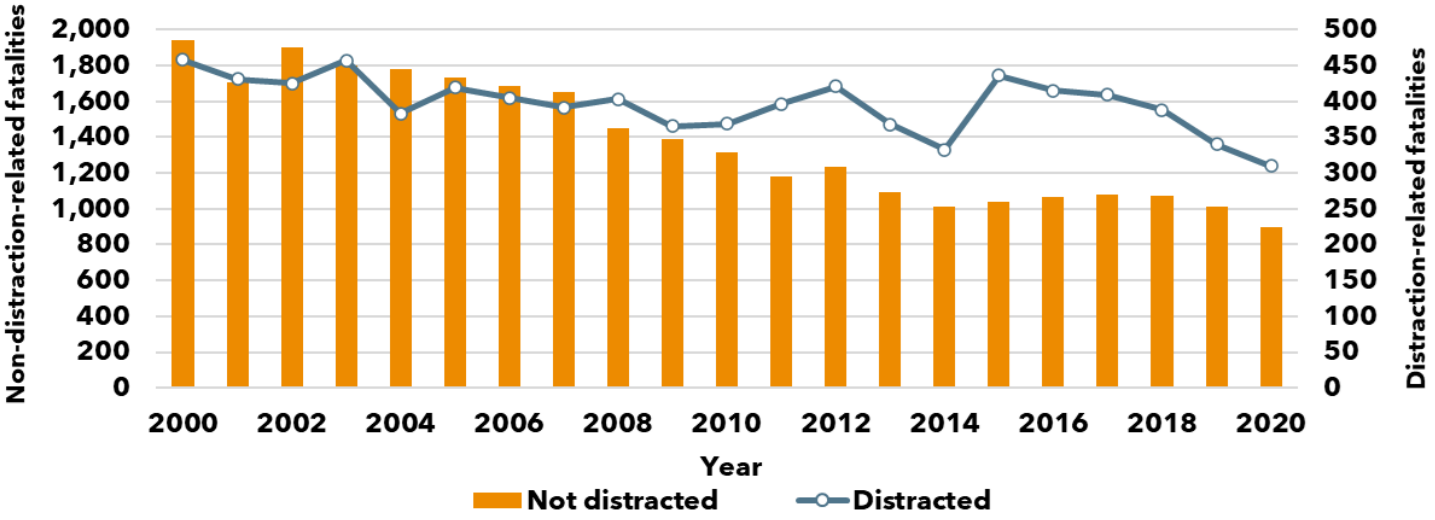
This fact sheet, sponsored by **Desjardins**, examines the magnitude and trends regarding the role of driver distraction in motor vehicle fatalities in Canada from 2000 to 2020. Fatalities included in this analysis are those that occur on public roadways where the victim dies within 30 days of the collision and where at least one of the vehicles involved was a principal highway vehicle (i.e., automobile, van, truck, motorcycle, bus). Data from **TIRF's National Fatality Database** were used to prepare this fact sheet which explores trends in the role of driver distraction among fatally injured victims, and the characteristics of fatally injured distracted drivers. Other topics that are examined include characteristics of distraction-related crashes resulting in fatalities such as time of day, day of week, the number of vehicle occupants, single versus multiple vehicle crashes, and the type of vehicle or object struck by the fatally injured victim's vehicle.

A fatality is defined as distraction-related if at least one of the drivers in the crash (either dying or surviving) was considered to be distracted. Distraction can be based on police-reported collision data or coroner/medical examiner narrative information. A fatally injured distracted driver is a person who died in a collision and was considered to have been distracted just prior to, or during the collision. In this fact sheet, TIRF's reporting on the role of distraction refers to its presence and does not suggest distraction was the primary or sole cause of the collision. Distracted driving has routinely been associated with phoning or texting. However, other behaviours or events that distract a person from the driving task include being engaged with entertainment or communication devices, engaging with passengers in the vehicle, or eating, smoking or personal grooming while driving. It should be noted that an investigating officer may code a driver's condition as 'distracted, inattentive'. This suggests there was a general lack of attention exhibited by the driver but there was no specific behaviour identified by the officer.

Distracted driving trends over time among all fatally injured victims

The number of distraction and non-distraction-related fatalities in Canada between 2000 and 2020 is shown in Figure 1. Non-distraction-related fatalities are represented by the solid line and plotted against the axis on the left while distraction-related fatalities are represented by the vertical bars and plotted against the axis on the right. During this 21-year period, the number of distraction-related fatalities gradually decreased by 32.3% from 458 in 2000 to a low of 310 in 2020. Meanwhile, the number of non-distraction-related fatalities

Figure 1 | Number of distraction and non-distraction-related fatalities: Canada, 2000-2020



