

# Distraction-Related Fatal Collisions in Canada | 2000-2021

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TIRF



## TRAFFIC INJURY RESEARCH FOUNDATION



### KEY FINDINGS

The number of road deaths in Canada that were distraction-related declined to 359 in 2021 from 458 in 2000 according to the **Traffic Injury Research Foundation's (TIRF) National Fatality Database**. In contrast, there has been a general upward trend in the percentage of motor vehicle fatalities involving a distracted driver since 2000.

Among drivers who were fatally injured between 2017 and 2021:

- > the percentage of fatalities that were distraction-related increased to 28.8% in 2021 from 19.1% in 2000
- > both drivers aged 16-19 and those 65 and older in fatal crashes had higher rates of distraction than all other age groups
- > fatally injured drivers of commercial vehicles, particularly those operating heavy trucks and tractor-trailers, were more often distracted than fatally injured automobile drivers or motorcyclists

## Introduction

Distracted driving has been increasingly prioritized in road safety planning in Canada in the past decade. This is due to distracted driving fatalities becoming more common than impaired driving fatalities in some Canadian jurisdictions, although some of this growth may be due to improvements in data collection (Robertson et al. 2017).

This fact sheet, sponsored by **Desjardins Insurance**, examines the magnitude and trends regarding the role of driver distraction in motor vehicle fatalities in Canada from 2000 to 2021 using data from **TIRF's National Fatality Database**. Fatalities included in this analysis occurred on public roadways with victims dying within 30 days of the collision and at least one of the vehicles involved was a principal highway vehicle (i.e., automobile, van, truck, motorcycle, bus). Topics explored in this fact sheet include the role of driver distraction among fatally injured victims, the characteristics of fatally injured distracted drivers, and characteristics of distraction-related collisions resulting in fatalities, including temporal factors, vehicle type, occupants, and geographic location.

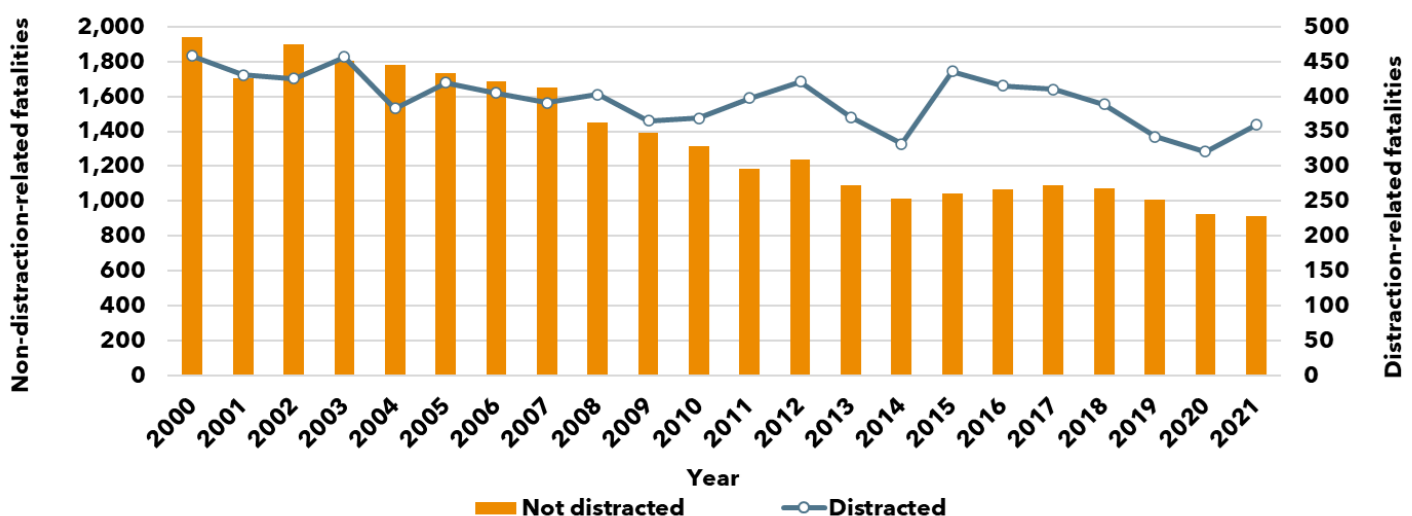
Fatalities are defined as distraction-related if at least one of the drivers in the collision (either dying or surviving) is considered to be distracted. Distraction can be determined from police-reported collision data or coroner/medical examiner narrative information. A fatally injured distracted driver is a person who dies in a collision and was considered to have been distracted just before or during the collision. In this fact sheet, TIRF's reporting on the role of distraction refers to its presence and does not suggest that 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 and/or pets in the vehicle, or eating, smoking or personal grooming while driving. It should be noted that investigating officers 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 distracting behaviour identified by the officer.

## Distracted driving trends over time among all fatally injured victims

Despite progress made in recent years, distracted driving remains a persistent problem since the number of distraction-related fatalities has declined more slowly than the number of non-distraction-related fatalities. Trends in the number of distraction and non-distraction-related fatalities in Canada between 2000 and 2021 are shown in Figure 1. Non-distraction-related fatalities are represented by the vertical bars and plotted against the axis on the left while distraction-related fatalities are represented by the solid line and plotted

Figure 1 | Number of distraction and non-distraction-related fatalities: Canada, 2000-2021





