

The Road Safety Monitor **2004**

Young Drivers ●



**TRAFFIC
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A DRIVING FORCE FOR SAFETY

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 2004

Young Drivers

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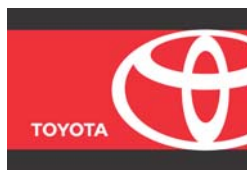
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Executive Summary —●

- ◆ The Road Safety Monitor is an annual public opinion survey by the Traffic Injury Research Foundation (TIRF) that takes the pulse of the nation on key road safety issues by means of a comprehensive telephone survey of a random, representative sample of Canadian drivers.
- ◆ The results from this fourth edition of the Road Safety Monitor are being released in a series of reports that cover several key issues – the present one focuses on young drivers.
- ◆ Young drivers are overrepresented in road crashes. They represent 13% of licensed drivers in Canada but account for 25% of all driver deaths and injuries. Although the number of deaths and injuries have declined, road crashes remain the leading cause of death for young people in Canada.
- ◆ Despite the magnitude of the problem, most Canadians do not consider young drivers to be a particularly serious road safety issue -- only 24% see young drivers as a serious or extremely serious problem.
- ◆ Greater concern is expressed about specific behaviours of young drivers -- 84% of Canadians are concerned about the use of alcohol and drugs by young drivers. This is despite the fact that young drivers are least likely to drive after drinking.
- ◆ Young drivers are more likely than older drivers to engage in a variety of other high-risk driving behaviours. For example:
 - 38% of 16 to 19 years olds report taking a risk while driving for fun. Only 12% of those age 45 to 54 report doing so;
 - 66% of teenage drivers go driving just for the fun of it, at least occasionally. About one-third of drivers age 35 to 54 do so;
 - over 90% of young drivers report driving in excess of the posted speed limit. The incidence of speeding decreases steadily with increasing driver age; and,
 - three-quarters of drivers 16 to 19 say that they speed up to get through a traffic light before it changes. This behaviour also decreases progressively among older drivers.
- ◆ Young people report driving about 300 km in a month, well below the 1,000 km reported by older drivers.
- ◆ Despite the relatively low number of kilometres driven, young drivers are more likely than older drivers to receive a traffic ticket and to be involved in a collision:
 - 20% of those age 16 to 19 report receiving a traffic ticket in the past 12 months. This compares with less than 10% among drivers 25 and over.
 - 16% of drivers age 16 to 19 report being involved in a traffic crash in the past 12 months. This compares with 6% of drivers age 25 and over.
- ◆ Canadian drivers support initiatives to protect young drivers. 84% support mandatory driver education; 62% are in favour of requiring new drivers to hold a learner's permit for a minimum of 12 months; and just over half agree with improving the licensing test to ensure a new driver's ability to drive safely.



The Road Safety Monitor —●

The Road Safety Monitor is an annual public opinion survey developed 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;
- ◆ how they behave on the highways; and
- ◆ what they know and don't know about safe driving practices.

Rationale

Information on public knowledge about road safety issues is valuable for determining the specific areas where awareness needs to be heightened and knowledge improved. Information on public attitudes toward road safety and information about driving habits and safety practices is valuable for guiding program development and policy decisions.

Annual monitoring in these areas permits an assessment of changes in knowledge and awareness as well as changes in safety practices and in the level of concern about persisting problems; it also helps identify new and emerging issues.

Structure

The TIRF Road Safety Monitor is designed to assess public opinion, awareness, knowledge, and practices on a broad range of important traffic safety issues. It includes a core set of questions that are asked each year to provide information on trends in



attitudes, opinions and behaviours. This is supplemented by a set of questions that probe more deeply into special, topical, and emerging issues.

Reports from the 2001, 2002, and 2003 editions of the Road Safety Monitor can be accessed at: <http://trafficinjuryresearch.com/publications/publications.cfm>. This fourth edition of the TIRF Road Safety Monitor is being released in a series of reports. The present report, entitled *Young Drivers*, examines attitudes and perceptions of Canadians on issues related to young drivers and compares the driving practices of young drivers to those of older drivers. Forthcoming reports will deal with *Drinking and Driving*, and *Drowsy Driving*.



Method

This fourth edition of the TIRF Road Safety Monitor contained 102 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 took an average of approximately 20 minutes to complete.

The survey was administered by telephone to a random sample of Canadian drivers. Opinion Search Inc. conducted the interviews in May, 2004. Among the 5,666 households contacted in which a person was asked to participate, 3,735 (66%) refused, 68 (1.2%) terminated early, and 642 (11.3%) were not qualified.

A total of 1,221 respondents completed the interview. The data were weighted to ensure the results were representative of the national population. Based on a sample of this size, the results can be considered accurate within 2.8%, 19 times out of 20 (most conservative estimate).



Young Drivers —●

Background

Learning to drive and getting a driver's licence are milestones in the lives of many young people. Having a driver's licence provides independence, freedom and mobility, all of which are highly desirable goals for most Canadians, but particularly so for teenagers. It's an exciting period and, in many cases, marks the beginning of the transition into adulthood. However, few recognize that it also signals entry into a period during which the risk of death or serious injury as the result of a road crash is very high.