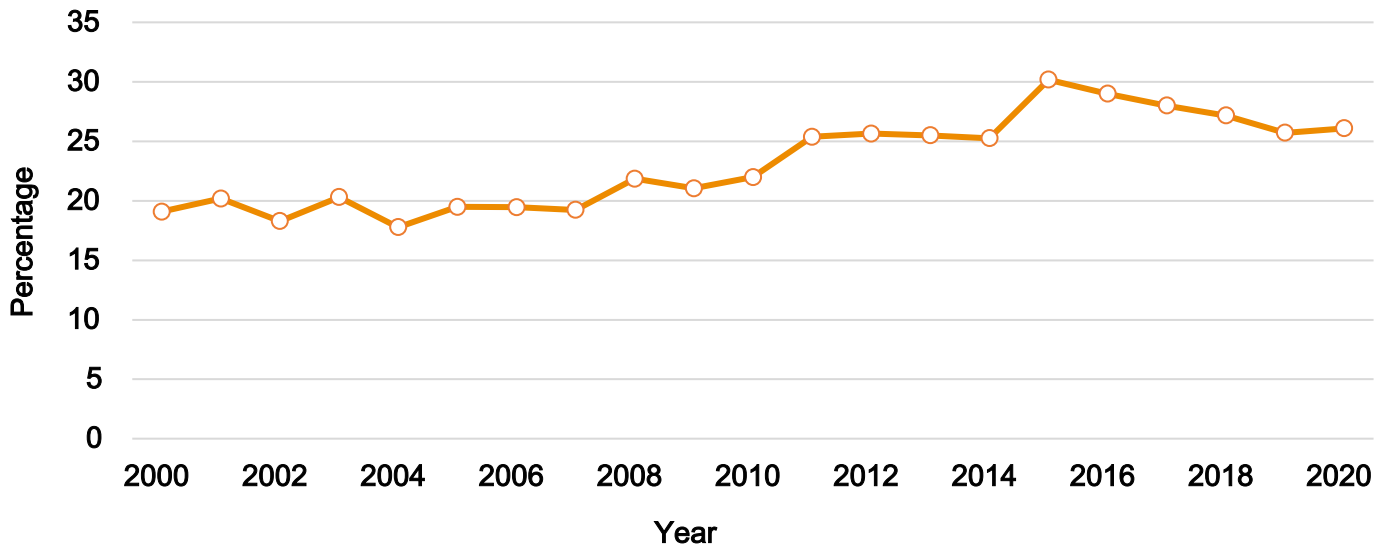
decreased by 53.8% from 1,942 in 2000 to 898 in 2020. Despite progress made in recent years, distracted driving is a persistent problem, especially because the number of distraction-related fatalities has not decreased at the same pace as the number of non-distraction-related fatalities.

The percentage of motor vehicle fatalities from 2000 to 2020 that involved a distracted driver, regardless of whether it was the distracted driver who died in the crash, is shown in Figure 2. In 2000, 19.1% of fatalities involved at least one distracted driver. This percentage peaked in 2015 when 30.2% of fatalities were distraction-related and gradually decreased to 26.1% in 2020.

TIRF's National Fatality Database includes the following categories of distraction-related fatalities. These include cases in which:

- The fatally injured victim was the distracted driver ("fatally injured distracted driver");
- The fatally injured victim was the distracted pedestrian ("fatally injured distracted pedestrian");
- The fatally injured victim was not the distracted driver ("other victim"). These victims include non-distracted drivers colliding with a vehicle driven by a distracted driver, passengers dying in a crash where at least one of the drivers was distracted, or pedestrians who were struck by a distracted driver; or,

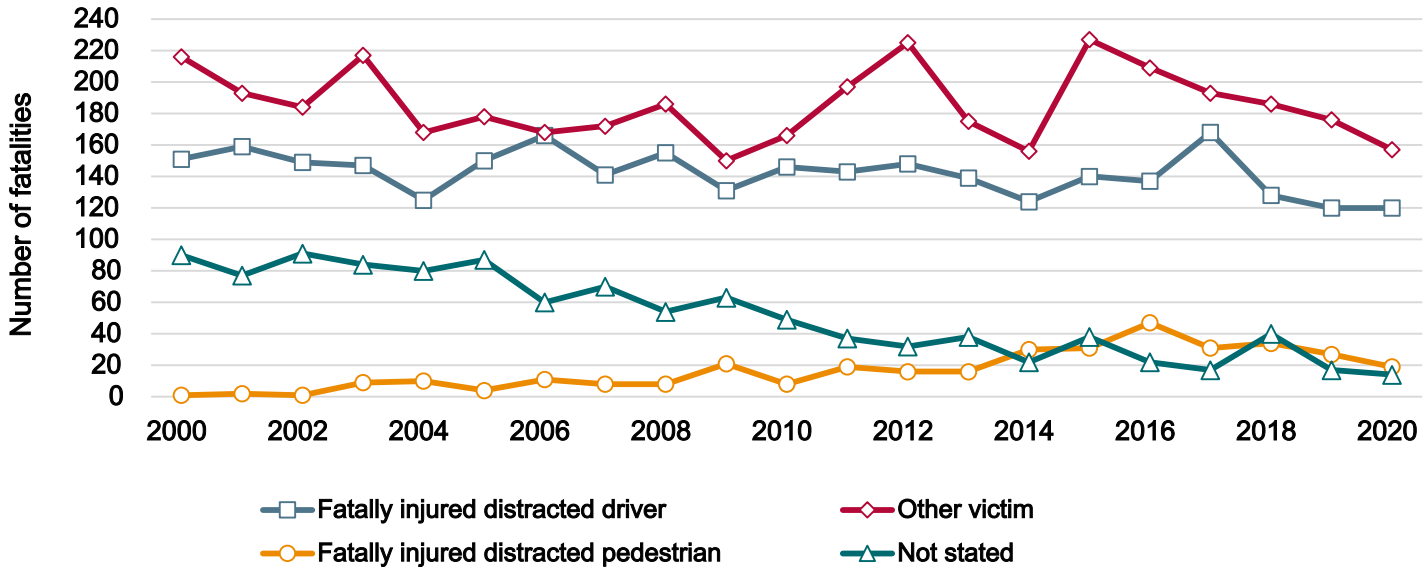
Figure 2 | Percentage of fatalities that involved distraction: Canada, 2000-2020



- It cannot be determined which driver was distracted or which person in the vehicle was the distracted driver ("not stated").