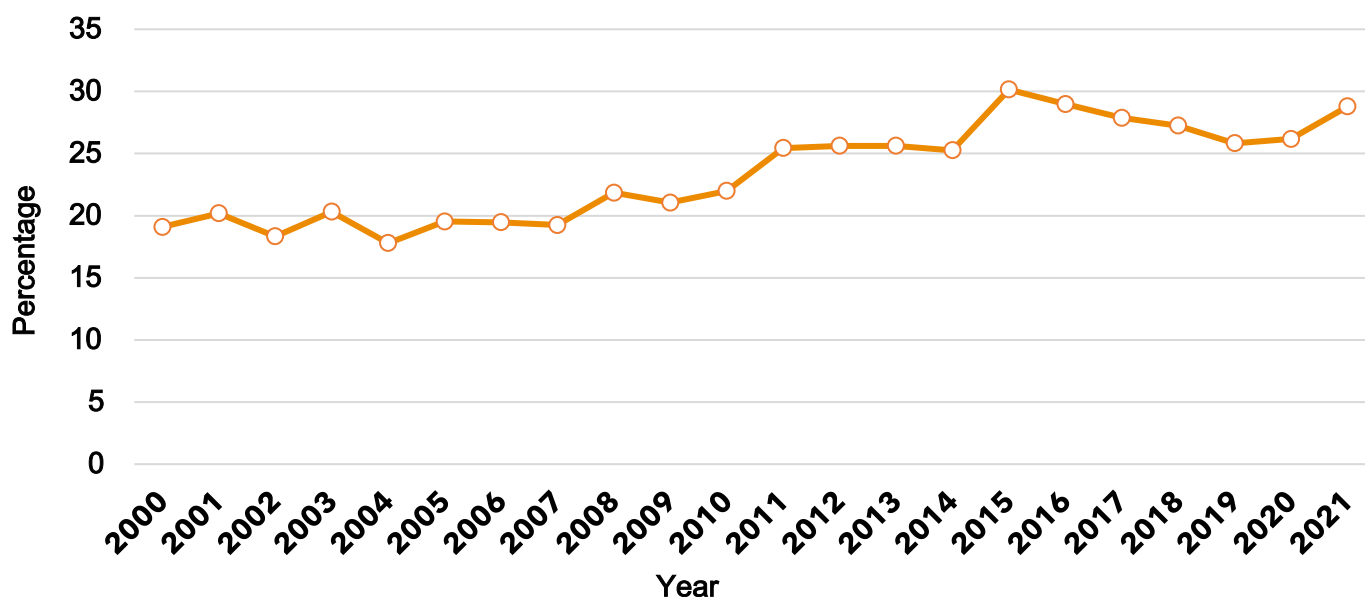
against the axis on the right. During these 22 years, the number of distraction-related fatalities gradually decreased by 21.6% to 359 in 2021 down from 458 in 2000. In comparison, the number of non-distraction-related fatalities decreased by 52.9% to 914 in 2021 down from 1,942 in 2000.

There has been a general upward trend in the percentage of motor vehicle fatalities involving a distracted driver since 2000. The percentage of motor vehicle fatalities from 2000 to 2021 that involved a distracted driver, regardless of whether it was the distracted driver who died in the collision, is shown in Figure 2. In 2000, 19.1% of fatalities were distraction-related. This percentage peaked in 2015 when 30.2% of fatalities were distraction-related and gradually decreased to 25.8% in 2019, before rising to 28.8% in 2021.

Non-distracted victims are more likely to be killed in distracted driving collisions than distracted road users. TIRF's National Fatality Database includes several 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);

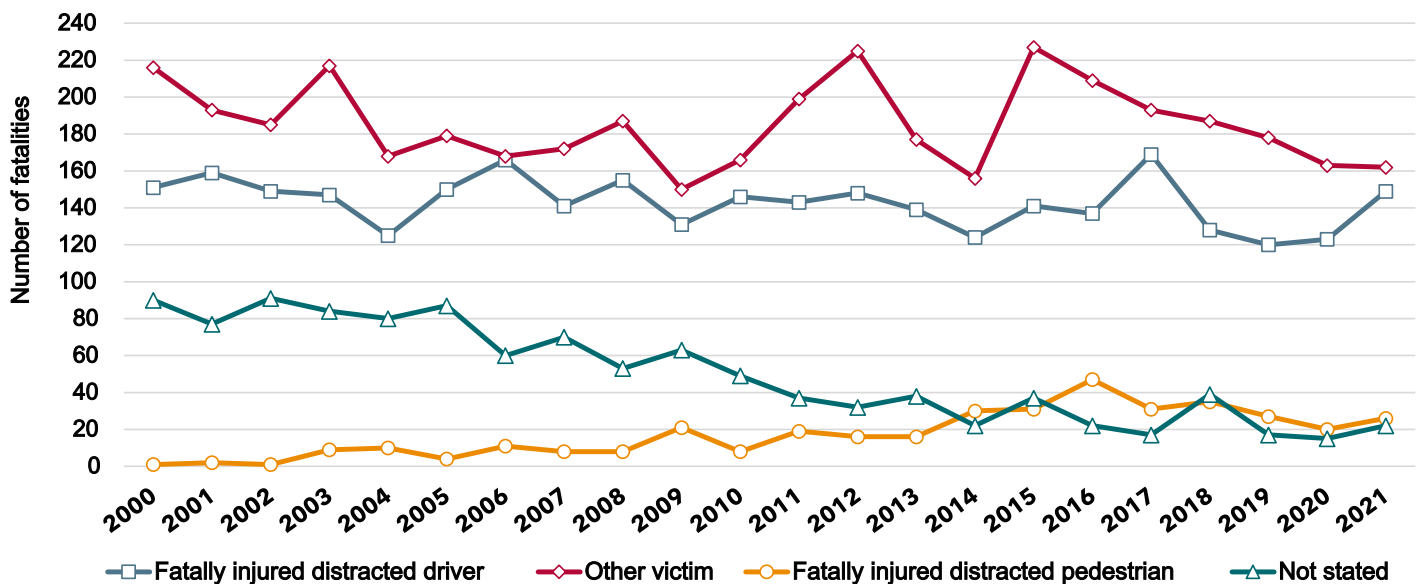
**Figure 2 | Percentage of fatalities that involved distraction: Canada, 2000-2021**



- > 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 collision where at least one of the drivers was distracted, or pedestrians who were struck by a distracted driver; or,
- > 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 in each of these categories from 2000 to 2021 is shown in Figure 3. Among fatalities involving a fatally injured distracted driver, there was a gradual increase from 151 in 2000 to a high of 169 in 2017, followed by a decrease to a low of 120 in 2019, and a subsequent increase to 149 in 2021. For almost the entire 22-year period, most fatalities (other victim) occurred in collisions 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 162 in 2021. The number of fatally injured pedestrians considered to be distracted rose from one in 2000 to 47 in 2016, before eventually decreasing to 26 in 2021. It should be considered that more complete data on pedestrian distraction have been available since 2010. The number of fatalities where it was not determined which driver was distracted generally decreased from 90 in 2000 to only 22 in 2021. 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, 2000-2021**



### Characteristics of fatally injured distracted victims

This section examines the demographic characteristics of fatally injured victims to consider variations in terms of driver distraction based on driver sex, age group, and vehicle type. The results are based on data from five years (2017 to 2021) for fatally injured victims in highway collisions. On average, 16.7% of fatally injured drivers were distracted in this period. Figure 4 shows that 16.1% of fatally injured male drivers were distracted compared to 18.8% 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 (20.6%) and 65 and older (20.4%) were the most likely to have been distracted. Conversely, 12% of fatally injured drivers aged 45 to 54 were distracted.