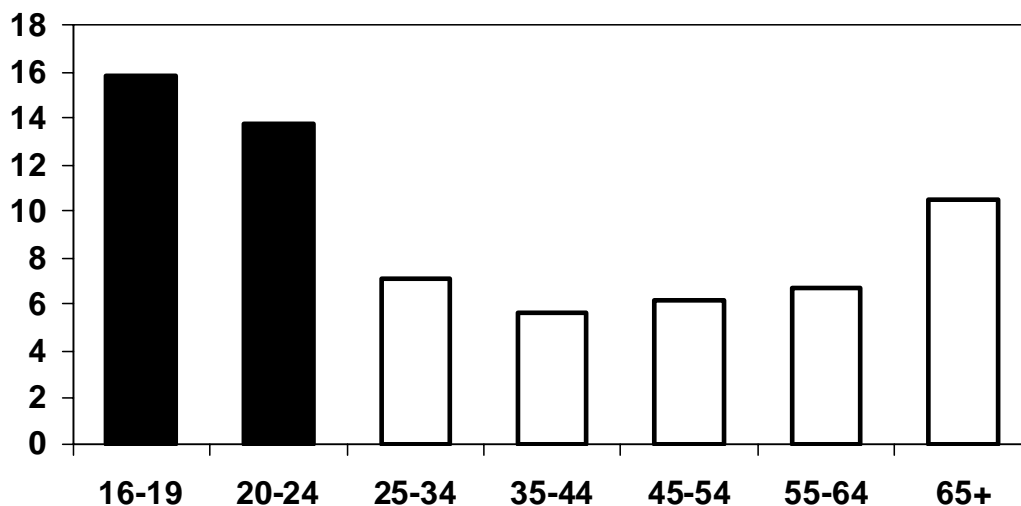
The statistics underscore the extent of the problem. In 2002 (the most recent year for which data are available) 331 teenagers (age 15 to 19) were killed in road crashes and 29,236 were injured. In addition, among those age 20-24, 365 were killed and 30,073 were injured. Road crashes account for 35% of all deaths among 15 to 19 year olds and 30% of deaths among those age 20-24, making road crashes the leading cause of death among young people (Statistics Canada 2003).

Even more disconcerting is the fact that young drivers are overrepresented in serious road crashes. Deaths and injuries to young drivers account for about 25% of *all* driver deaths and serious injuries in Canada but young drivers represent only 13% of all licensed drivers in Canada.

The extent of that overrepresentation can be quantified by dividing the number of drivers killed or injured in road crashes in various age groups by the corresponding number of licensed drivers. The resulting driver fatality rate (i.e., number of deaths per 100,000 drivers) is presented for seven age groups in Figure 1. It is clear that drivers aged 16 to 19 and 20 to 24 have the highest driver fatality rates of all age groups. In fact, 16 to 19 year old drivers have a fatality rate that is more than double that of drivers age 25 to 34 (15.8 compared to 7.1 fatalities per 100,000 licensed drivers, respectively).



Figure 1: Driver Fatality Rate*: Canada, 2001



* Number killed per 100,000 licensed drivers

It might be argued, however, that the reason young people have such high crash rates is that they drive more. To test this assumption, the number of driver deaths can be divided by the annual number of kilometres driven by each age group¹. When the amount of driving is taken into consideration, the elevated fatality rate of young drivers is even more pronounced. Drivers 16 to 19 years of age have a fatality rate that is four times that of drivers age 25 to 34, and nine times that of 45 to 54 year olds (a fatality rate of 27 per billion vehicle kilometres travelled for 16 to 19 year olds, compared to a rate of 6 for drivers age 25 to 34, and 3 for those between 45 and 54 years of age).

Young drivers are at high risk of crash involvement not only because they are relatively new drivers and lack the experience required to develop higher-order driving skills but also because of other factors, such as a sense of invulnerability, susceptibility to peer pressure and a willingness to take risks (Beirness 1996; Mayhew and Simpson, 1990; Simpson 1996). Ongoing research efforts at TIRF are investigating the relative contribution of inexperience and youth-related factors to the collisions of young drivers as a means to help refine educational and training programs and to guide licensing actions to better protect young road users.

¹ Estimates of annual kilometres driven are obtained from the Canadian Vehicle Survey (Statistics Canada 2002).



In this context, considerable strides have been made in recent years in addressing the problem of collisions involving young drivers. For example, the number of road fatalities among teenagers has dropped by nearly 20% in the past decade; driver deaths attributable to alcohol have also decreased dramatically -- since 1992, the percent of fatally injured teenage drivers with blood alcohol levels over 80 mg% decreased from 40% to 26%. A number of factors have contributed to these positive changes, including graduated driver licensing, which is now the norm in most jurisdictions. This system imposes restrictions on the new driver that are gradually removed as experience is gained. Graduated licensing has been shown to be effective in reducing deaths and injuries among young drivers (Mayhew et al. 2001; 2003).

Despite these gains, there is still a considerable distance to go, as the statistics cited above demonstrate. In developing programs and policies to continue to address the problem effectively, it is important to understand the extent of concern among Canadians about young drivers as a road safety issue and to identify how the attitudes and behaviours of young drivers differ from those of other older, and more experienced, drivers. This was a primary purpose of this edition of the Road Safety Monitor, which was designed to assess:

- the level of concern about young drivers;
- the attitudes and driving practices of young drivers;
- the level of support for various program and policy options to reduce the deaths and injuries to young people as a result of road crashes.



Survey Results —●

PUBLIC CONCERN

Does the public view young drivers as a major road safety issue?

In general, Canadians do not see young drivers as a particularly serious road safety issue. Indeed, only 24% of them think the problem of young drivers is serious or extremely serious. However, that perception changes dramatically if they are asked about the issue of young drivers who are impaired by alcohol or drugs – in this case, 78% think it is a serious or extremely serious problem.

