



# THE ROAD SAFETY MONITOR 2010

## YOUTH DRINKING AND DRIVING



The knowledge source for safe driving

## **The Traffic Injury Research Foundation**

The mission of the Traffic Injury Research Foundation (TIRF) is to reduce traffic-related deaths and injuries. TIRF is a national, independent, charitable road safety institute. Since its inception in 1964, TIRF has become internationally recognized for its accomplishments in a wide range of subject areas related to identifying the causes of road crashes and developing programs and policies to address them effectively.

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# **THE ROAD SAFETY MONITOR 2010**

## **Youth Drinking and Driving**

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# EXECUTIVE SUMMARY

- > *The Road Safety Monitor (RSM)* is an annual public opinion survey conducted by the Traffic Injury Research Foundation (TIRF) and sponsored by Transport Canada and the Brewers Association of Canada. The survey takes the pulse of the nation on key road safety issues by means of a telephone and on-line survey of a random, representative sample of Canadian motor vehicle drivers.
- > The annual results of the *RSM* are released in a series of reports (available at: [www.tirf.ca](http://www.tirf.ca)) – the present one focuses on youth drinking and driving.
- > Young drivers make up a small proportion of the drinking and driving problem. However, some research has shown that when young drivers do drink and drive, they are more likely than adults to experience an alcohol related crash.
- > Young drivers impaired by alcohol were rated as a very or extremely serious problem by 82.1% of young Canadian drivers aged 16-24, and young drivers impaired by drugs other than alcohol are a very or extremely serious problem according to 69.6% of young drivers.
- > When asked about driving within two hours of consuming any amount of alcohol in the past 30 days, 11.9% of the 484 young drivers aged 16 to 24 in the sample admitted to doing this. This is in line with other surveys showing self-reported rates of drinking and driving among youth between 10% and 20%. When asked about driving when they thought they were over the legal limit in the past 12 months, 7.9% of young drivers admitted to doing this.
- > Of the 7.9% of young drivers who drove a motor vehicle after drinking when they thought they were over the legal limit, 54.4% reported that the last time they drove under such conditions they did so with passengers in the vehicle.
- > Within the last month, 6.5% of young Canadian drivers indicated that they had been a passenger in a motor vehicle driven by someone who has been drinking on one occasion, and 7.4% indicated that they had been a passenger between two and ten such occasions.
- > In terms of drinking location, the majority of young drivers aged 16 to 24 (94.1%) who drove when they thought they were over the legal limit reported doing most of their drinking when they were at a location where they were likely drinking with others (i.e., at the home of a friend or relative, a bar, a restaurant, a party, or other locations) and 5.8% reported doing most of their drinking at their own home prior to driving.
- > With regards to the use of various measures for dealing with the issue of drinking and driving 77% of young drivers agreed that a device that prevents a drinking driver from starting the car should be mandatory for all convicted impaired drivers; 60.5% agreed that there should be more visible enforcement for drinking drivers; 52.7% agreed that the police should be allowed to do random breath tests to detect drinking drivers; 49% agreed that a device that prevents a driver from starting the car when he or she has been drinking should be mandatory for young drivers; and, 44.2% agreed that a device that prevents a driver from starting the car when he or she has been drinking should be mandatory for all vehicles.



# INTRODUCTION

*The Road Safety Monitor (RSM)* is an annual public opinion survey developed and conducted by the Traffic Injury Research Foundation (TIRF) to take the pulse of the nation on key road safety issues. The survey examines:

- > what Canadians see as priority road safety issues and how concerned they are about them;
- > their views about how to deal with these problems;
- > what they know and do not know about safe driving practices; and
- > how they behave on the highways.

The RSM includes a core set of questions that are asked each year to provide information on trends in attitudes, opinions and behaviours. This is supplemented each year by a set of questions that probe more deeply into special, topical, and emerging issues. This report describes the findings from the 2011 RSM regarding the issue of youth drinking and driving.

## METHOD

The tenth edition of the *RSM* contained 87 items designed to probe the knowledge, attitudes, and concerns of Canadians with respect to a range of road safety issues, and to obtain information on their driving practices. The survey required an average of approximately 15 minutes to complete.

Opinion Search Inc. fielded this survey in September, 2010 to a random sample of Canadian motor vehicle drivers who have driven in the past 30 days and have a valid driver's licence. A portion of all respondents were contacted by phone and the other portion on-line.

Among the 10,718 online invitations to participate from respondent pools, 9,518 (88.80%) did not complete the survey. Among the 2,251 households contacted by phone in which a person was asked to participate, 1,696 (75.34%) refused and 154 (6.84%) were not qualified. These rates were similar to previous years.

A total of 401 drivers completed the telephone interview and a total of 1,200 drivers completed the on-line portion. Note that young drivers were oversampled to allow adequate numbers to compare the attitudes, opinions and behaviours of young drivers to adults. The final sample comprised 1,601 drivers, 484 of which were young drivers aged 16-24. The sample was stratified by province and weighted according to gender and age to avoid bias.

The data were analyzed taking account of the stratified and weighted sampling design (see StataCorp. 2010 for information about the modeling procedures), using both univariate and multivariate approaches. Based on a sample of this size, on average, the results can be considered accurate within 2.5%, 19 times out of 20.

# BACKGROUND

Generally, younger drivers are overrepresented in road fatalities and injuries, even when controlling for the number of licensed drivers (Emery et al. 2008). While young drivers make up a small proportion of the drinking and driving problem relative to other drivers, some research has shown that when young drivers do drink and drive, they are more likely than adults to experience an alcohol related crash (Bingham et al. 2009). To illustrate, among drivers under the age of 21, positive blood alcohol concentrations (BAC) are associated with higher relative crash risks compared to drivers over the age of 21 (Peck et al. 2008). Further, among young drivers, the likelihood of being involved in a crash has been shown to be higher at all BAC levels compared to older drivers (Peck et al. 2008).

The use of drugs, other than alcohol, while driving is also a growing concern and there is an increasing amount of research that speaks to the drugged driving problem (Beasley et al. 2011).

The objective of this report is to present the current knowledge on youth substance use and driving in Canada to better understand and address this problem through assessing attitudes, opinions, and behaviours of young Canadians regarding this issue.