Figure 4 | Fatally injured distracted drivers by sex: Canada, 2017-2021

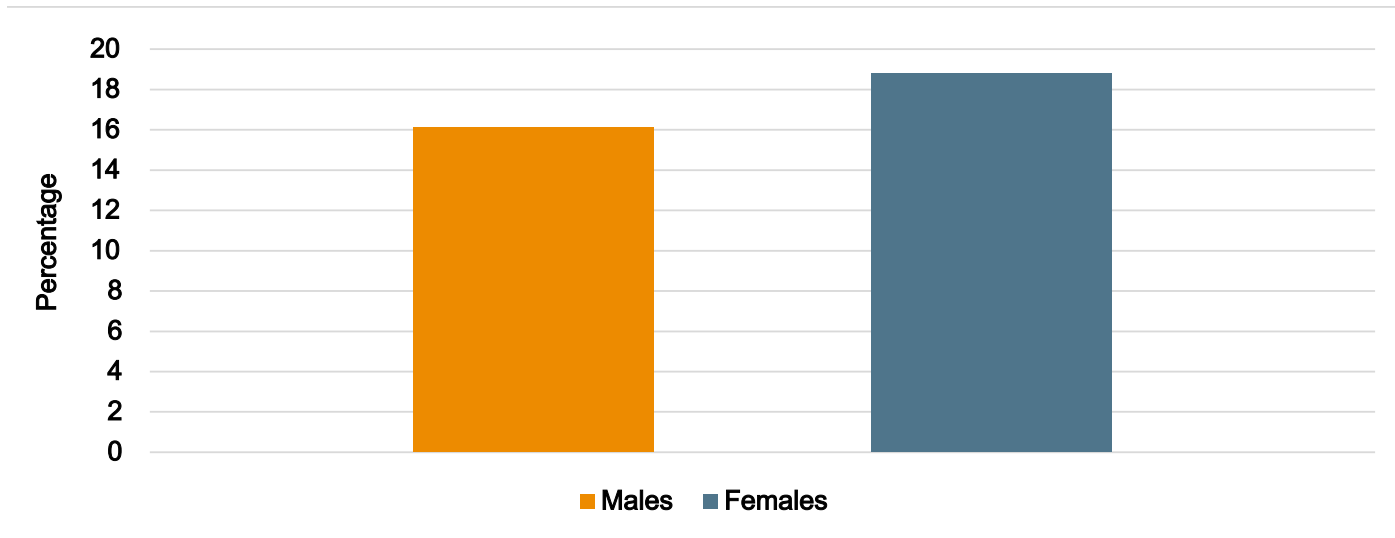
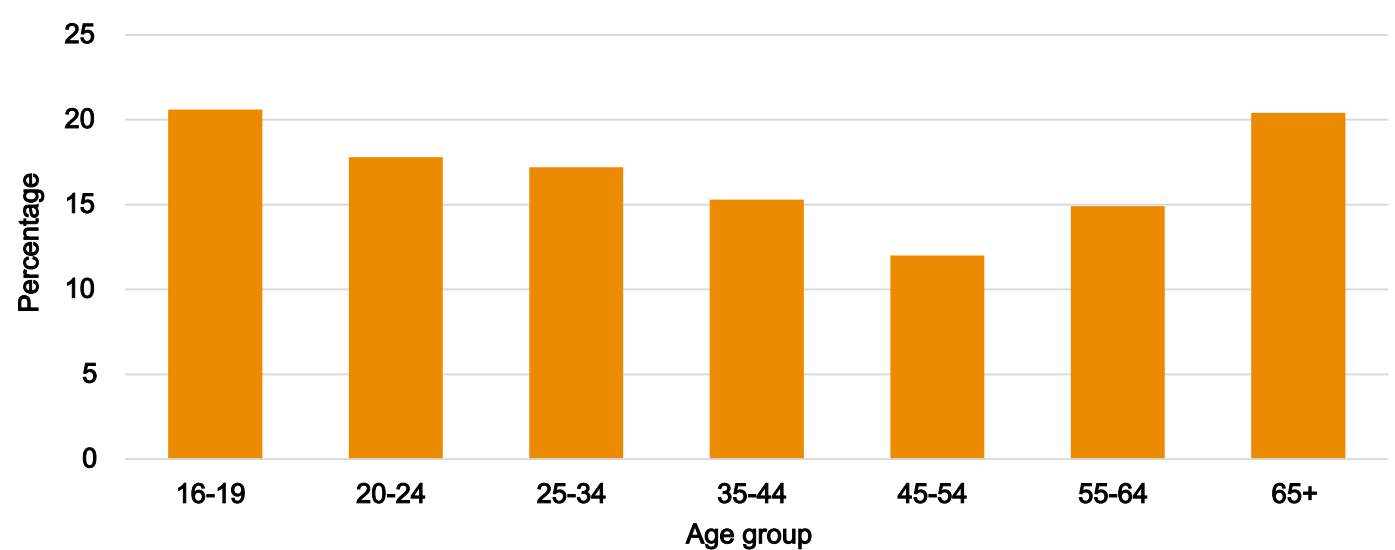


Figure 5 | Fatally injured distracted drivers by age group: Canada, 2017-2021



The prevalence of distraction among fatally injured drivers based on the type of vehicle 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 (25.6% vs. 13.1%).

The percentage of fatally injured pedestrians who were distracted on the basis of sex and age group is presented in Figure 7. The seven age groups are: 16-19, 20-24, 25-34, 35-44, 45-54, 55-64, and 65 and older. Slightly more than one in 10 (11.5%) fatally injured pedestrians were distracted between 2017 and 2021. Fatally injured male pedestrians were more likely to be distracted than female pedestrians (12.2% vs. 10.5%). Fatally injured pedestrians aged 55-64 (15%) were the most likely to have been distracted. Conversely, 6.8% of fatally injured pedestrians aged 16-19 were distracted.