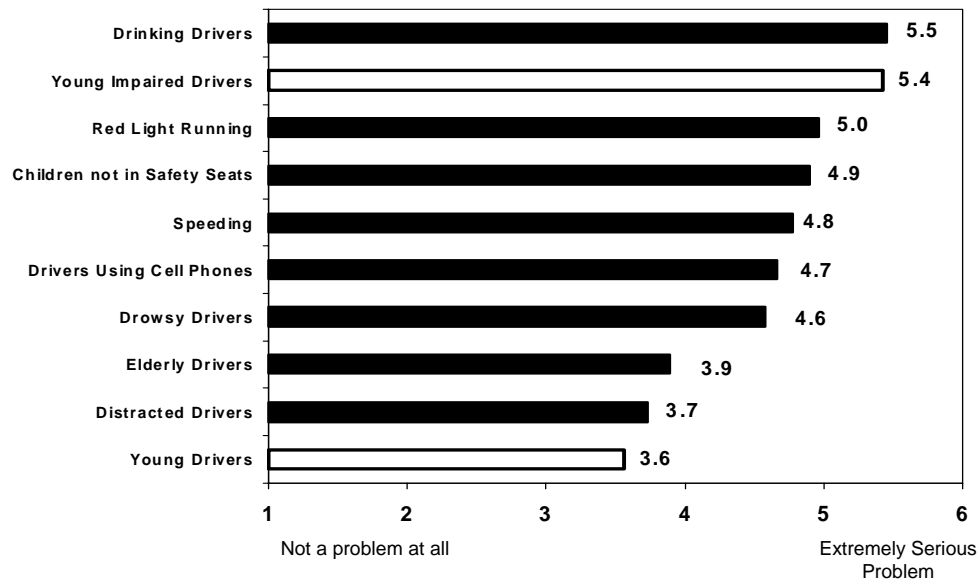
Indeed, when compared to other road safety issues, Canadians regard young drivers as one of the least serious. Figure 2 shows the average ratings of the perceived seriousness of a number of road safety issues, with 1 representing “Not a problem at all” and 6 representing “An extremely serious problem”. As can be seen, the problem of young drivers received an average rating of 3.6, the lowest rating among the ten issues presented. By contrast, the perceived seriousness of “young drivers impaired by alcohol or drugs” received an average rating of 5.4, second only to the overall issue of drinking drivers.

The relatively low level of public concern about young drivers appears incongruous with the extent of the problem as described in the Background. Public concern about young drivers appears linked more directly to their driving after using alcohol or drugs. But this, too, appears somewhat inconsistent with the fact that drinking and driving among young drivers has decreased dramatically.

Demographic differences. In general, women are more concerned about most road safety issues than men. This is also the case in terms of young drivers; 27% of



Figure 2: Perceived Seriousness of Traffic Safety Issues



women, compared to 20% of men, rate young drivers as a very serious or extremely serious problem². In addition, 88% of women, compared to 79% of men, rate young drivers impaired by alcohol or drugs as a very serious or extremely serious road safety problem.

Not surprisingly, the youngest group of respondents are least likely to view themselves as a serious problem. Only 10% of those aged 16 to 19 rated young drivers as a very serious or extremely serious problem. By contrast, at least 20% of those age 20 to 64 and 33% of those 65 years of age and over rated young drivers as a very serious or extremely serious problem.

SPECIFIC CONCERNS ABOUT YOUNG DRIVERS

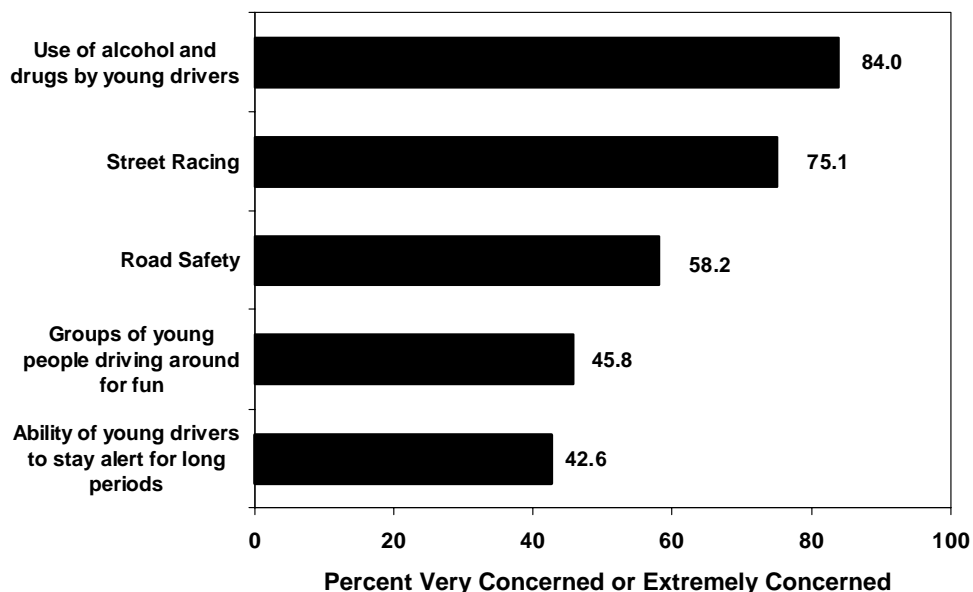
Although the public does not see young drivers as a particularly serious road safety issue in general, they do have concerns about specific behaviours involving young drivers. Respondents were asked to rate the extent to which they are concerned about

²In reporting the findings of the survey, unless stated otherwise, only those differences found to be statistically significant ($p < .05$) are presented.

four road safety issues involving young drivers, using a scale from 1 (not at all concerned) to 6 (extremely concerned).

The results are presented in Figure 3, which shows the percent of respondents who are very concerned or extremely concerned about each of four issues. For comparison, the level of concern about road safety in general is also included. Canadians are most concerned about the use of alcohol and drugs by young drivers -- 84% are very concerned or extremely concerned. About three-quarters of respondents are very concerned or extremely concerned about street racing.