## ***Prevalence of youth impaired driving***

### **Youth drinking and driving**

There is no universal definition of a young driver, as many studies use different age ranges to define this population (Nickel 2009). Generally, self-reported drinking and driving among young drivers ranges from 10% to 20%. According to results of the 2009 Ontario Student Drug Use and Health Survey, among drivers in grades 10 to 12 (generally between the ages 16 and 18), it was found that 12% drove within an hour of consuming two or more drinks containing alcohol within the last 12 months. This represents an estimated 34,700 drivers in grades 10 to 12 who drove after drinking (Paglia-Boak et al. 2009). In 2001, 15.1% of the students who had a driver's licence reported driving within an hour after having consumed 2 or more drinks. The 2001 results included students in grades 10 through 13 across Ontario (Adlaf et al. 2003). Note that grade 13 was abolished in Ontario after the 2002/2003 school year (Paglia-Boak et al. 2009).

Similarly, an Ontario survey conducted by the Centre for Addiction and Mental Health (CAMH) found that among adults aged 18 to 29 with a valid driver's license in 2009, 12.8% reported driving after having two or more drinks in the last hour at least once in the past 12 months (Ialomiteanu et al. 2011). This percentage declined from 20.1% in 1996 to 10.3% in 2007, then increased to 12.4% in 2008 and 12.8% in 2009.

An Alberta survey of drivers in the same age group (18-29) found that 20.1% reported that they have driven after having consumed at least three drinks within a four hour time period in the last three years (Rothe and Kokotilo 2005).

## **Youth drug use and driving**

In terms of drug use and driving among young drivers, a Canadian study by Beasley et al. (2011) showed that testing positive for any drugs (not including alcohol) among drivers was fairly constant across age groups with an average prevalence of about 19%. However, among drivers who tested positive for drugs only, testing positive for cannabis was highest for those under 19 (68.6%) followed by those aged 19-24 (54.2%) and declined with increasing age to less than 6% for those 65 and above. In contrast, the use of depressants was lowest for those under 19 (12.7%) and increased with increasing age to 64.3% for those 65 and above. It should be noted that drug testing was more common among younger drivers which may have affected these results (Beasley et al. 2011).

In Ontario, results of a 2009 survey showed that 17% of drivers in grades 10 to 12 – an estimated 48,500 drivers in grades 10-12 – reported driving a vehicle within one hour of using cannabis in the past 12 months (Paglia-Boak et al. 2009). This percentage is somewhat higher than that reported for alcohol use and driving which was 15.1%.

## **Riding with an impaired driver**

Riding with a drinking or drugged driver is also an issue of concern and some evidence suggests that this is more common among younger drivers. To illustrate, data from a 2009 Canadian survey revealed that both those between ages 18 and 24 and those between ages 25 and 44 were significantly more likely to ride with a drinking driver compared to those between 45-64 years of age (Cartwright and Asbridge 2011). As for riding with a cannabis impaired driver, data from the same survey showed that those aged 15-17, 18-24, and 25-44 were significantly more likely to have driven with a cannabis impaired driver compared to the 45-64 age group, and those aged 65 and older were significantly less likely to have ridden with a cannabis impaired driver compared to those between 45 and 64 years of age (Cartwright and Asbridge 2011). Similarly, results of a European survey exploring forms of transport from nightlife environments among young people aged 16 to 35 where 37.21% of the sample took a ride with someone who was drunk or under the influence of drugs in the last month, showed the risk of doing so was lower among those aged 26 to 35 compared to those aged 16-25 (Calafat et al. 2009).

In terms of riding with a drinking driver, an Ontario survey found that 26.2% of drivers aged 18-29 in 2009 reported being a passenger in a motor vehicle with a driver who had two or more drinks in the last hour before driving (Ialomiteanu et al. 2011). Based on a 2001 Ontario survey of students in grades 7 through 13 across Ontario, 31.9% of respondents had been a passenger in a vehicle driven by someone who was drinking (Adlaf et al. 2003).

A survey of adolescent students in the Atlantic provinces of Canada (Nova Scotia, New Brunswick, Newfoundland and Labrador, and Prince Edward Island) found that in 2002, 23.3% reported having ridden with a drunk driver at least once in the last 12 months, and about half of these students reported having done so on more than one occasion (Poulin et al. 2006).

With regards to being a passenger in a vehicle driven by a driver who had been drinking or had been using drugs, results of a 2009 Ontario survey showed that 23% of drivers in grades 10 to 12 reported they had been a passenger in a vehicle driven by a driver who had been drinking or had been using drugs at least once in the last 12 months (Paglia-Boak et al. 2009).

On the other hand, an Alberta survey of 18-29 year old drivers showed that 79.2% of respondents said they have used a designated driver. They were also asked when they typically select the designated driver, and 70.3% said they do so before drinking. Furthermore, the majority of respondents (78.8%) have tried to stop someone they know from drinking and driving (Rothe and Kokotilo 2005).

### ***Alcohol related fatalities and injuries among youth***

In Canada in 2009, of all the people who died in alcohol-related crashes (884), 11% (97) were between the ages of 16 and 19, 20.8% (184) were between the ages of 20 and 25 and 20.8% (184) were between 26 and 35 years of age. In comparison, the percentage for other age groups were smaller and decreased with increasing age with the exception of those under 16 years of age (2.2%) (Mayhew et al. 2011). Those under the age of 16, however, account for a much smaller proportion of drivers in general.

In terms of involvement in alcohol-related serious injury crashes in Canada, in 2009, 12.7% (369) of those involved in such crashes were between the ages of 16 and 19, 21.7% (633) were between 20 and 25, and 20.3% (590) were between 26 and 35. Again, this percentage generally decreased with increasing age while drivers under the age of 16 accounted for only 0.7% (Mayhew et al. 2011).

A study using both the data described above (see description in Mayhew et al. 2011) and data from Transport Canada's National Collision Database by Beasley et al. (2011) further examined substance use in fatally injured drivers in Canada. This study showed that alcohol use was most common among younger drivers. Specifically, the highest percentage was for those between 19 and 24 (26.9%), followed by those 25 to 34 (26.6%), 35 to 44 (22.9%), 45 to 54 (21.9%), and those under 19 (17.4%). Fatally injured drivers aged 55-64 and 65+ had the lowest percentages (16% and 10.7% respectively).