The number of distraction-related fatalities from 2000 to 2020 according to these categories is shown in Figure 3. Among fatalities in which the fatally injured driver was distracted, there was a gradual increase from 151 in 2000 to a high of 168 in 2017, before a decrease to a low of 120 in 2020. For almost the entire 21-year period, most fatalities (other victim) occurred in crashes in which the surviving driver was distracted. To illustrate, in 2000, 216 distraction-related fatalities were due to the other surviving driver, decreasing to 150 in 2009, peaking at 227 in 2015, before decreasing to 157 in 2020. The number of fatally injured pedestrians considered to be distracted rose from one in 2000 to 47 in 2016, before decreasing to 19 in 2020. It should be considered that more complete data on pedestrian distraction has been available since 2010. The number of fatalities in which it was not determined which driver was distracted generally decreased from 90 in 2000 to only 14 in 2020. This could be due, in part, to more complete data that are available on the role of distraction by specific drivers in more recent years.

Figure 3 | Number of fatalities by category of distraction: Canada, 2000-2020



Characteristics of fatally injured distracted victims

This section examines the demographic characteristics of fatally injured victims to gauge any variation in terms of driver distraction based on driver sex, age group, and vehicle type. The results are based on data from five years (2016 to 2020) for fatally injured victims in highway collisions. On average, 16.1% of fatally injured drivers were distracted during this period. Figure 4 shows that 15.5% of fatally injured male drivers were distracted compared to 18.2% of fatally injured female drivers.

The percentage of fatally injured drivers in each age group who were distracted is shown in Figure 5. The seven age groups are: 16-19, 20-24, 25-34, 35-44, 45-54, 55-64, and 65 and older. Drivers aged 16-19 (23.1%) and 65 and older (18.2%) were the most likely to have been distracted. Conversely, 13.5% of fatally injured drivers aged 35 to 44 were distracted.

Drivers aged 16-19 years and 65 and older were the most likely to have been distracted.

Figure 4 | Percentage of fatally injured distracted drivers by sex: Canada, 2016-2020

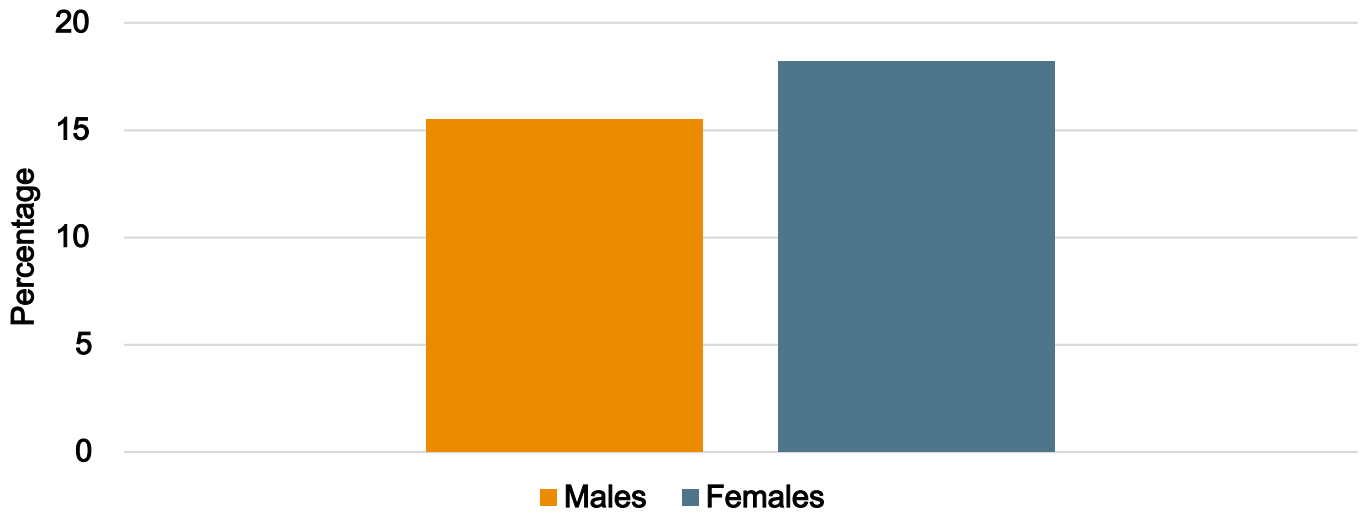
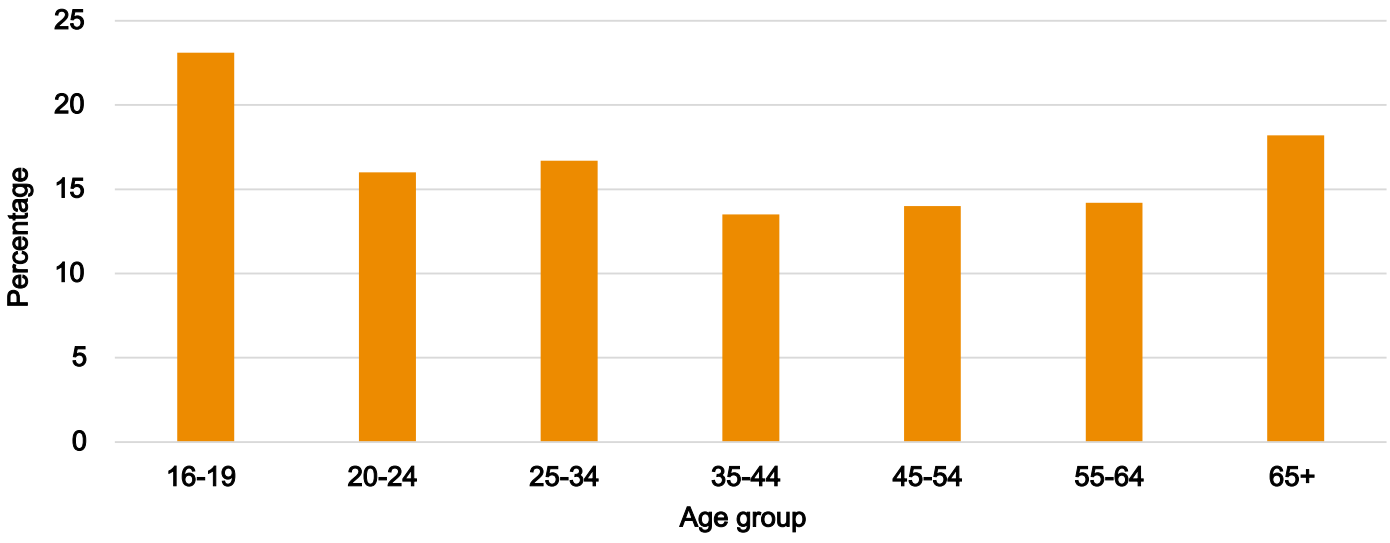