Figure 3: Concern About Specific Road Safety Issues



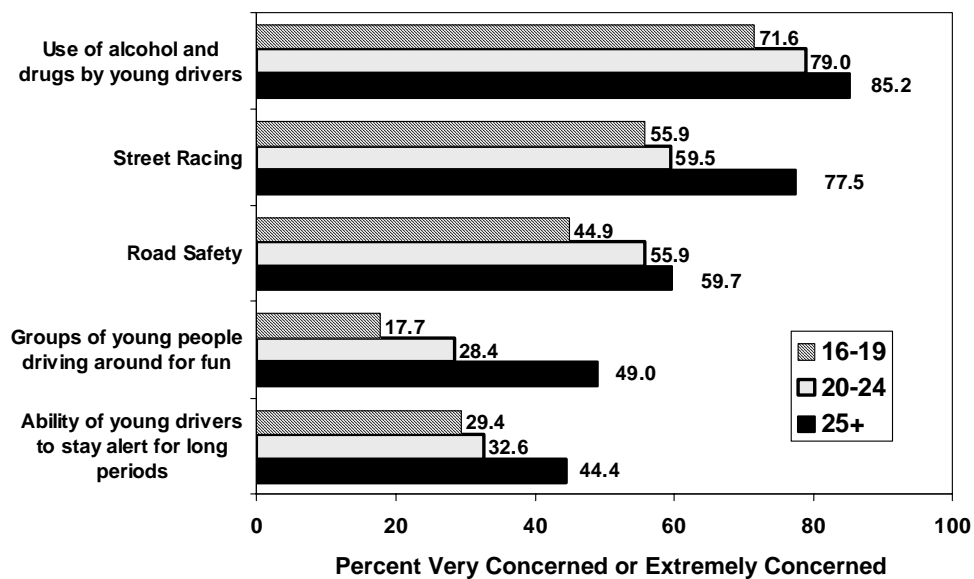
Less, but still substantial, concern was expressed about groups of young people driving around for fun (46% are extremely or very concerned) and the ability of young drivers to stay alert for long periods of driving (43%).

Demographic differences. Women expressed greater concern about all four road safety issues than men. For example, 53% of women and only 36% of men are very concerned or extremely concerned about young people driving around for fun. In addition, women also expressed greater concern about road safety in general.



The extent of concern about these specific road safety issues is also highly related to age, as shown in Figure 4, which displays the percent of respondents who are very concerned or extremely concerned about each issue. For simplicity, respondents have been divided into three age groups (16 to 19, 20 to 24, and 25 and over). Drivers age 16 to 19 express the least amount of concern about each of the issues. Those age 20 to 24 express greater concern but less than that of drivers 25 years of age and over.

Figure 4: Concern About Specific Road Safety Issues According to Age



Interestingly, even young drivers express a considerable degree of concern about the use of alcohol and drugs by their peers -- 72% of those age 16 to 19 and 79% of those age 20 to 24 are very concerned or extremely concerned about this problem. Among all issues, young drivers are least concerned about groups of young people driving around for fun.

Regional differences. Concern about the use of alcohol and drugs by young drivers and the ability of young drivers to stay awake for long periods is greater in the Atlantic region and Quebec than in other regions. Concern about street racing and groups of young people driving around for fun is greater in Ontario, Quebec and British Columbia than in other regions.

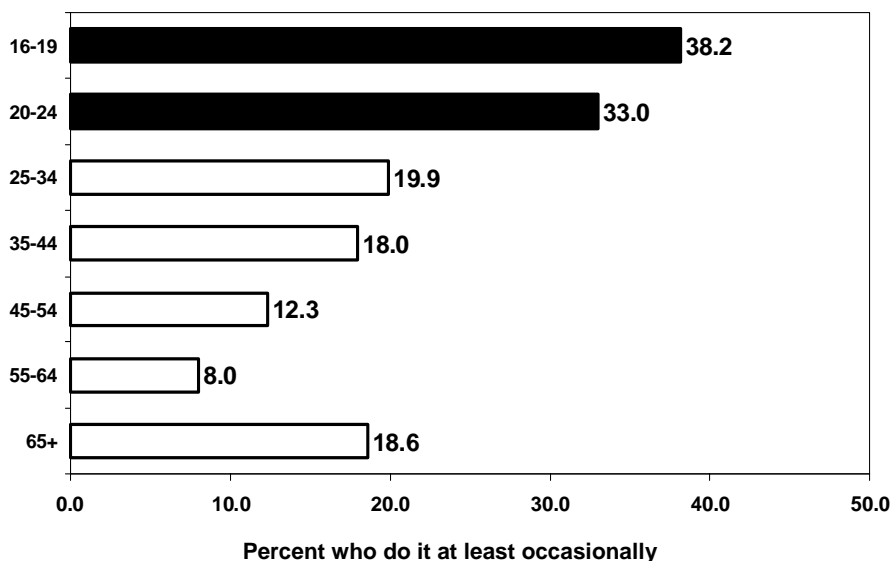
There are no differences between drivers in urban and rural areas in terms of their concerns about specific road safety issues.

DRIVING BEHAVIOURS

One of the factors that has been linked to the elevated crash rates of young drivers is that they engage in more high-risk driving behaviours than older drivers. To assess the extent to which young drivers admit to risky driving, respondents were asked to indicate (using a scale from 1 – never -- to 6 -- very often) how often they engaged in a variety of driving behaviours that are often associated with increased risk of crash involvement.