In the U.S. in 2009, of all those between 15 and 20 years old who were killed in a motor vehicle crash, 33% had a BAC of 0.01% or more and 28% had a BAC of 0.08% or more. In terms of involvement in fatal crashes among those between 15 and 20 years of age, 24% of the drivers were drinking. This percentage was 4% for injury crashes and 2% for property damage only crashes (NHTSA 2009a).

### ***Profile of young impaired drivers***

Impaired driving has predominantly been considered a male-based problem. Males, particularly young males, are more likely than females or older age groups to self-report drink driving behavior, to be arrested for DWI, to be fatally injured, or, to fatally injure others while driving drunk (Mayhew et al. 2003; Zador et al. 2000).

According to results of a 2009 Ontario survey, among drivers in grades 10 to 12, males were more likely to report driving within one hour of consuming two or more alcoholic drinks (15%) compared to females (8%) (Paglia-Boak et al. 2009).

National fatal crash data in the U.S. for 2009 also show that more young male drivers involved in fatal crashes had been drinking at the time of the crash (27%) compared to females (15%) between 15 and 20 years of age (NHTSA 2009a).

With regards to different age categories among young drivers, positive BAC levels seem to be the least common for the youngest drivers. When examining evidence of alcohol among fatally injured drivers in Canada in 2009, the highest percentage with a positive BAC was for those aged 20 to 25 (24.1%). As for the other age groups, percentages decreased with increasing age with the exception of those aged 16 to 19 who accounted for the lowest percentage of all age groups (9.1%). Drivers under 16 were not included as there were very few who had been drinking (Mayhew et al. 2011).

Of those involved in fatal crashes in the U.S. in 2009 (including those who survived), drivers aged 21 to 24 accounted for the largest percentage of drivers with a BAC level of 0.08% or higher in fatal crashes (35%), followed by drivers aged 25 to 34 (32%) and drivers between 35 and 44 (26%). Drivers between 16 and 20 accounted for 19% (NHTSA 2009b).

Similarly, according to a 2007 National Roadside Survey in the U.S., there were significantly more nighttime drivers aged 21 to 34 with positive BAC levels (15.6%) compared to drivers aged 35 to 44 (10.5%). However, the percentage of drivers under 21 with positive BAC levels (7.2%) was significantly smaller than it was for drivers between 35 and 44 years of age (10.5%). No other significant differences were found (Lacey et al. 2009).

A survey of undergraduate psychology students in Queensland, Australia also found that the most likely group to report drinking and driving within the last month were those between the ages of 22 and 35 (20%) followed by those aged 18 to 21 (12%) and those 35 to 55 (8%).

This same Australian survey examined self-reported drug use while driving and found that 18-21 year old students were significantly the least likely to have ever driven drugged (17%) compared to 34% for 22-36 year old students, and 35% for those between 36 and 55 years of age. However, these differences were not significant when looking at self-reported drug use while driving within the last year: the percentage who said they have driven after using drugs in the last year was 13% for those aged 18-21, 18% for those aged 22 to 36 and 10% for those between 36 and 55 (Davey et al. 2005).

In terms of other personal characteristics, a New Zealand cohort study of young people up to the age of 21 found that being of lower socioeconomic status and having lower educational attainment were associated with having drink driving incidents (Morrison et al. 2002).

Certain behavioural characteristics have also been linked to substance use and driving such as substance use in general, as well as the propensity to engage in other risky driving activities. For example, a New Zealand survey at ages 21 and 26 examined personal and situational factors and their influence on drinking and driving among young adults (Morrison et al. 2002). This study found a highly significant relationship between alcohol and cannabis dependence at age 21 and having a drink driving incident at age 26.

Alcohol misuse also tends to be positively associated with traffic incidents in general among young drivers. For example, a survey of Michigan twelfth graders found that both alcohol use and alcohol misuse were positively associated with traffic incidents. The use of cigarettes and the use of marijuana were also both positively associated with traffic incidents (Elliott et al. 2006).

Walker et al.'s (2005) examination of a California survey of youth between the ages of 15 and 20 showed that heavy episodic drinking was related to increases in driving after drinking as well as riding with a drinking driver. Similarly, according to a European survey exploring forms of transport from nightlife environments among young people aged 16 to 35, the risk of riding with a drinking or drugged driver increased with higher levels of substance use including alcohol, cannabis, ecstasy, and cocaine (Calafat et al. 2009).

Some research has demonstrated a relationship between drinking location and likelihood of driving after drinking or riding with a drinking driver. For example, results of a California survey of youth between the ages of 15 and 20 show that increases in driving after drinking and riding with drinking drivers were related to drinking in restaurants. This is interesting, as these are all underage drinkers. Thus, restaurants may be an attractive location for young people to drink as wait staff are responsible for identifying the age of the drinker, which is not as strictly enforced as it may be in bars or nightclubs where people are asked for proof of age at the door. Drinking in cars was also related to driving after drinking (Walker et al. 2005).

A further examination of these same data by Chen et al. (2008) showed that driving under the influence and riding with a drinking driver were both strongly associated with alcohol use in unstructured settings such as parties or hanging out with friends in an outdoor area. This study found that parents are an important social control mechanism in shaping beliefs regarding driving under the influence, and in such settings, parents are unlikely to be present. This speaks to the importance of parental involvement in interventions to reduce drinking and driving among young people.

### ***Interventions for young impaired drivers***

An analysis of arrest and driver records in Australia found that after their first drink driving charge, drivers between the age of 17 and 35 at their first offence took significantly less time to experience an alcohol related crash compared to those aged 36-65 at their first offence. When this younger age group is further broken down, drinking drivers that were between the ages of 26 and 35 when first arrested were slightly less likely than those between the ages of 18 and 25 to be involved in a subsequent alcohol related crash.

Furthermore, for all age groups examined, with each subsequent drinking and driving charge, their relative risk of an alcohol related crash increased as well (Ferrante et al. 2001). These findings suggest that having a previous alcohol related driving offence at a younger age increases the likelihood of having a subsequent alcohol related crash. Thus, treatment for young drinking drivers is even more important among this group to prevent future recidivism.