Figure 5 | Percentage of fatally injured distracted drivers by age group: Canada, 2016-2020



The prevalence of distraction among fatally injured drivers based on the type of vehicle that was driven is shown in Figure 6. Fatally injured drivers of commercial vehicles (heavy trucks and tractor-trailers) were almost twice as likely to have been distracted as motorcyclists (23.9% vs. 12.2%).

The percentage of fatally injured pedestrians who were distracted on the basis of sex and age group is shown in Figure 7. The seven age groups are: 16-19, 20-24, 25-34, 35-44, 45-54, 55-64, and 65 and older. Overall, during the 2016-2020 period, 12.3% of fatally injured pedestrians were distracted. Fatally injured male pedestrians were only slightly more likely to be distracted than female pedestrians (12.7% vs. 12.2%). Fatally injured pedestrians aged 55-64 (16.9%) were the most likely to have been distracted. Conversely, 7.1% of fatally injured pedestrians aged 45 to 54 were distracted.

Figure 6 | Percentage of fatally injured distracted drivers by vehicle type: Canada, 2016-2020

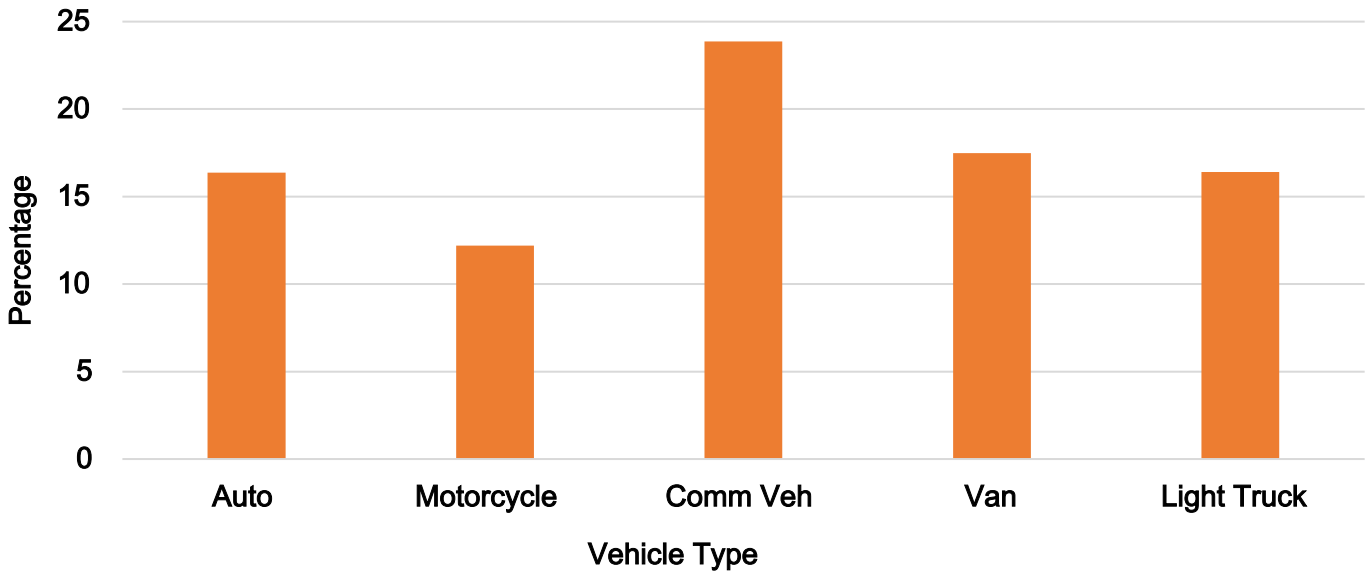
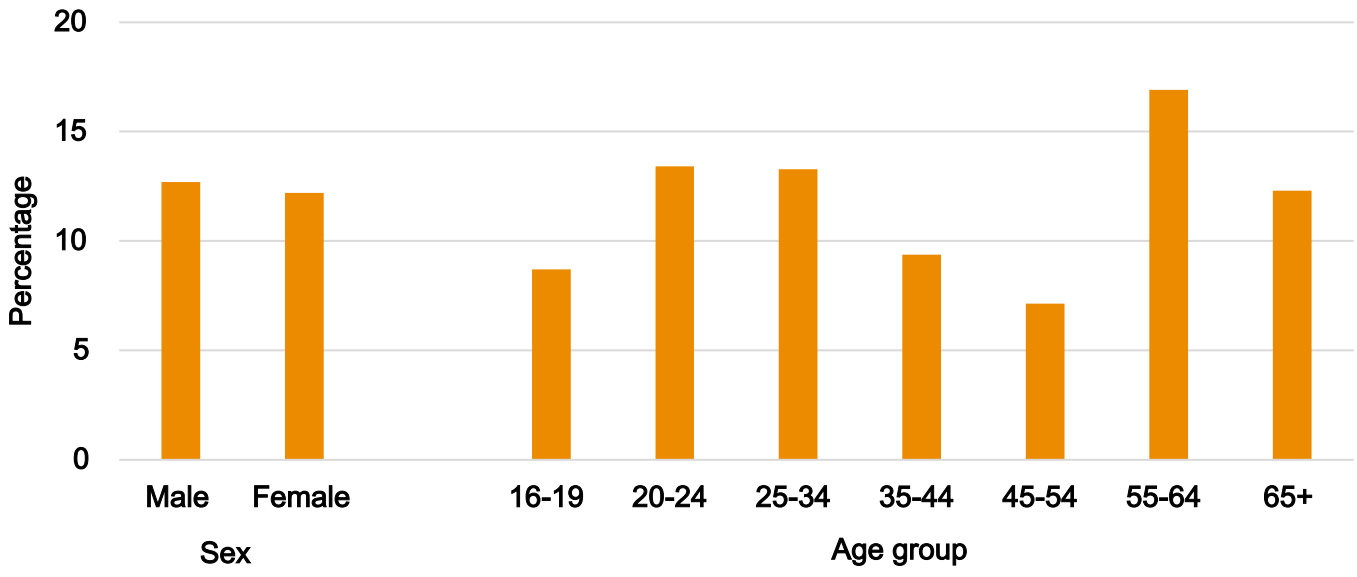