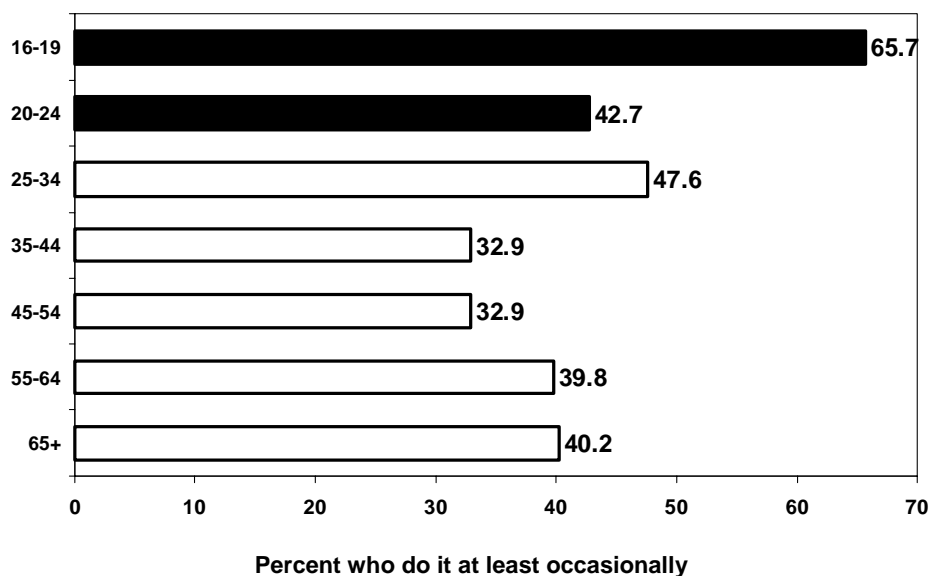
Respondents were asked how often they took a risk while driving, just for the fun of it. Although not a frequently reported behaviour, 18% of all Canadian drivers admitted doing so at least occasionally. Figure 5 presents the results according to age. Clearly, young drivers are more likely to take a deliberate risk while driving than older drivers -- 38% of those age 16 to 19 and 33% of those age 20 to 24 report doing so at least occasionally. The incidence of taking driving risks decreases progressively up to age 64. Interestingly, the proportion of drivers who report taking a risk while driving for fun increases among those age 65 and over (19%) and is comparable to that of drivers age 25 to 34 (20%).

Figure 5: Percent of Drivers who “Take a risk while driving for fun” According to Age



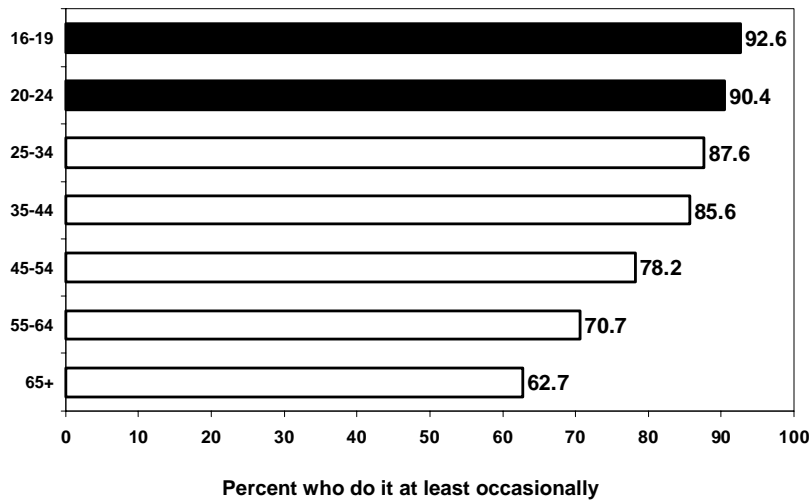
Driving has long been more than simply a means of transportation to get from one place to another. It is often an activity in itself -- i.e., something to do for pleasure or recreation. Overall, "going driving just for fun" is a relatively common activity among Canadian drivers, with 56% reporting they do it at least occasionally. Figure 6 shows the percent of respondents in each of seven age groups who report going driving for fun at least occasionally. As evident in the figure, this behaviour is most common among drivers age 16 to 19.

Figure 6: Percent of Drivers who "Going driving just for fun" According to Age



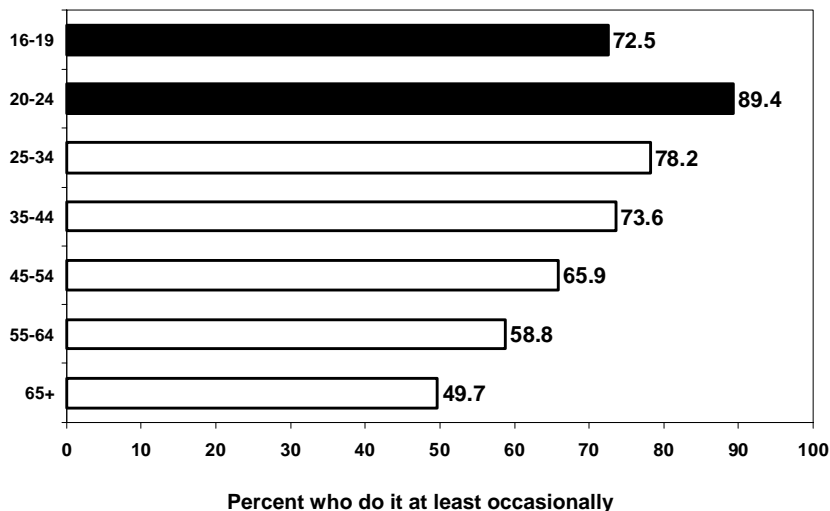
Speeding is often cited as a factor contributing to crashes and a behaviour that Canadians believe to be a serious road safety problem (see Figure 2). Despite their perception of speeding as a serious problem, over 80% of respondents indicated that they exceeded the speed limit at least occasionally. The percent of drivers in each of seven age groups who report speeding at least occasionally is presented in Figure 7. In this case, young drivers age 16 to 19 are most likely to report exceeding the posted speed limit (93%), followed closely by those age 20 to 24 (90%). The percent of drivers who speed decreases progressively in each of the older age groups, reaching a low of 63% among drivers 65 years of age and over.