Figure 6 | Fatally injured distracted drivers by vehicle type: Canada, 2017-2021

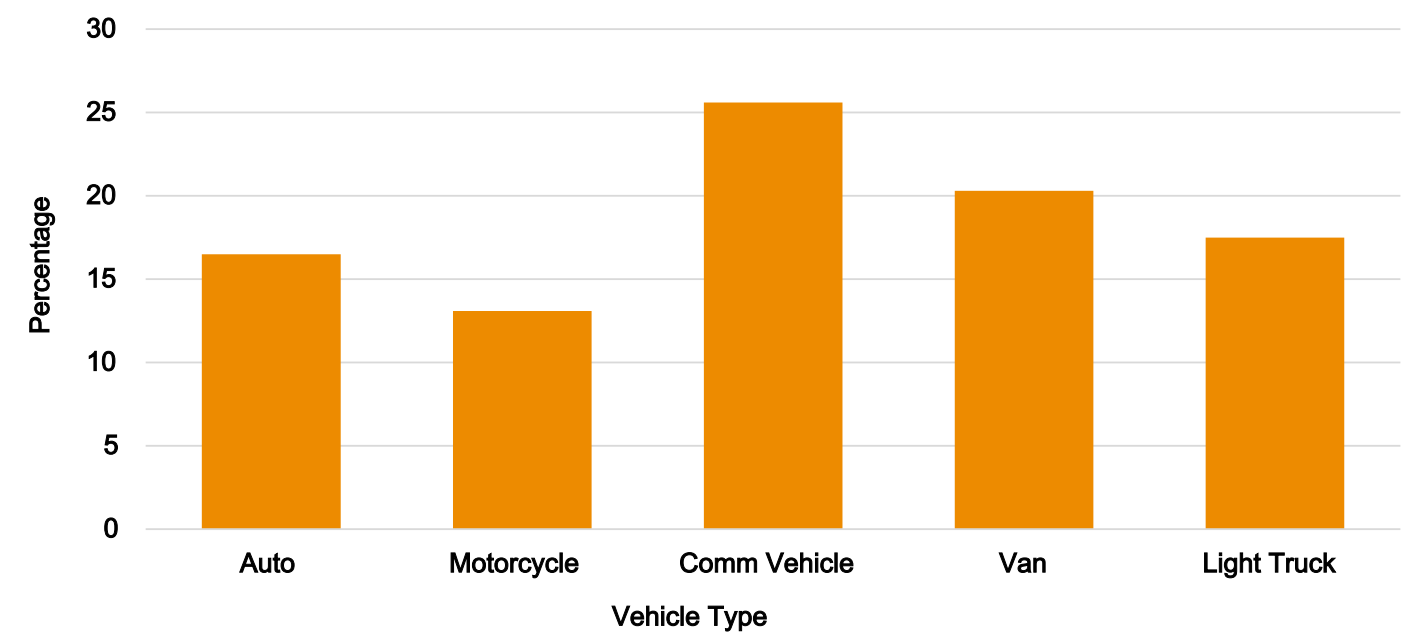
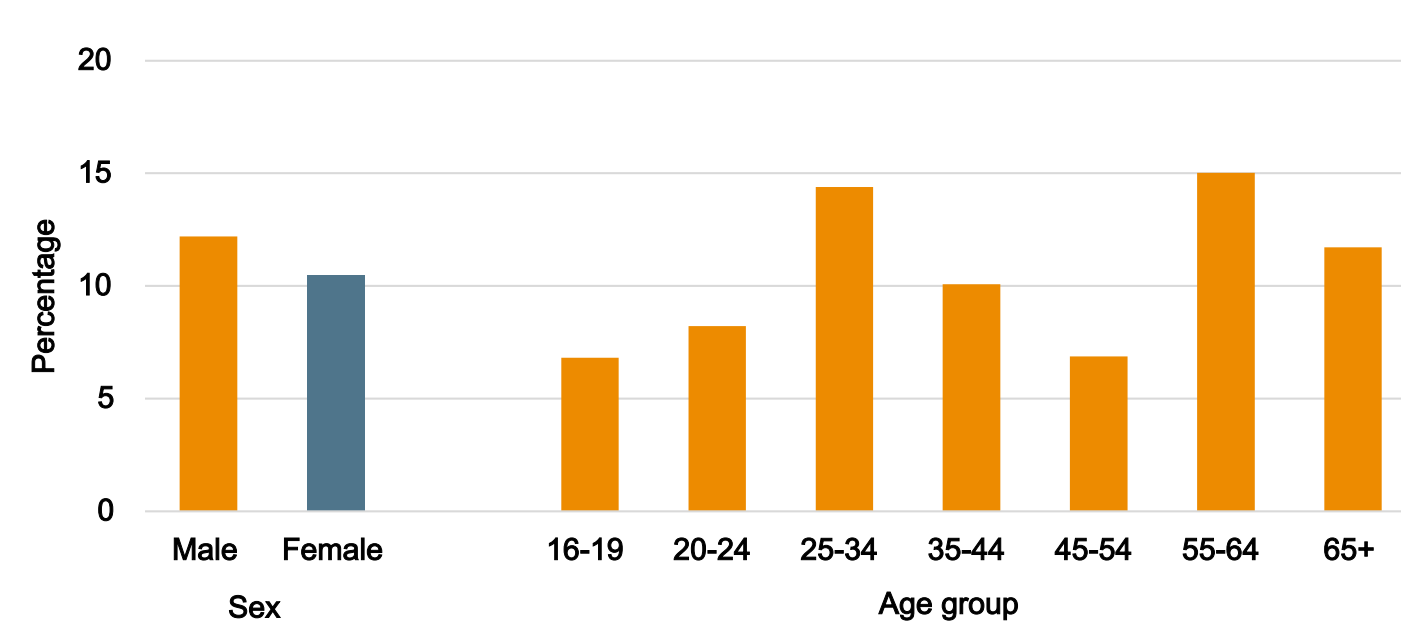


Figure 7 | Fatally injured distracted pedestrians by sex and age group: Canada, 2017-2021



## Collision characteristics of distraction-related fatalities

This section examines the prevalence of distraction-related fatalities based on various collision characteristics during the same period (2017-2021). These characteristics include time of day that the collision occurred, day of week, number of vehicle occupants, single vs. multiple vehicle collisions, and the vehicle/object collided with for fatal collisions.