Figure 7 | Percentage of fatally injured distracted pedestrians by sex and age group: Canada, 2016-2020



Collision characteristics of distraction-related fatalities

This section examines the prevalence of distraction-related fatalities based on various crash characteristics. These characteristics include time of day the crash occurred, day of week, number of vehicle occupants, single vs. multiple vehicle crashes, and the vehicle/object struck in fatal collisions during the same time period (2016-2020).

The percentage of distraction-related fatalities by time of day is presented in Figure 8. The time of day for distraction-related fatalities has been regrouped into three-hour increments (e.g., midnight to 2:59 am). The lowest percentage of distraction-related fatalities resulted from crashes which occurred during the time increments between midnight and 6:00 am. A larger percentage of distraction-related fatalities occurred throughout the workday. The time periods when the largest percentage of persons died in distraction-related collisions were between 9:00 am and 11:59 am (32.6%) and from 3:00 pm to 5:59 pm (32.2%). A similar percentage of fatalities that were distraction-related occurred between noon and 2:59 pm (30.6 %). There was a smaller percentage of distraction-related fatalities before 9:00 am and after 6:00 pm.

Figure 8 | Percentage of fatalities that were distraction-related by time of day: Canada, 2016-2020

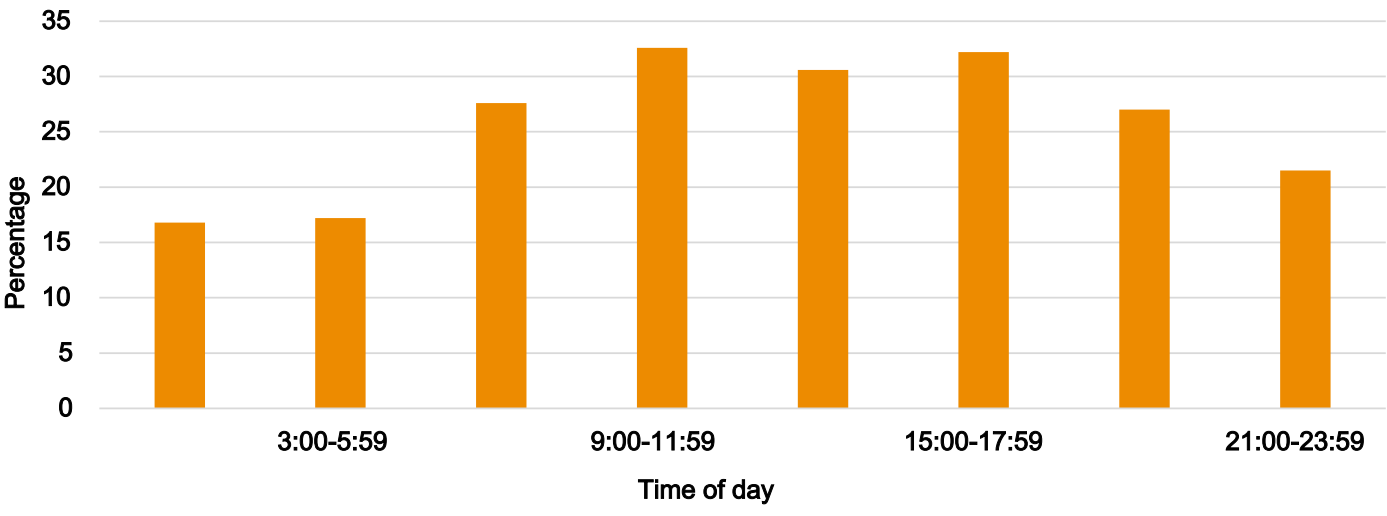


Figure 9 shows the percentage of fatalities that were distraction-related according to the day of the week when the collision occurred. Distraction-related fatalities were most common in collisions occurring on Tuesdays (30.6%). On the other hand, 21.8% of fatalities were distraction-related on Sundays.

The percentage of distraction-related driver and passenger fatalities by the number of vehicle occupants is presented in Figure 10. Fatally injured victims in a vehicle with five or more occupants (33.3%) were the most likely to be involved in a distraction-related crash. The lowest incidence of distraction-related crashes was for fatally injured victims in a vehicle with three occupants (22.5%).