Most jurisdictions in Canada and the U.S. have some form of GDL program. Generally, GDL programs are multi-staged and include a learner's stage and an intermediate stage before full licensure. Restrictions are placed on the new drivers to minimize their exposure to risk and these driving restrictions are gradually lifted until graduation to a full licence (Mayhew et al. 2005). A large body of research on graduated driver licensing (GDL) programs document the effectiveness of GDL programs in reducing collisions, fatalities and injuries among novice drivers (Foss and Evenson 1999; Hartling et al. 2005; Hedlund et al. 2006; Mayhew et al. 2005; Shope 2007; Vanlaar et al. 2009). All provinces in Canada have implemented a GDL program which requires that drivers maintain zero blood alcohol content in the first two years before full licensure (Poulin et al. 2006). Unfortunately, research is lacking with regards to how different components of GDL affect the fatality and injury risk of novice drivers (Vanlaar et al. 2009).

As a sidebar, in most provinces in Canada, the minimum legal drinking age is 19; and, in Alberta, Manitoba, and Quebec, the legal drinking age is 18 (CCSA 2011). Thus, all drivers under the legal drinking age must maintain a zero BAC level while driving. In the U.S., all states and the District of Columbia have a minimum legal drinking age of 21 and a zero tolerance law for drivers under 21 (0.02% BAC or less) (Voas et al. 2009). After the introduction of zero tolerance laws in the U.S., research has shown declines of 19% in self-reported driving after drinking and declines of 23% in driving after drinking heavily (Wagenaar et al. 2001). Two provinces in Canada, Ontario (Ontario Ministry of Transportation 2011) and New Brunswick, now also have a zero tolerance law for all drivers under 21 where drivers must maintain a zero BAC level (New Brunswick Public Safety 2011). In Manitoba, on top of having to maintain a zero BAC level in the first two years before full licensure, as of December 2006, they must continue to maintain a zero BAC level for three additional years once they receive their full licence (Manitoba Public Insurance, 2006).

With regards to media efforts, a study testing the efficacy of a social norms media campaign aimed to reduce the prevalence of drinking and driving among those between 21 and 34 years of age was conducted in Montana. Positive social norms messages communicate accurate positive norms that already exist in a community in an effort to correct misperceptions about the pervasiveness of certain behaviours such as drinking and driving. The study found that in terms of behaviour, compared to the control locations, there was a 13.7% decrease in the percentage reporting driving after drinking, as well as a 15% increase in the percentage reporting using a designated driver when drinking. Compared to control locations, the campaign also reduced misperceptions about the prevalence of drinking and driving (Linkenbach and Perkins 2005). "By providing people with clear, accurate information about the standards of behaviour that exist in

their communities, social norms campaigns change people's misperceptions about their peers' behaviour" (Linkenbach and Perkins 2005, p.8).

The availability of safe modes of transport to young drivers also plays a major role in the drinking driving problem. To illustrate, a European study examining modes of transport to and from nightlife settings showed that a major reason for not using the bus or train to return home was that they did not run late enough. This leaves fewer alternative methods of returning home which may promote the use of unsafe transportation methods such as riding with an intoxicated driver (Calafat et al. 2009). To reduce both driving under the influence as well as riding with an impaired driver, increasing the availability of public transportation could provide additional options for individuals to return home safely after drinking.

Using interview data from youth at both the ages of 21 and 26 from New Zealand, Morrison et al. (2002) found that drivers and passengers were in a similar state of drunkenness, or sobriety, so it would be difficult to distinguish between someone who is impaired, but still legally able to drive versus someone who is intoxicated and legally unable to drive. In such situations these passengers may be too impaired to fully realize the driver's state of impairment and in turn may not be fully capable of discerning the riskiness of riding with these drivers. Thus, encouraging passengers to look for and recognize signs of impairment in others in order to make sensible choices should also be emphasized (Cartwright and Asbridge 2011).

Poulin et al. (2006) found that factors that are outside of the adolescent's control, such as living in a rural area, increase the risk of riding with a drinking driver. These findings suggest that inequities in transportation options for adolescents do exist. Thus, interventions need to also account for neighbourhood and social structural factors as well as individual factors. These authors suggest mitigating the impact of such factors by, for example, promoting the planning of safe rides for events ahead of time by adolescents, parents and event organizers to at least allow the option of a safe ride home.

Chen et al.'s (2008) finding that parents are an important social control mechanism for risky driving behaviours including the use of alcohol suggests that "positive family processes may not only directly prevent risky or problem behaviours among adolescents, but also help develop positive assets or strengths in youth for preventing such behaviours" (Chen et al. 2008, p.582). Further, an association between parents' perceived approval of driving under the influence and having ridden with a drinking driver may suggest that teens are riding with drinking parents. In fact, an Alberta survey of drivers aged 18 to 29 found that when asked if in the last three years if one of their parents ever drove after having consumed at least three drinks within a four hour time period, 21% said yes (Rothe and Kokotilo 2005). Thus prevention programs that address adult behaviour or at least their interactions with their teens may be beneficial. Moreover, Chen et al. (2008) argue that no single strategy can be fully effective at preventing driving under the influence and riding with a drinking driver; therefore, a comprehensive approach is necessary.

Finally, as research suggests that drug use is becoming a significant contributor to the impaired driving problem, (Maxwell et al. 2009) education programs should also focus on drug consumption and the effects of drug use on driving rather than primarily focusing on alcohol.

## **Summary**

While young drivers make up a small proportion of the drinking and driving problem relative to other drivers, some research has shown that when young drivers do drink and drive, they are more likely than adults to experience an alcohol related crash (Bingham et al. 2009). The use of drugs, other than alcohol, while driving is also a growing concern and there is an increasing amount of research that speaks to the drug driving problem in general (Beasley et al. 2011) as well as among youth.

There is no universal definition of a young driver, as many studies use different age ranges to define this population (Nickel 2009). Generally, self-reported drinking and driving among young drivers is around 10% to 20%. In terms of drug use and driving among young drivers, results of a 2009 Ontario survey showed that 17% of drivers in grades 10 to 12 reported driving a vehicle within one hour of using cannabis in the past 12 months (Paglia-Boak et al. 2009). Riding with a drinking or drugged driver is also an issue of concern and some evidence suggests that this practice is more common among younger drivers.