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 occurred in collisions between midnight and 6:00 am. A larger percentage of distraction-related fatalities occurred throughout the workday. The largest percentage of persons killed in distraction-related collisions occurred between 9:00 am and 11:59 am (32.4%) and 3:00 pm to 5:59 pm (31.6%). A similar percentage of distraction-related fatalities occurred between noon and 2:59 pm (30.1%). There was a smaller percentage of distraction-related fatalities before 9:00 am and after 6:00 pm.



Figure 8 | Distraction-related fatalities by time of day: Canada, 2017-2021

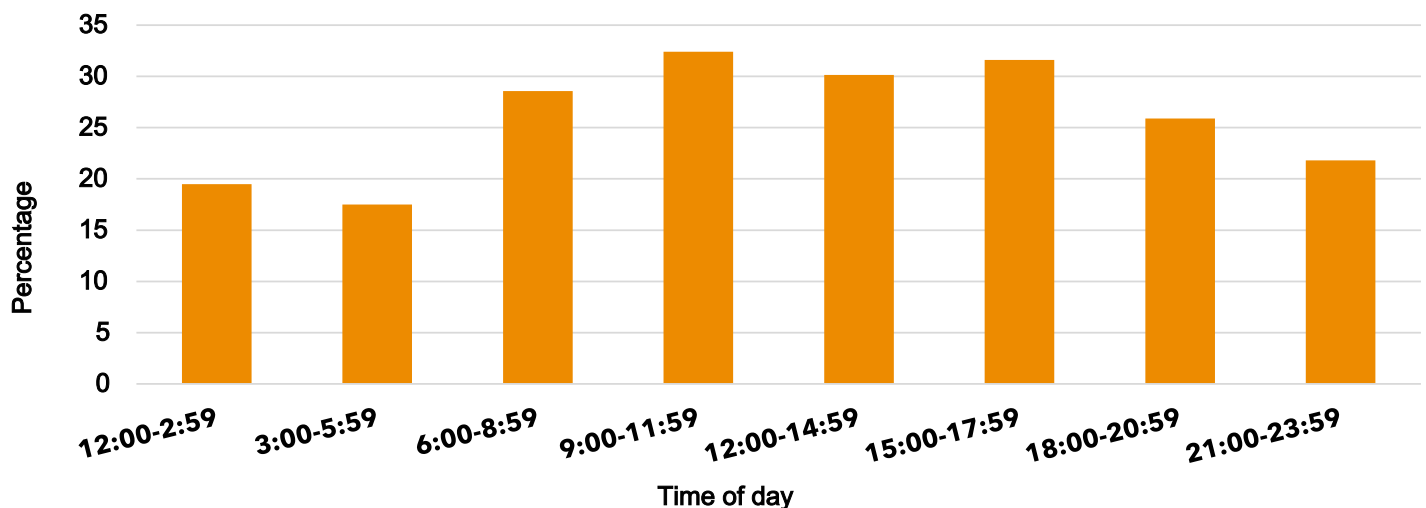


Figure 9 shows the percentage of fatalities that were distraction-related according to the day of the week when the collision occurred. The percentage of fatalities that were distraction-related most commonly occurred in collisions on Tuesday (30.4%) whereas just 21.4% of distraction-related fatalities occurred in collisions on Sunday.

The percentage of distraction-related driver and passenger fatalities according to the number of vehicle occupants is presented in Figure 10. Fatally injured victims in a vehicle with five or more occupants (35.6%) were the most likely to be involved in a distraction-related collision. The lowest incidence of distraction-related collisions was for fatally injured victims in a vehicle with just one occupant (23.5%).

**Fatally injured victims in a vehicle with five or more occupants (35.6%) were the most likely to be involved in a distraction-related collision.**