Fatally injured victims in a vehicle with five or more occupants were the most likely to be involved in a distraction-related crash.

Figure 9 | Percentage of fatalities that were distraction-related by day of week: Canada, 2016-2020

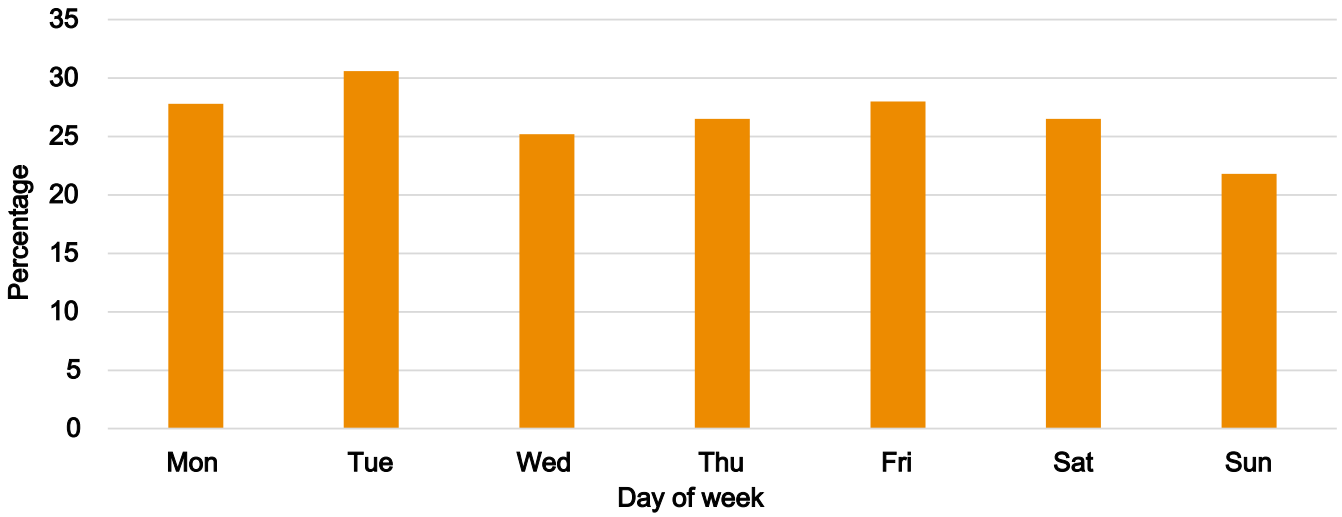
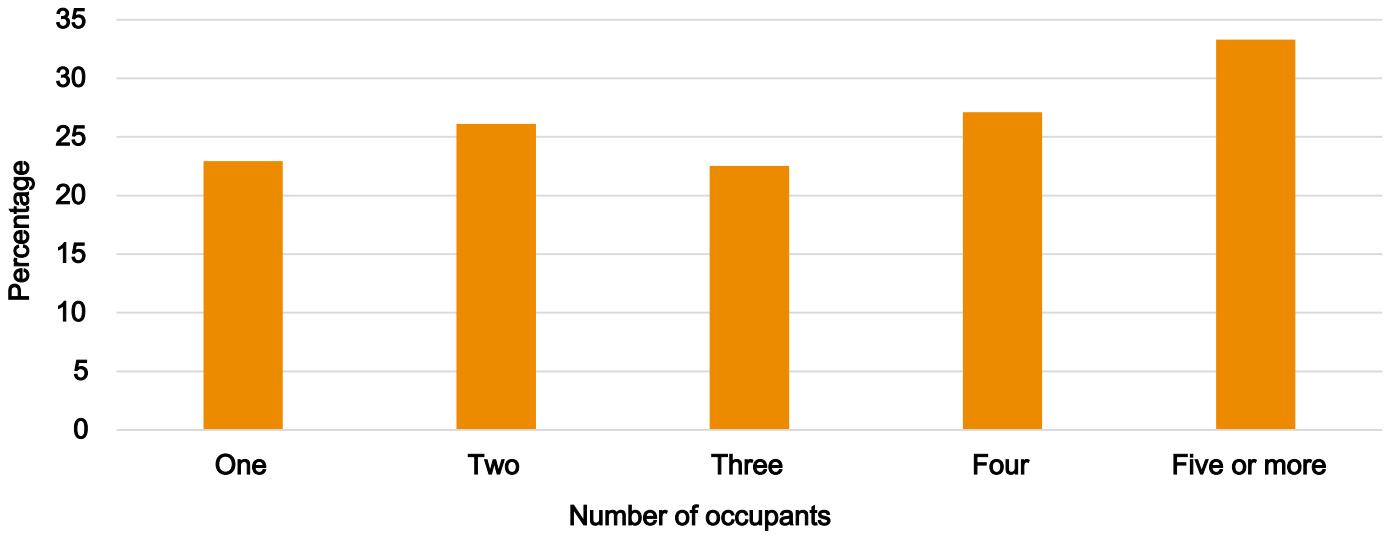


Figure 10 | Percentage of fatalities that were distraction-related by number of occupants: Canada, 2016-2020



In Figure 11, the percentage of fatalities that were distraction-related is compared between single-vehicle crashes and multiple-vehicle crashes. A larger percentage of persons died in a distraction-related crash involving multiple vehicles (31.1%) as opposed to those dying in single-vehicle crashes (22.3%).