With regards to alcohol related fatalities among young drivers in Canada, in 2009, of all the people who died in alcohol-related crashes, 11% were between the ages of 16 and 19, 20.8% were between the ages of 20 and 25 and 20.8% were between 26 and 35 years of age. The percentage for other age groups were smaller and decreased with increasing age with the exception of those under 16 years of age (2.2%) (Mayhew et al. 2011). Those under the age of 16, however, account for a much smaller proportion of drivers in general. Similar percentages were found for alcohol-related serious injury crashes in Canada (Mayhew et al. 2011).

In terms of the profile of young impaired drivers, males, particularly young males, are more likely than females or older age groups to self-report drink driving behavior, to be arrested for DWI, to be fatally injured, or, to fatally injure others while driving drunk (Mayhew et al. 2003; Zador et al. 2000). With regards to different age categories among young drivers, positive BAC levels seem to be the least common for the youngest drivers (usually under the age of 19) (Mayhew et al. 2011). Being of lower socioeconomic status and having lower educational attainment were also associated with having drink driving incidents (Morrison et al. 2002). Certain behavioural characteristics have been linked to substance use and driving such as substance use in general, as well as the propensity to engage in other risky driving activities (Calafat et al. 2009; Walker et al. 2005). Finally, some research has demonstrated a relationship between drinking location and likelihood of driving after drinking or riding with a drinking driver including drinking in restaurants, in cars or in other unstructured settings such as parties or hanging out with friends in an outdoor area.

With respect to interventions for young impaired drivers, research suggests that having a previous alcohol related driving offence at a younger age increases the likelihood of having a subsequent alcohol related crash. Thus, treatment for young drinking drivers is even more important among this group to prevent future recidivism.

Most jurisdictions in Canada and the U.S. have some form of GDL program where restrictions are placed on the new drivers to minimize their exposure to risk and these driving restrictions are gradually lifted until graduation to a full licence (Mayhew et al. 2005). Unfortunately, research is lacking with regards to how different components of GDL affect the fatality and injury risk of novice drivers (Vanlaar et al. 2009).

Social norms campaigns have been shown to decrease percentages of self-reported driving after drinking, increase the percentage reporting using a designated driver when drinking, and also reduce misperceptions about the prevalence of drinking and driving (Linkenbach and Perkins 2005).

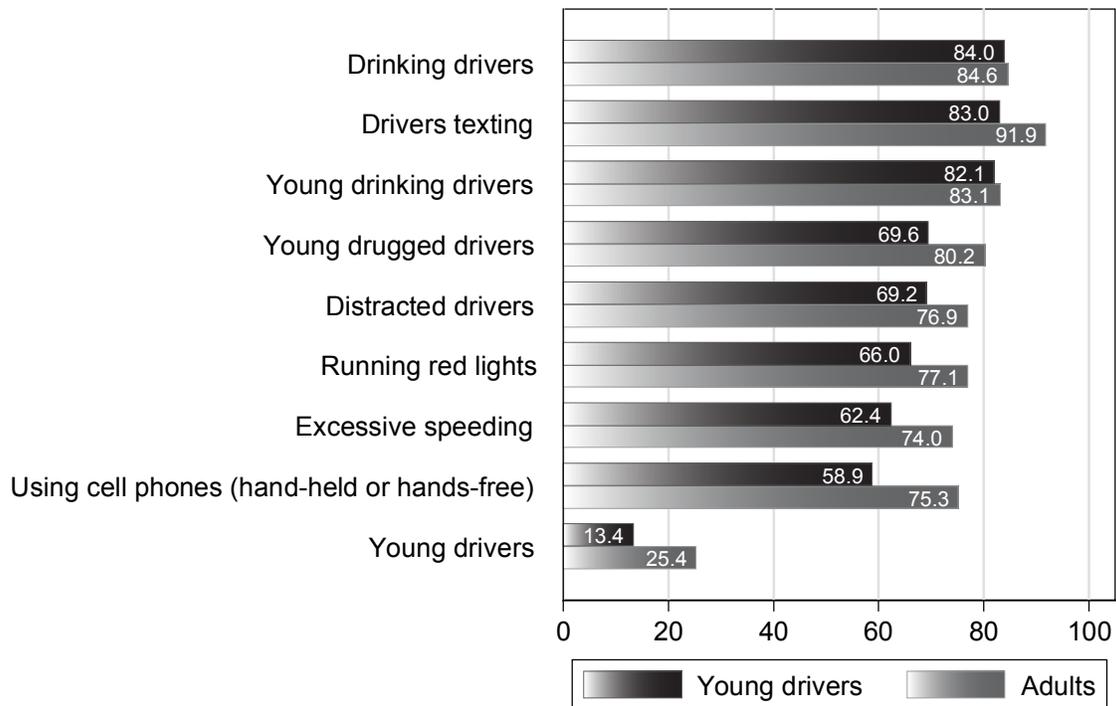
To reduce both driving under the influence as well as riding with an impaired driver, increasing the availability of public transportation could provide additional options for individuals to get home safely after drinking. Encouraging passengers to look for and recognize signs of impairment in others in order to make sensible choices should also be emphasized. Further, promoting the planning of safe rides for events ahead of time by adolescents, parents and event organizers can help allow the option of a safe ride home. In addition, prevention programs that address adult behaviour or at least their interactions with their teens may be beneficial. Finally, as drug use is becoming a significant contributor to the impaired driving problem, education programs should also focus on drug consumption and the effects of drug use on driving.

## CONCERN ABOUT YOUTH DRINKING AND DRIVING

As mentioned previously, young drivers were oversampled to allow for comparisons between young drivers aged 16 to 24 and adult drivers above the age of 24. The final sample comprised 1,601 drivers, 484 of which were considered young drivers (aged 16-24). Note that the results reported here are different from those in the 2010 RSM on Drinking and Driving as the results from this previous RSM were based on the entire sample whereas the results reported here are based on two subsets of this sample (young drivers aged 16 to 24 versus adult drivers above the age of 24).

### ***Is youth drinking and driving a major road safety concern for young Canadians compared to adults?***

Canadians were asked about a series of specific road safety concerns and about how serious they perceive those problems to be, ranging from 1 (not a problem at all) to 6 (an extremely serious problem); for scoring purposes, respondents were coded as being concerned about an issue if he or she chose a five or six. Figure 1 presents results for young drivers aged 16-24 compared to results for adults 25 and older.