Figure 9 | Distraction-related fatalities by day of week: Canada, 2017-2021

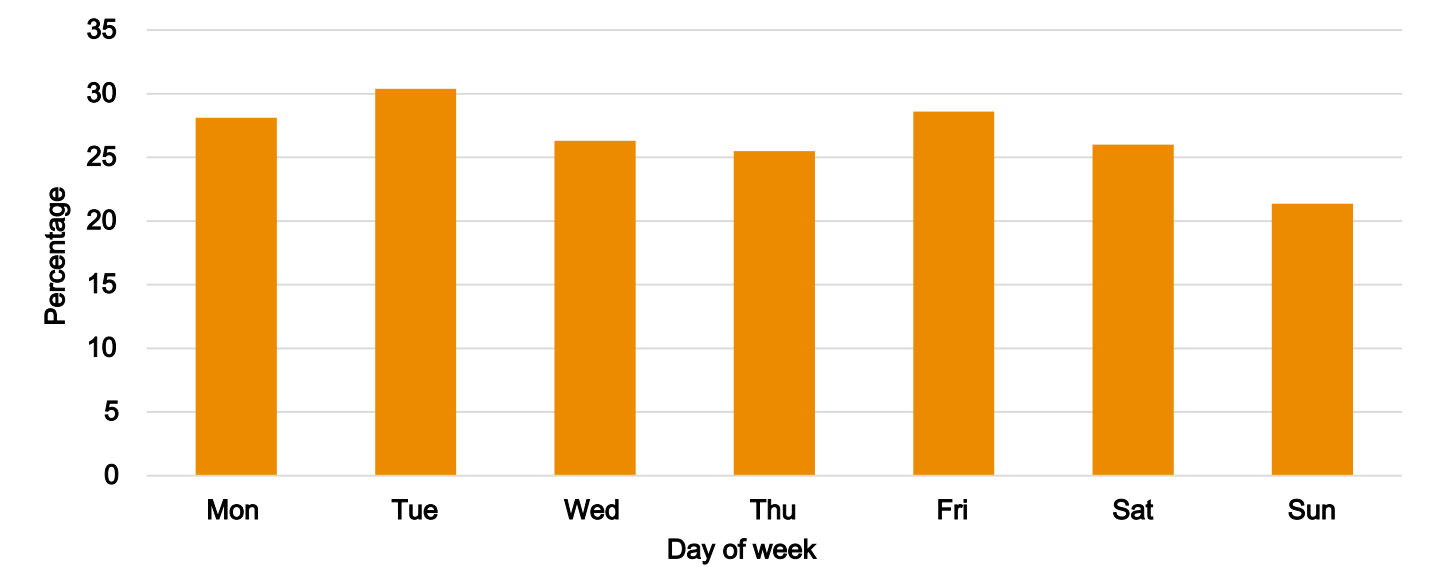
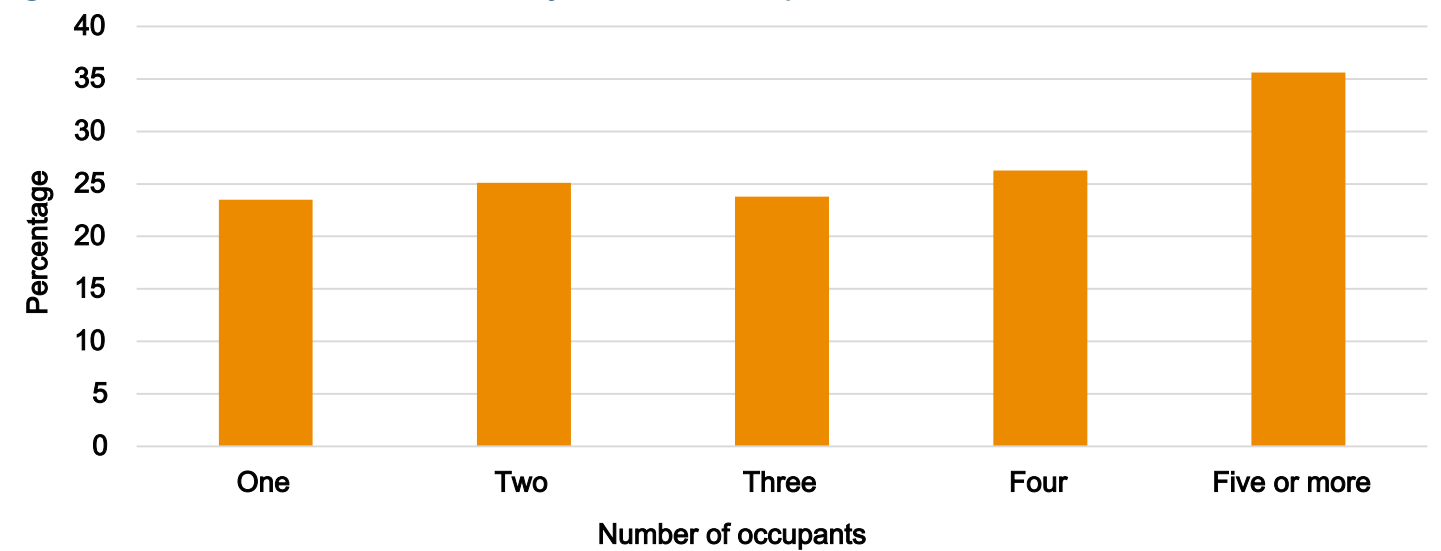


Figure 10 | Distraction-related fatalities by number of occupants: Canada, 2017-2021



In Figure 11, the percentage of fatalities involving distraction is compared between single-vehicle collisions and multiple-vehicle collisions. A larger percentage of persons died in a distraction-related collision involving multiple vehicles (31.9%) as opposed to those dying in single-vehicle collisions (21.7%).

Some vehicles are more conspicuous than others due to their size or their colour and the presence of flashing lights. The prevalence of distraction in collisions in which the fatally injured victim's vehicle collided with a bus, train, heavy truck (e.g., dump truck), tractor-trailer or emergency vehicle is presented in Figure 12. Fatally injured victims in this figure include drivers and passengers in multiple-vehicle collisions. Over half of persons (51.1%) dying in a collision involving a train were in a distracted-related collision. By comparison, 22.2% of persons dying in a collision involving an emergency vehicle died in a distraction-related collision. The percentage for emergency vehicles should be treated with caution due to the small number of persons who died in collisions involving this type of vehicle.

Figure 11 | Distraction-related fatalities by number of vehicles: Canada, 2017-2021