Some vehicles are more conspicuous than others due to 1) their size or 2) their colour and presence of flashing lights. The prevalence of distraction in crashes where the fatally injured victim's vehicle collided with a bus, train, heavy truck (e.g., dump truck), tractor-trailer or emergency vehicle is shown in Figure 12. Fatally injured victims in this figure include drivers and passengers in multiple-vehicle crashes. Almost three in five (56.6%) persons dying in a crash involving a train were in a distracted-related crash. By comparison, 21.4% of persons dying in a crash involving an emergency vehicle died in a distraction-related crash. The percentage for emergency vehicles should be treated with caution due to small number of persons who died in crashes involving this type of vehicle.

Figure 11 | Percentage of fatalities that were distraction-related in single- vs. multiple-vehicle crashes: Canada, 2016-2020

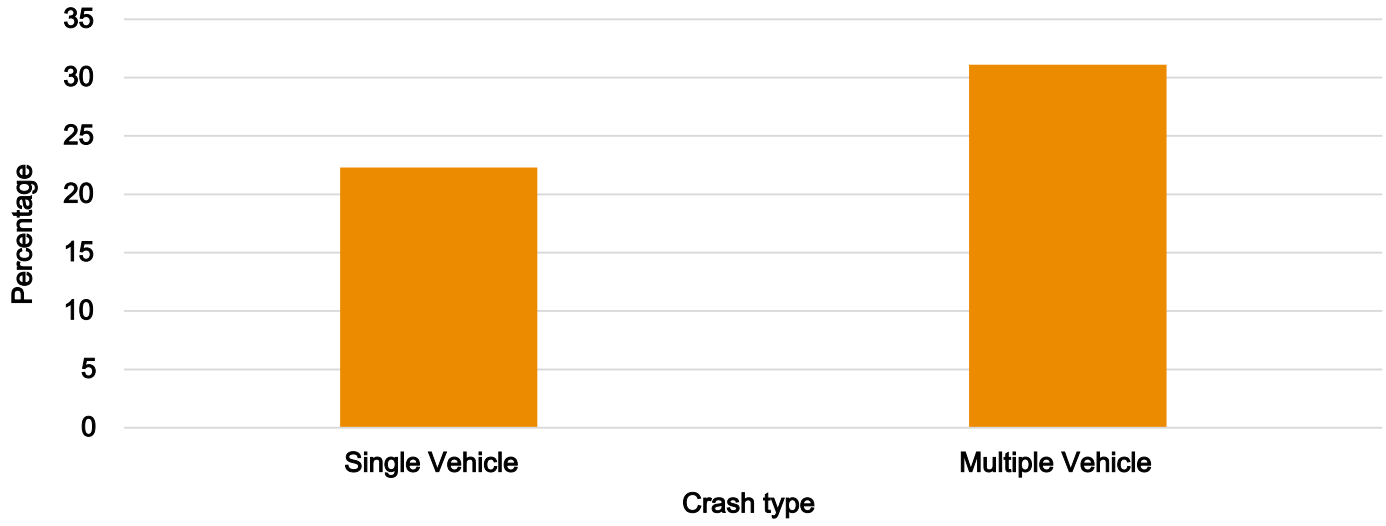
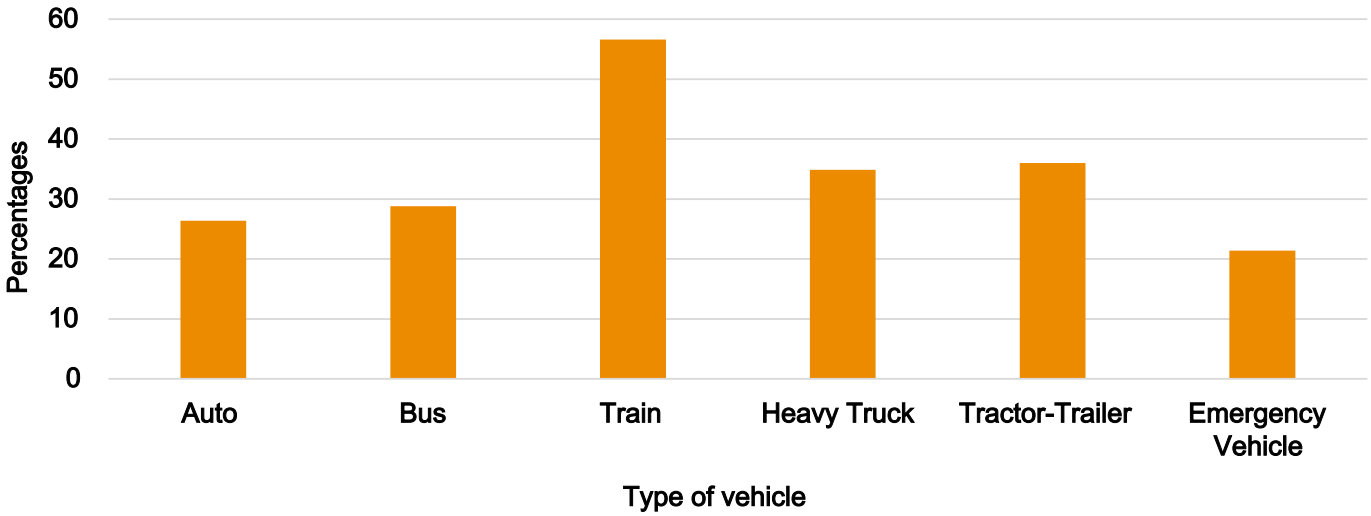


Figure 12 | Percentage of fatalities in multiple-vehicle crashes that were distraction-related by type of vehicle collided with: Canada, 2016-2020



Conclusions

The number of distraction-related fatalities has modestly decreased from 2000 to 2020, particularly since 2015. However, the percentage of all fatalities where distraction was a contributing factor has remained between 25% and 30% for the past few years. Despite a positive downward trend in distraction-related fatalities, this progress is smaller in comparison to trends involving all fatalities. Specifically, more progress has been in reducing all fatalities, however, less progress has been achieved in reducing distraction-related fatalities. Also, throughout this 21-year period, the majority of distraction-related fatalities were not distracted drivers but other victims, be they passengers, pedestrians or drivers of other vehicles who were not distracted. This is opposite to alcohol-related fatalities where most of the persons killed are the drivers who had been drinking.