**Figure 1.** Percentage of road safety issues that are perceived by young drivers (16-24) and adult drivers (25+) as a very or extremely serious problem

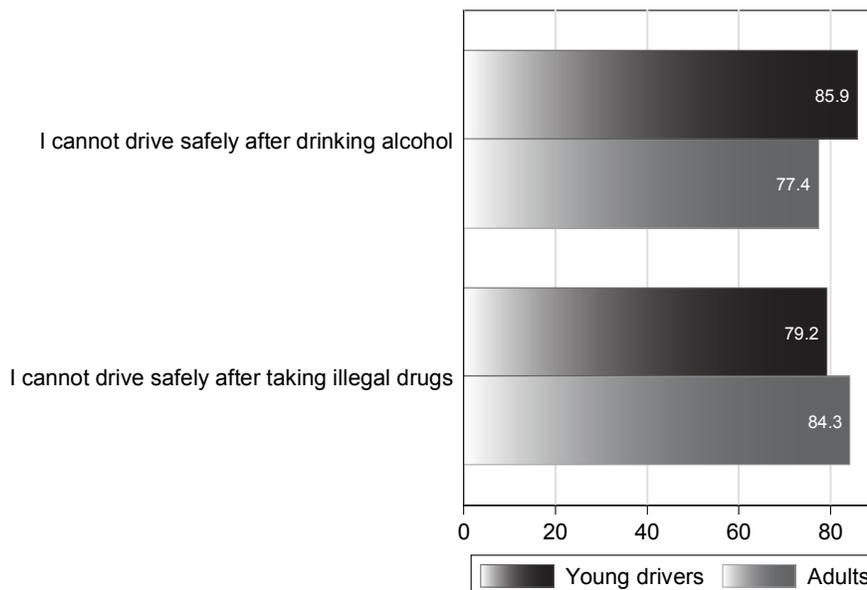
As can be seen in Figure 1, of all the road safety issues, young drivers impaired by alcohol were rated as a very or extremely serious problem by 82.1% of young Canadian drivers aged 16-24 compared to 83.1% for adults. This was the third highest rating of concern for young drivers after drinking drivers which was 84% for young drivers and 84.6% for adults, and drivers texting which was 83% for young drivers versus 91.9% for adults. The figure above further show that 69.6% of young drivers compared to 80.2% for adults think that young drivers impaired by drugs other than alcohol are a very or extremely serious problem. For young drivers, the next highest ratings of concern were for distracted drivers at 69.2% compared to 76.9% for adults, running red lights at 66% compared to 77.1% for adults, excessive speeding at 64.2% compared to 74% for adults, drivers using cell phones at 58.9% compared to 75.3% for adults, and concern about young drivers in general at 13.4% versus 25.4% for adults was at the bottom of the list.

Note that these differences between young drivers and adult drivers were significant, with the exception of the differences for drinking drivers and young drinking drivers. Thus when it comes to opinions about the severity of the drinking driving problem, young drivers and adult drivers do not differ.

# ATTITUDES TOWARDS YOUTH DRINKING AND DRIVING

## *Do young Canadians and adults think substance use and driving is dangerous?*

To gauge Canadians' attitudes towards impaired driving, respondents were asked about the extent to which they agree or disagree with various statements regarding the use of substances while driving. These questions were rated on a scale from 1 (strongly disagree) to 6 (strongly agree); for scoring purposes, respondents were coded as agreeing with an issue if he or she chose a five or six. Results are presented for young drivers compared to adult drivers.



**Figure 2.** Percentage of young drivers compared to adults who agree with various statements about the use of substances while driving

As can be seen in Figure 2 the majority of young drivers between the ages of 16 and 24 (85.9%) agreed that they cannot drive safely when they have been drinking alcohol compared to 77.4% for adult drivers above the age of 24. With regards to drugs, 79.4% of young drivers agreed that taking illegal drugs is so impairing that you cannot drive safely when you are under the influence compared to 84.3% for adults. Thus, the answers given by young drivers and adult drivers are reversed. Note that both of these differences were significant.

When asked whether or not the blood alcohol level limit specified in the Criminal Code of Canada of 0.08 BAC is appropriate, 70.8% of young drivers aged 16 to 24 agree that it is. Of the 29.2% who did not think that it is appropriate, the majority thought that it should be lower (78.8%) and 21.2% thought it should be higher. As for adults over the age of 24, results were similar. The majority (67.9%) think that the legal limit of 0.08 is appropriate. Of the 32.1% adults who do not think that it is appropriate, the majority thought that

it should be lower (85.1%) and 14.9% thought it should be higher. These differences were not significant. Taken together, these results suggest that young drivers and adult drivers have comparable opinions about the legal limit for impaired driving offences.

## **MAGNITUDE OF THE PROBLEM OF YOUTH DRINKING AND DRIVING**

### ***How often do young Canadians drink and drive compared to adults?***

When asked about driving within two hours of consuming any amount of alcohol in the past 30 days, 11.9% of the 484 young drivers aged 16 to 24 in the sample admitted to doing this compared to 25.1% for adult drivers over the age of 24. Note that this difference was significant. It warrants mentioning that this includes drinking and driving after consuming lower levels of alcohol and levels below the legal limit or administrative limits (where they exist).

When asked about driving when they thought they were over the legal limit in the past 12 months, 7.9% of young drivers admitted to doing this compared to 5.4% for adults. This difference however, was not significant. Furthermore, of the 7.9% of young drivers who drove a motor vehicle after drinking when they thought they were over the legal limit, 54.4% reported that the last time they drove under such conditions they did so with passengers in the vehicle compared to 37% for adult drivers over the age of 24. This difference was not significant.

Respondents were asked about alternative solutions to driving after drinking that they have used in the last 30 days when they had a drink containing alcohol. The most frequently reported alternative was to ask someone else to drive (66.6% vs. 47.7% for adults), followed by taking a taxi (41.6% vs. 18.3% for adults), taking public transport (40% vs. 13.5% for adults), using other solutions such as walking or staying over at a friend's (34.4% vs. 14% for adults), and waiting a couple of hours until they were sober and ready to drive (30.4% vs. 29.9% for adults). This last difference between young drivers and adult drivers with regards to waiting before driving after drinking was not significant. However, all other differences about alternative solutions were significant.