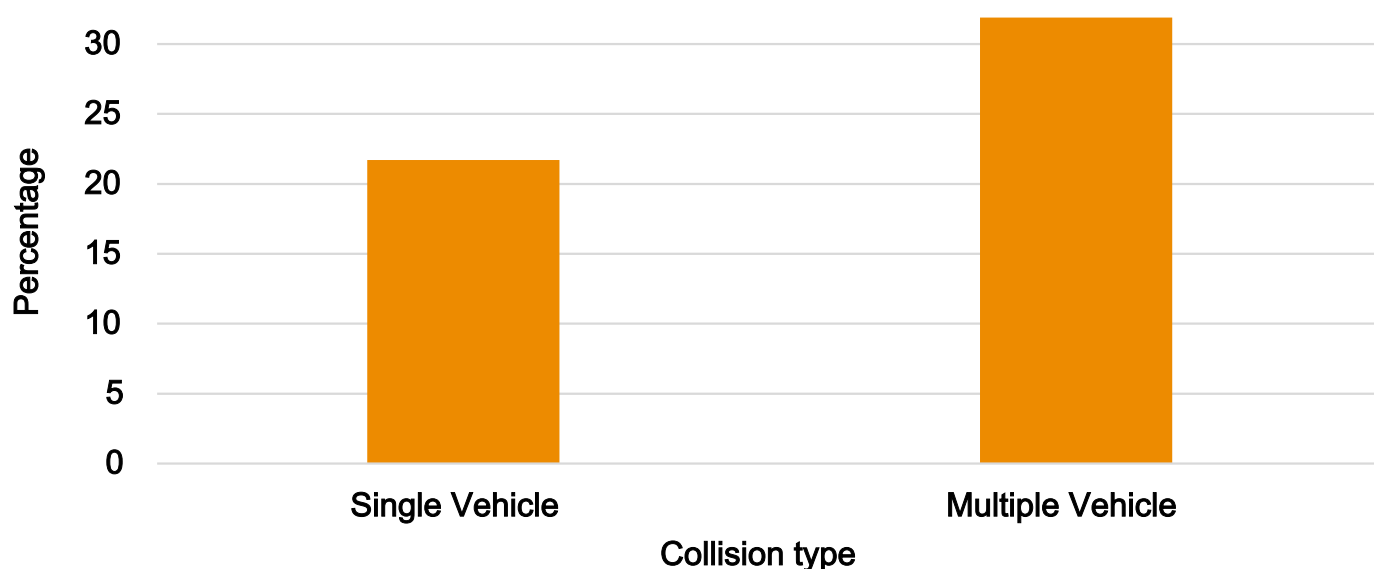
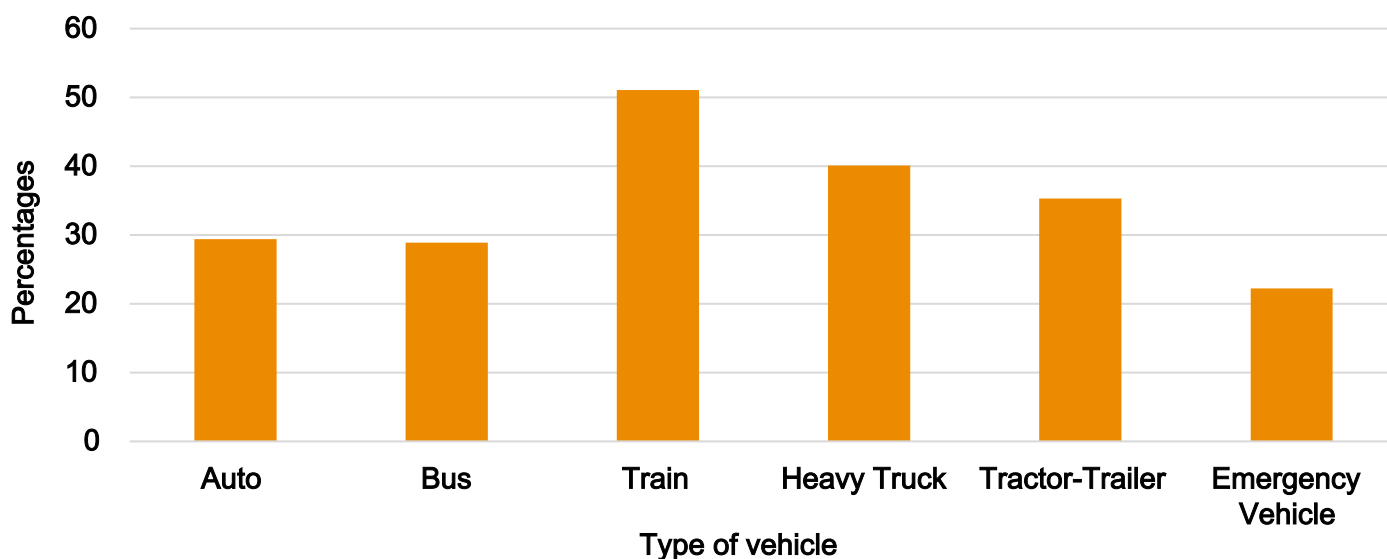


Figure 12 | Distraction-related fatalities by type of vehicle collided with: Canada, 2017-2021



## Geographical characteristics of distraction-related fatalities

This section examines the prevalence of distraction-related fatalities between 2017 and 2021 occurring in large metropolitan areas vs. non-metropolitan areas, and by region (province/territory).

In Figure 13, the percentage of distraction-related fatalities is compared between collisions occurring in large metropolitan areas with those occurring in other parts of Canada. Large metropolitan areas were defined by a population of at least 500,000 inhabitants and include:

- > Vancouver

> Edmonton

> Calgary

> Winnipeg

> Toronto

> Ottawa-Gatineau
- > Hamilton

> Peel Region

> Kitchener-Waterloo

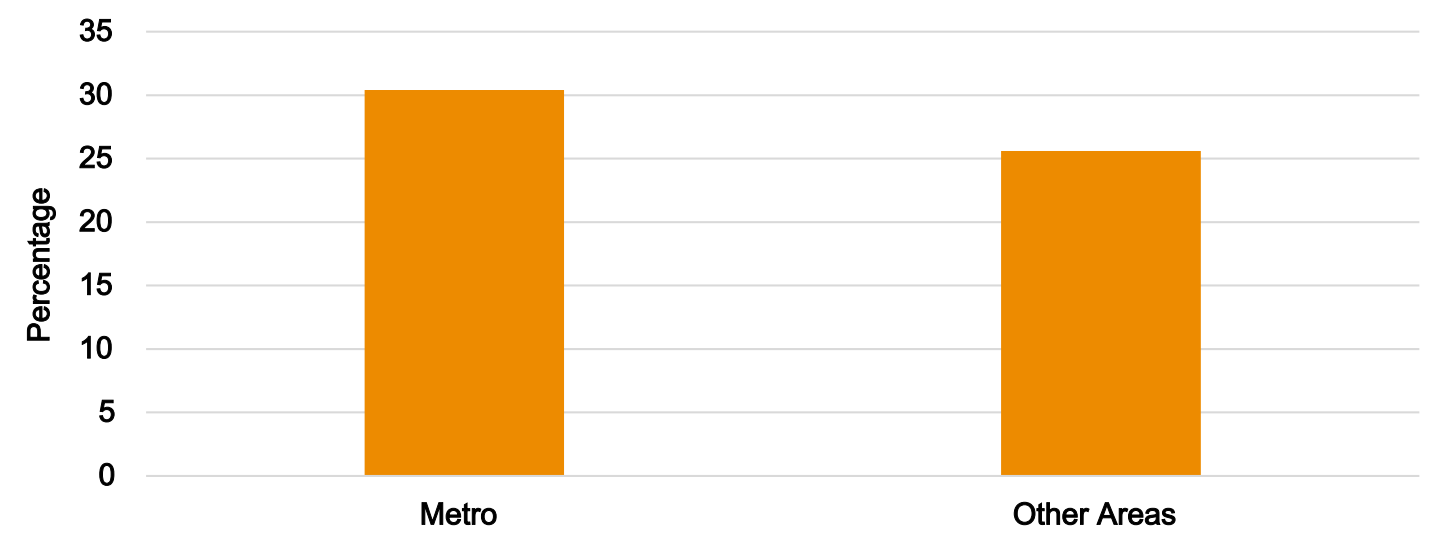
> London

> Montreal

> Quebec City (Statistics Canada 2022)



Figure 13 | Distraction-related fatalities in large metropolitan areas vs. other locations: Canada, 2017-2021