Figure 7: Percent of Drivers who “Drive over the speed limit” According to Age



A risky behaviour that is related to running red lights is “speeding up to get through a traffic light before it changes”. Although not as common a behaviour as speeding, a substantial proportion of Canadian drivers – 69% – say they engage in this behaviour at least occasionally. The age distribution of drivers who report speeding up to get through a traffic light before it changes is presented in Figure 8. About three-quarters of teenage drivers report speeding up to make a traffic light, at least occasionally. Drivers age 20 to 24 are most likely to engage in this behaviour – 89% report doing so at least occasionally. The frequency of this behaviour decreases progressively in each older age group.

Figure 8: Percent of Drivers who “Speed up to get through the light before it changes” According to Age



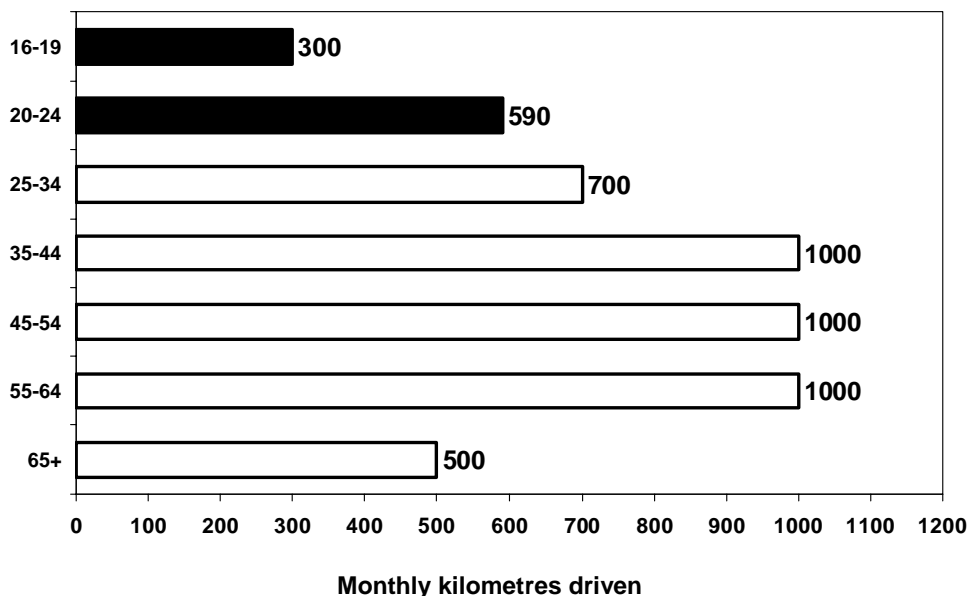
DRIVING EXPERIENCES

How much do young Canadians drive?

To determine the extent to which drivers are exposed to the risk of collision, respondents were asked to estimate the number of kilometres they drive in a typical month. The greater the number of kilometres travelled, the greater the exposure to risk and the chances of crash involvement. On average, Canadians report driving 1,612 kilometres in a typical month. Because some of them report travelling considerably further distances in a month, the median (the point that separates the top 50% of the distribution from the bottom 50%) is a better indicator of the amount of driving by the typical driver. The median number of kilometres travelled by Canadian drivers in a month is 1,000.

The amount of driving varies according to the age of the driver. Figure 9 presents the median number of kilometres driven in a typical month for each of seven age groups. It is evident that the youngest group of drivers report the lowest amount of driving -- i.e., 300 kilometres in a month. The amount of travel increases to 590 kilometres among 20 to 24 year olds and reaches a peak of 1000 kilometres among those drivers in the three age groups between 35 and 64 years of age. The number of monthly kilometres driven decreases to 500 among drivers 65 years of age and over.

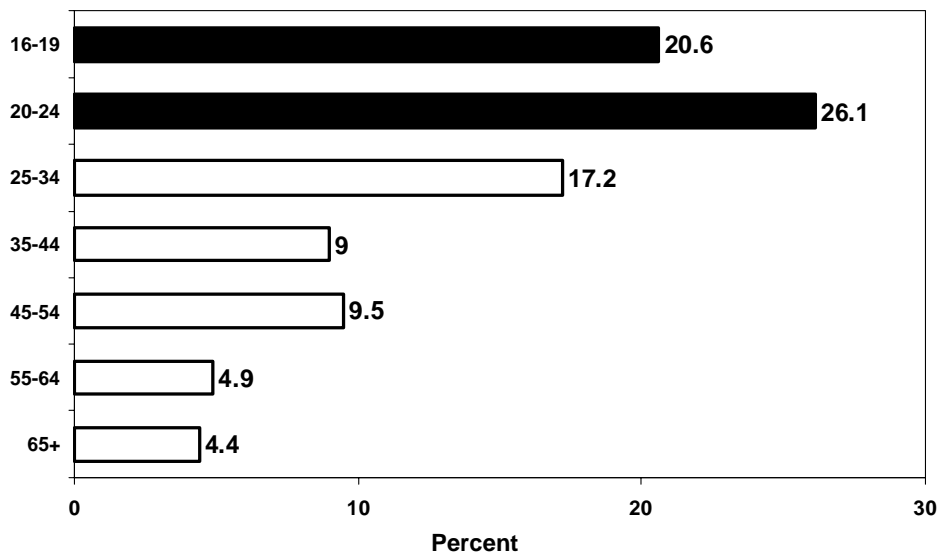
Figure 9: Median Number of Kilometres Driven in a Typical Month According to Age



How often do young drivers get traffic tickets?