Among fatally injured drivers, a larger percentage of females than males were distracted during a five-year period (2016-2020). This is perhaps surprising as self-reported data reveal that females are typically less likely to engage in distracted driving behaviour (Lyon et al. 2020). Given that more fatally injured male drivers than female drivers test positive for alcohol, distraction may not be as frequently coded as a contributing factor in crashes with males where alcohol impairment is already present (Robertson et al. 2017). This coding practice could bias the data and make it appear as if more female drivers were killed in distraction-related crashes.

One would expect drivers aged 16 to 19 to be more prone to distraction due to a lack of driving experience and drivers aged 65 and over to be more prone due to cognitive-related distractions. Although distraction was higher than average among fatally injured drivers aged 16 to 19 and 65 and older, fatally injured drivers aged 20-24, 25-34, and 35 to 44 also had a large percentage of fatalities involving distraction. It is anticipated that these three groups would find the driving task combined with a secondary task to be less demanding than either the youngest or oldest drivers. A possible explanation is that drivers in these age groups face greater exposure to distraction-related collisions since they drive more often than younger and older drivers. Further monitoring is needed to see which of these age groups remain over-represented among fatally injured distracted drivers. During the five-year period, drivers of commercial vehicles were over-represented. Historically, a smaller percentage of these drivers test positive for alcohol than drivers of other vehicle types and distraction may, in turn, be more likely to be coded as a contributing factor for these drivers in collision data.

There is little difference among fatally injured pedestrians between males and females who were distracted. Pedestrians aged 55-64 were the most likely to be distracted. Further analysis is needed to see whether these trends persist. While fatally injured pedestrians were less likely to be distracted than fatally injured

drivers, it should be considered that police-reported data on pedestrians are not as robust as those data collected for drivers involved in collisions. Furthermore, in some jurisdictions, only one contributing factor can be assigned on a collision report form. Perhaps a distracted pedestrian who was drinking will be categorized as 'drinking' rather than 'distracted'. Thus, while 55-64-year-olds could be more prone to distraction, there may be some bias since these pedestrians are usually less likely to have been drinking than pedestrians in the 20-24, 25-34, 35-44, and 45-54 age groups.

A larger percentage of distraction-related fatalities occurred from 9 am to 6 pm compared to other times of day. Also, distraction-related fatalities continue to be more prevalent during the week than during weekends. There may be a greater potential for drivers to be distracted by other priorities during working hours than at other times. Alternatively, since there are more alcohol-related crashes at night and on weekends, distraction may be more commonly cited as a contributing factor in fatal crashes that occur at other times.

Having five or more passengers in the vehicle appears to increase one's risk of being involved in a distraction-related crash, whereas the difference between single drivers and drivers with one passenger dying in a distraction-related crash is not that pronounced. This suggests that irrespective of the number of occupants in the vehicle, drivers should be aware of the potential risks associated with distracted driving.

In terms of the number of vehicles involved in a collision, a larger percentage of persons die in distraction-related multiple-vehicle crashes than single-vehicle crashes. This is contrary to what is seen in crashes involving alcohol where a larger percentage of drinking drivers die in single-vehicle crashes (Brown et al. 2021). It is worth noting that a higher-than-average percentage of vehicle occupants die in crashes where their vehicle struck a bus, train, heavy truck, or tractor-trailer. One would expect that the large size of these other vehicles would make them more conspicuous to a driver that encounters them on the road. It should be remembered that striking or being struck by one of these large vehicles usually results in more serious injury due to their size and weight.

In conclusion, specific patterns are evident in distracted driving collisions which are different from other types of collisions. For example, they do not occur at the same time of day, day of week, or with the same number of vehicles as alcohol-related collisions. Also, the demographic characteristics of distracted drivers and drinking drivers do not necessarily correspond with one another. Accordingly, enforcement activities and education initiatives to combat distracted driving ought to be tailored to the target audience based on these patterns.

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Fatality Database Disclaimer

Data from TIRF's National Fatality Database may be subject to change as the closure of cases is ongoing. As such, there may be minor differences in this document compared to previous documents reporting on the same topic.

TRAFFIC INJURY RESEARCH FOUNDATION

The vision of the Traffic Injury Research Foundation (TIRF) is to ensure people using roads make it home safely every day by eliminating road deaths, serious injuries and their social costs. TIRF's mission is to be the knowledge source for safe road users and a world leader in research, program and policy development, evaluation, and knowledge transfer. TIRF is a registered charity and depends on grants, awards, and donations to provide services for the public.

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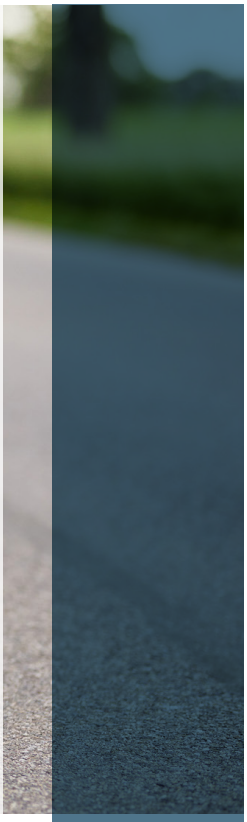

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