### ***Where do young Canadian drivers do most of their drinking compared to adults?***

In 2010, the majority of young drivers aged 16 to 24 (94.1% vs. 92.4% for adults) who drove when they thought they were over the legal limit reported doing most of their drinking when they were at a location where they were likely drinking with others (i.e., at the home of a friend or relative, a bar, a restaurant, a party, or other locations) and 5.8% (7.6% for adults) reported doing most of their drinking at their own home prior to driving. Note that these percentages are based on a low number of observations and are not stable, thus tests of significance between young drivers and adult drivers were not performed here.

Only about 6% of young drunk drivers are potentially drinking by themselves at home, which means that 94% are in the midst of friends or family who can take action to influence behaviour and prevent the problem. In fact, 65.3% of young drivers reported that they have asked a person not to drive because they thought that person had drunk too much (66.8% for adults). However, 34.7% reported that they have not (33.2% for adults).

Of those young drivers who said that they have not asked someone not to drive when they thought that person had drunk too much, 68.8% (69.9% for adults) said it was because they have never been in such a situation. However, of those who have been in a situation with someone who was driving after drinking, 26.4% of young drivers (16.7% for adults) said they did not ask the person not to drive because they felt it would be embarrassing or awkward, 10.5% (18.9% for adults) did not do this because they were concerned about confronting the drinking driver, 19.5% (11.2%) didn't think it was their responsibility to do so, 33.8% (29.1% for adults) were aware that someone else had already spoken up to the drinking driver, and 42.8% (48.5% for adults) reported other reasons such as the driver was evidently not impaired, or it was a long time ago when the consequences of drinking and driving were not known. None of these differences between young drivers and adult drivers were significant.

### ***How many young Canadians have been a passenger in a vehicle driven by someone who has been drinking compared to adults?***

Within the last month, 6.5% of young Canadian drivers indicated that they had been a passenger in a motor vehicle driven by someone who has been drinking on one occasion, and 7.4% indicated that they had been a passenger between two and ten such occasions in the last month. These passengers are putting themselves at risk. Even when BACs are low the risk of being in a crash and the seriousness of potential injuries increase substantially. The corresponding percentages for adults were similar to those of youth (5.8% on one occasion and 6.2% between two and twelve such occasions) and the differences were not significant.

### ***How many young Canadians are affected by drinking and driving compared to adults?***

For young drivers between the ages of 16 and 24, 20.1% know of a family member or close friend who has been the victim of a drinking and driving collision that they did not cause, and 16.2% know of a family member or close friend who was drinking and driving and caused a collision where they were at fault. Note that Canadians were asked only about family members or close friends, so these numbers likely underestimate the problem. The percentages for adults were similar (19.3% and 13.1% respectively) and were not significantly different from those of young drivers.

# MAGNITUDE OF THE PROBLEM OF YOUTH DRUG USE AND DRIVING

## *How often do young Canadians drive after using drugs compared to adults?*

The use of drugs while driving is a growing concern. There are many different drugs (both legal and illegal) that can have an impairing effect on driving performance. For this reason, respondents were additionally asked a few questions about drugs. Of the 21.4% of young drivers (5.1% for adults) who have used marijuana or hashish in the past 12 months, 19.7% (28.8% for adults) reported that they have driven a motor vehicle within two hours of using marijuana or hashish. Of the 12.8% of young drivers (3.6% for adults) who have used illegal drugs in the last 12 months, 9.5% (18.4% for adults) reported that they have driven a motor vehicle within two hours of using an illegal drug. These differences were not significant. In sum, more young drivers report using illicit drugs compared to older drivers, but fewer appear to report driving after using drugs.

## LEVEL OF SUPPORT FOR MEASURES TO INCREASE DRIVER SAFETY

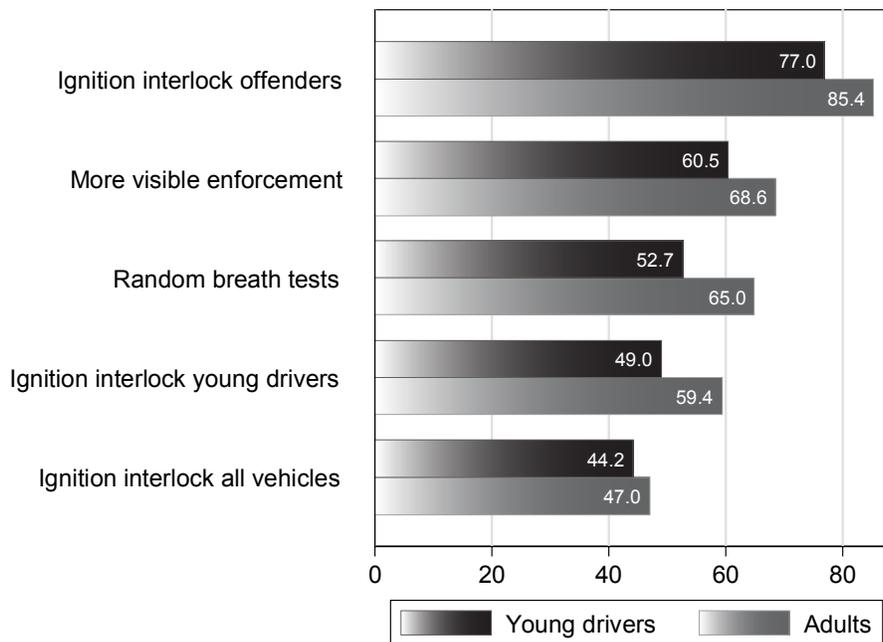
Canadians were asked about the extent to which they agree with the use of various measures for dealing with drinking and driving, on a scale from 1 (strongly disagree) to 6 (strongly agree). Responses from 5 to 6 were recoded as “supportive” of the measure in question<sup>1</sup>. Both young Canadians and adults show strong support for a variety of measures to detect and prevent drinking and driving.