Overall, 11.4% of Canadian drivers in the survey admitted to receiving a traffic ticket in the past twelve months -- 8.9% received one citation and 2.5% received two or more. The results described in a previous section showed that young drivers engage in a variety of high-risk driving behaviours, some of which involve violations of traffic law and could result in a traffic ticket. Not surprisingly then, just as high-risk driving behaviours were related to age, getting a ticket also varies according to the age of the driver. The percent of drivers in each of seven age groups who received at least one traffic ticket in the past twelve months is presented in Figure 10. The youngest age groups of drivers are most likely to get traffic tickets. One in five of the teenage drivers report having received a traffic ticket in the past twelve months. More than one-quarter of drivers age 20 to 24 said they had received a ticket. Older drivers are considerably less likely to get traffic tickets.

Figure 10: Percent of Drivers Who Have Received a Traffic Ticket According to Age



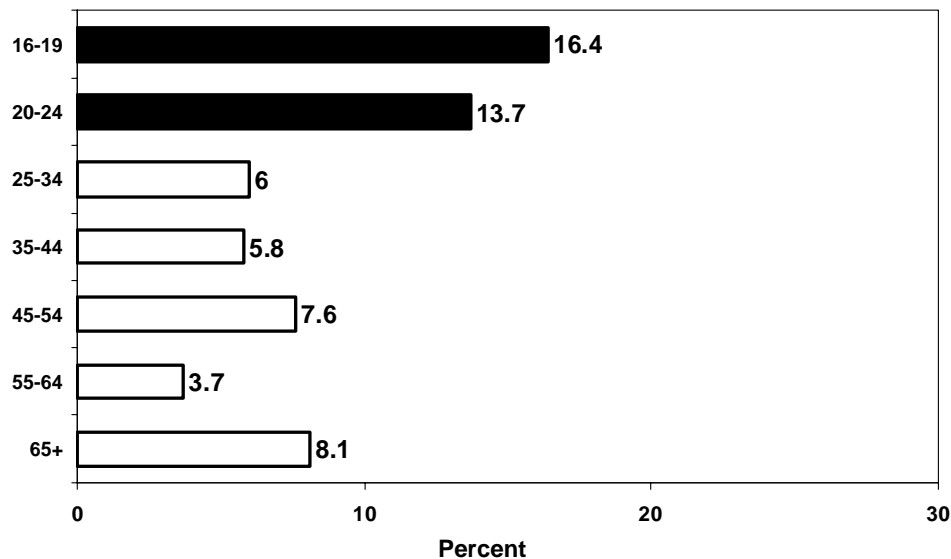
How often do young drivers crash?

Engaging in high-risk driving behaviours and getting traffic tickets should be associated with an increased likelihood of crash involvement. Not surprisingly, the self-reported



incidence of crash involvement also varies according to driver age. Figure 11 presents the percent of each age group who reported being involved in a traffic collision in the past twelve months. Drivers age 16 to 19 are most likely to report crash involvement, followed closely by drivers age 20 to 24 (16% and 14%, respectively). After age 25, reported crash involvement decreases dramatically to about 6% then increases to 8% among those age 65 and over.

Figure 11: Percent of Drivers Who Have Been Involved in a Traffic Collision According to Age



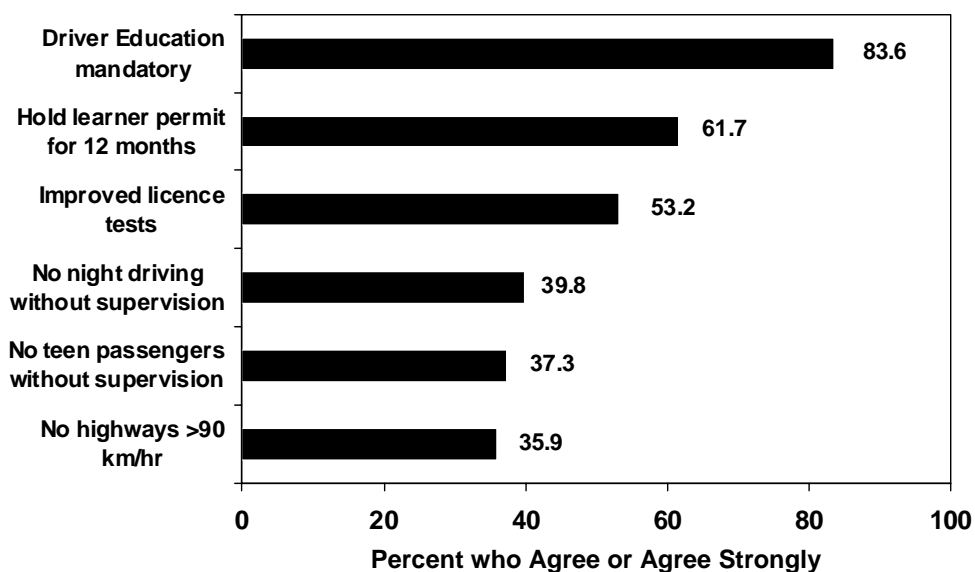
MEASURES TO REDUCE YOUNG DRIVER CRASHES

Survey respondents were asked to indicate, on a scale of 1 (strongly disagree) to 6 (strongly agree), the extent to which they support a number of approaches to deal with crashes involving young drivers. They were asked to indicate their level of support for six different policies directed at young drivers to reduce their involvement in collisions – making driver education mandatory, requiring new drivers to hold a learner’s permit for 12 months, improving the licensing test, and requiring new drivers to have a supervisor in the vehicle when driving at night, or with teen passengers, or when driving on highways with a speed limit over 90 km/hr. The results are shown in Figure 12.

Mandatory driver education is the most popular option -- 84% of respondents agree or strongly agree with this requirement. Requiring new drivers to hold a learner's permit for a minimum of twelve months is endorsed by 62% of Canadian drivers. And, just over half (53%) of respondents agree or strongly agree with improving the licensing test to ensure a new driver's ability to drive safely.

Somewhat surprisingly given the wide acceptance of graduated driver licensing in Canada, there is considerably less support for placing restrictions on the driving of young people. Less than 40% of respondents agree or strongly agree with requiring young drivers to have a supervisor in the vehicle when driving late at night, or with teenage passengers, or on roadways with speed limits greater than 90 km/hr.