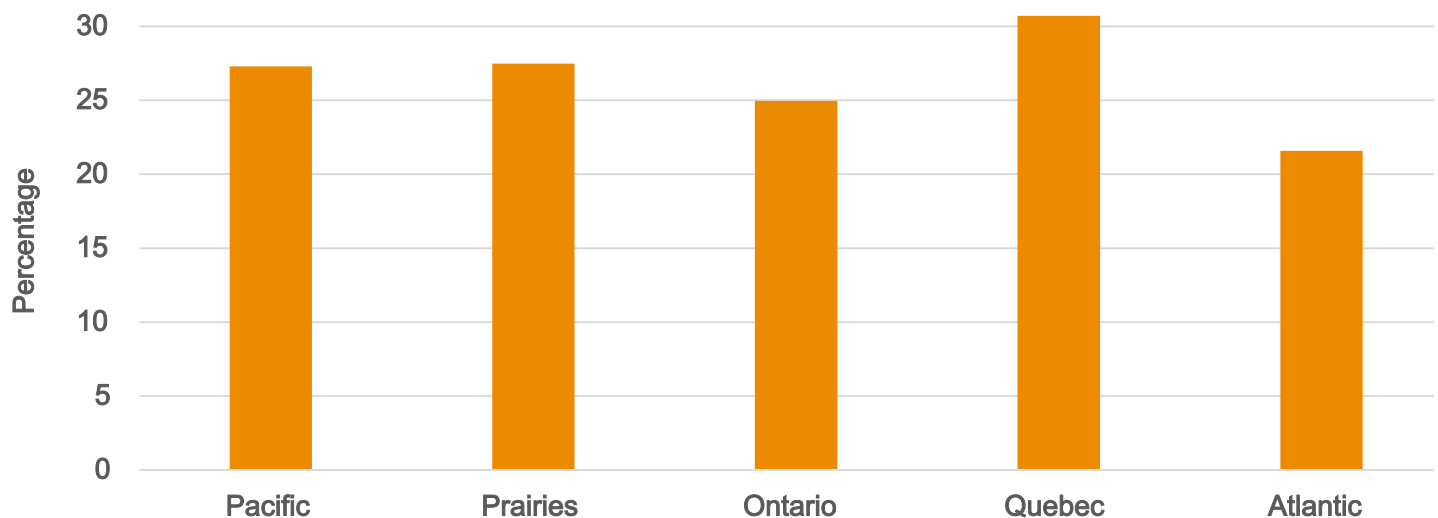
A larger percentage of persons died in distraction-related collisions in large metropolitan areas (30.4%) as opposed to those dying in collisions which occurred elsewhere in Canada (25.6%).

In Figure 14, the percentage of distraction-related fatalities is also compared by regions in Canada:

- > Pacific (British Columbia, Yukon)
- > Prairies (Alberta, Saskatchewan, Manitoba, Northwest Territories, Nunavut)
- > Ontario
- > Quebec
- > Atlantic (New Brunswick, Nova Scotia, Prince Edward Island, Newfoundland and Labrador)

The region with the largest percentage of persons dying in distraction-related collisions was Quebec (30.7 %) as opposed to the Atlantic provinces where 21.6% died in a distraction-related collision.

**Figure 14 | Distraction-related fatalities by region: Canada, 2017-2021**



## Conclusions

The number of distraction-related fatalities has modestly decreased from 2000 to 2021, with stronger declines since 2015. However, the percentage of all fatalities in which distraction was a contributing factor has fluctuated between 25% and 30% for the past decade. This is largely attributable to a larger decrease in the number of non-distraction-related fatalities (i.e., the denominator to calculate the percentage). In other words, the decreasing trend among distraction-related fatalities is less pronounced compared to the downward trend in non-distraction-related fatalities. In addition, the majority of distraction-related fatalities during these 22 years involved non-distracted victims, be they passengers, pedestrians or drivers of other vehicles whereas fewer resulted in the death of the distracted driver. This is in sharp contrast to alcohol-related fatalities in which most of the persons killed were the drinking drivers.

Among fatally injured drivers, a larger percentage of females than males were distracted during these five years (2017-2021). 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 also test positive for alcohol, distraction may not be as frequently coded as a contributing factor in collisions 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 female drivers were more likely to be distracted in fatal collisions.

One would expect drivers aged 16-19 to be more prone to distraction due to a lack of driving experience and drivers aged 65 and older 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, large percentages of fatally injured drivers aged 20-24, 25-34, and 35 to 44 were also distracted. It is anticipated that drivers from these three age groups would be less overwhelmed by the driving task than either the youngest or oldest drivers. However, drivers in these age groups may face greater exposure to distraction-related collisions since they drive more often than younger and older drivers and may also be more likely to have work-related responsibilities that contribute to distraction than either older or younger drivers. Further monitoring is needed to gauge whether these age groups remain over-represented among fatally injured distracted drivers. During these five years, drivers of commercial vehicles were over-represented in distraction-related fatalities. 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.

Among fatally injured pedestrians, males were slightly more likely to be distracted than females. Pedestrians aged 55-64 were the most likely to be distracted. Further analysis is needed to determine 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 driver collision data. Furthermore, in some jurisdictions, only one contributing factor can be assigned on a collision report form. This means, that in some cases, 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 younger pedestrians.

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 during other periods. Alternatively, since there are more alcohol-related collisions at night and on weekends, distraction may be more commonly cited in collision report forms as a contributing factor in fatal collisions that occur at other times.

The presence of five or more passengers in the vehicle appears to increase one's risk of being involved in a distraction-related collision, although the difference between lone drivers and drivers with one or two passengers dying in a distraction-related collision is not that pronounced. This suggests that irrespective of the number of occupants inside 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 collisions than in single-vehicle collisions. This is contrary to what is observed in collisions involving alcohol in which a larger percentage of drinking drivers die in single-vehicle collisions (Brown et al. 2021). It is worth noting that a higher-than-average percentage of vehicle occupants are killed in distraction-related collisions involving striking a bus, train, heavy truck, or tractor-trailer. One would expect the large size of these other vehicles would make them more conspicuous to other drivers on the

**A higher-than-average percentage of vehicle occupants are killed in distraction-related collisions involving striking a bus, train, heavy truck, or tractor-trailer.**

road. It should be remembered that striking or being struck by a much larger vehicle usually results in more serious injuries due to their size and mass.

In conclusion, distracted driving collisions often possess characteristics 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 are different from those of drinking drivers. 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.





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