As evident in Figure 3, the survey results indicate that:

- > 77% (95%-CI: 73.1%-81.3%) of young drivers agreed that a device that prevents a drinking driver from starting the car should be mandatory for all convicted impaired drivers compared to 85.4% (95%-CI: 83%-87.8%) for adults;
- > 60.5% (95%-CI: 55.7%-65.6%) agreed that there should be more visible enforcement for drinking drivers compared to 68.6% (95%-CI: 65.3%-71.8%) for adults;
- > 52.7% (95%-CI: 47.7%-57.9%) agreed that the police should be allowed to do random breath tests to detect drinking drivers compared to 65% (95%-CI: 61.6%-68.3%) for adults;
- > 49% (95%-CI: 44%-54.2%) agreed that a device that prevents a driver from starting the car when he or she has been drinking should be mandatory for young drivers compared to 59.4% (95%-CI: 55.9%-62.8%) for adults; and,
- > 44.2% (95%-CI: 39.3%-49.4%) of young drivers agreed that a device that prevents a driver from starting the car when he or she has been drinking should be mandatory for all vehicles compared to 47% (95%-CI: 43.5%-50.5%) for adult drivers.

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<sup>1</sup> Note that such a coding scheme measures support in a conservative fashion.



**Figure 3.** Percentage of young drivers compared to adults who agree with various methods for dealing with drinking and driving

Note that all the difference between young drivers and adults for the first four measures in Figure 3 were significant, but the difference between young and adult drivers with regards to the last measure (level of agreement for a device that prevents a driver from starting the car when he or she has been drinking should be mandatory for all vehicles) was not significant.

## SUMMARY AND CONCLUSIONS

Young drivers make up a small proportion of the drinking and driving problem. However, some research has shown that when young drivers do drink and drive, they are more likely than adults to experience an alcohol related crash (Bingham et al. 2009). The use of drugs, other than alcohol, while driving is also a growing concern.

Results of this survey showed that young drivers impaired by alcohol were rated as a very or extremely serious problem by 82.1% of young Canadian drivers aged 16-24 compared to 83.1% for adult drivers above the age of 24. Thus, when it comes to the opinions about the severity of the young drinking driver problem, young drivers and adults do not differ. In addition, 69.6% of young drivers compared to 80.2% for adults think that young drivers impaired by drugs other than alcohol are a very or extremely serious problem. Note that this difference was significant.

The majority of young drivers (85.9%) agreed that they cannot drive safely when they have been drinking alcohol compared to 77.4% for adults. With regards to drugs, 79.4% of young drivers agreed that taking

illegal drugs is so impairing that you cannot drive safely when you are under the influence compared to 84.3% for adults. Thus, the answers given by young drivers and adult drivers are reversed and were significantly different.

When asked about driving within two hours of consuming any amount of alcohol in the past 30 days, 11.9% of young drivers aged 16 to 24 in the sample admitted to doing this compared to 25.1% for adult drivers over the age of 24. Note that this difference was significant. This is in line with other research which shows that self-reported driving within an hour of having two or more drinks among young drivers is between 10% and 20% (Adlaf et al. 2003; Ialomiteanu et al. 2011; Paglia-Boak et al. 2009; Rothe and Kokotilo 2005).

When asked about driving when they thought they were over the legal limit in the past 12 months, 7.9% of young drivers admitted to doing this compared to 5.4% for adults. This difference however, was not significant. Of the 7.9% of young drivers who drove a motor vehicle after drinking when they thought they were over the legal limit, 54.4% reported that the last time they drove under such conditions they did so with passengers in the vehicle compared to 37% for adult drivers. This difference was not significant.

Although more than half of the sample of young drivers admitted to driving with passengers in the vehicle when they thought they were over the legal limit in the past 12 months, within the last month, only 6.5% of young Canadian drivers indicated that they had been a passenger in a motor vehicle driven by someone who has been drinking on one occasion, and 7.4% indicated that they had been a passenger between two and ten such occasions.

In terms of drinking location, the majority of young drivers aged 16 to 24 (94.1% vs. 92.4% for adults) who drove when they thought they were over the legal limit reported doing most of their drinking when they were at a location where they were likely drinking with others (i.e., at the home of a friend or relative, a bar, a restaurant, a party, or other locations) and 5.8% (7.6% for adults) reported doing most of their drinking at their own home prior to driving. This means that at least 94% are in the midst of friends or family who can take action to influence behaviour and prevent the problem. In fact, 65.3% of young drivers reported that they have asked a person not to drive because they thought that person had drunk too much (66.8% for adults). An Alberta survey of 18-29 year old drivers also showed that the majority of respondents (78.8%) have tried to stop someone they know from drinking and driving (Rothe and Kokotilo 2005).

More young drivers reported using illicit drugs in the past 12 months compared to older drivers with 21.4% of young drivers (5.1% for adults) reporting having used marijuana or hashish and 12.8% of young drivers (3.6% for adults) reporting having used illegal drugs. However, fewer young drivers appear to report driving after using illicit drugs with 19.7% of young drivers (28.8% for adults) reporting that they have driven a motor vehicle within two hours of using marijuana or hashish and 9.5% (18.4% for adults) reporting that they have driven a motor vehicle within two hours of using an illegal drug. Note that these differences were not significant. The rate of marijuana use while driving is similar to that found in a 2009 Ontario survey

showing that 17% of drivers in grades 10 to 12 reported driving a vehicle within one hour of using cannabis in the past 12 months (Paglia-Boak et al. 2009).

Finally, Canadians were asked to what extent they agree with various measures to increase driver safety. Results indicated that 77% of young drivers agreed that a device that prevents a drinking driver from starting the car should be mandatory for all convicted impaired drivers compared to 85.4% for adults; 60.5% agreed that there should be more visible enforcement for drinking drivers compared to 68.6% for adults; 52.7% agreed that the police should be allowed to do random breath tests to detect drinking drivers compared to 65% for adults; 49% agreed that a device that prevents a driver from starting the car when he or she has been drinking should be mandatory for young drivers compared to 59.4% for adults; and, 44.2% of young drivers agreed that a device that prevents a driver from starting the car when he or she has been drinking should be mandatory for all vehicles compared to 47% for adult drivers.

Due to the high toll on the roads, youth substance use and driving warrants our concern. To reduce both driving under the influence as well as riding with an impaired driver as a passenger, increasing the availability of public transportation could provide additional options for individuals to get home safely after drinking. Encouraging passengers to look for and recognize signs of impairment in others in order to make sensible choices should also be emphasized as well as promoting the planning of safe rides for events ahead of time by adolescents, parents and event organizers. In addition, prevention programs that address adult behaviour or at least their interactions with their teens may be beneficial. Finally, as drug use is becoming a significant contributor to the impaired driving problem, education programs should also focus on drug consumption and the effects of drug use on driving.

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