Figure 12: Percent Who Agree with Various Young Driver Policy Options



Demographic differences. For all but one policy option, women express greater support than men. The exception was improving the licensing test for which men and women express an equivalent level of agreement.

Not surprisingly, young drivers are less likely to agree with each of the policy measures than older drivers. In fact, support for each measure increases with age. The exception is improving the licensing test where, although the same age-related pattern of support is present, the differences among age groups are not statistically significant.



Regional differences. Agreement with some of the measures to reduce young driver crashes varied by region. Requiring young drivers to hold a learner's permit for a minimum of twelve months finds the greatest level of support in Quebec, followed by the Prairie provinces, Ontario and the Atlantic provinces. Quebec, Ontario, Nova Scotia, and Newfoundland and Labrador already require a twelve-month learner period as does Alberta. The lowest level of support for a twelve-month learner period is found in British Columbia, which only recently increased the minimum learner period from six to twelve months.

Support for restricting nighttime driving by young drivers also varies by region. Agreement is strongest in the Atlantic provinces, where such a restriction is already in place in Nova Scotia and Newfoundland and Labrador as part of the intermediate stage of licensing. Respondents in Ontario are also supportive of a restriction on nighttime driving by young drivers. Drivers in Ontario with a learner's licence are not allowed to drive between the hours of midnight and 5 AM.

There are also regional differences in the level of agreement with restricting young drivers to highways with speed limits no greater than 90 km/hr. The greatest level of support for such a measure is found in Ontario and the Atlantic region. Ontario is the only province to have such a restriction in the learner phase of licensing.



Bibliography

- Beirness, D.J. (1996) The relationship between lifestyle factors and collisions involving young drivers. In H.M. Simpson (Ed) *New to the Road: Reducing the Risk for Young Motorists*, pp 71-77, Los Angeles: Youth Enhancement Services.
- Beirness, D.J., Simpson, H.M. and Desmond, K. (2003a) *The Road Safety Monitor: Drinking and Driving*. Ottawa: Traffic Injury Research Foundation.
- Beirness, D.J., Simpson, H.M. and Desmond, K. (2004) *The Road Safety Monitor: Commercial Operators and Vehicles*. Ottawa: Traffic Injury Research Foundation.
- Beirness, D.J., Simpson, H.M. and Desmond, K. (2003) *The Road Safety Monitor: Highway/Railway Crossing Safety*. Ottawa: Traffic Injury Research Foundation.
- Beirness, D.J., Simpson, H.M. and Desmond, K. (2002a) *The Road Safety Monitor: Risky Driving*. Ottawa: Traffic Injury Research Foundation.
- Beirness, D.J., Simpson, H.M. and Desmond, K. (2002b) *The Road Safety Monitor: Drinking and Driving*. Ottawa: Traffic Injury Research Foundation.
- Beirness, D.J., Simpson, H.M., Mayhew, D.R. and Pak, A. (2001a) *The Road Safety Monitor: Aggressive Driving*. Ottawa: Traffic Injury Research Foundation.
- Beirness, D.J., Simpson, H.M., Mayhew, D.R. and Pak, A. (2001b) *The Road Safety Monitor: Drinking and Driving*. Ottawa: Traffic Injury Research Foundation.
- Beirness, D.J., Simpson, H.M., Mayhew, D.R. and Pak, A. (2002a) *The Road Safety Monitor: Driver Distraction*. Ottawa: Traffic Injury Research Foundation.
- Beirness, D.J., Simpson, H.M. and Pak, A. (2002b) *The Road Safety Monitor: Commercial Operators*. Ottawa: Traffic Injury Research Foundation.
- Mayhew, D.R., Donelson, A.C., Beirness, D.J. and Simpson, H.M. (1986) Youth, alcohol and relative risk of crash involvement. *Accident Analysis and Prevention* 18: 273-287.
- Mayhew, D.R. and Simpson, H.M. (1990) *New to the Road. Young Drivers and Novice Drivers: Similar Problems and Solutions?* Ottawa, ON: Traffic Injury Research Foundation.
- Mayhew, D.R., Simpson, H.M., des Groseilliers, M. and Williams, A. (2001) Impact of the graduated driver licensing program in Nova Scotia. *Crash Prevention and Injury Control*, Vol. 3.
- Mayhew, D.R., Simpson, H.M. and Pak, A. (2000) *Changes in Collision Rates Among Novice Drivers During the First Months of Driving*. Arlington, Virginia. Insurance Institute for Highway Safety.
- Mayhew, D.R. Effectiveness of graduated licensing. (2000) *Proceedings of the Road Safety, Policing and Education Conference*, Brisbane, Australia: Centre for Accident Research and Road Safety, Queensland.



- Mayhew, D.R., Simpson, H.M., Desmond, K., and Williams, A.F. (2003) Specific and Long-Term Effects of Nova Scotia's Graduated Licensing Program. *Traffic Injury Prevention* 4: 91-97.
- Mayhew, D.R., and Simpson, H.M. (1999) *Youth and Road Crashes: Reducing the Risks from Inexperience, Immaturity and Alcohol*. Ottawa, Ontario: Traffic Injury Research Foundation.
- Mayhew, D.R., Simpson, H.M. and Beirness, D.J. (1996a) *Drinking and Driving in Canada: 1974-1993*. Ottawa: Transport Canada.
- Mayhew, D.R., Simpson, H.M., Ferguson, S.A. and Williams, A.F. (1999) Graduated licensing in Ontario: A survey of parents. *Journal of Traffic Medicine* 27: 71-80.
- Mayhew, D.R., Simpson, H.M. and Pak, A. (2003) Changes in collision rates among novice drivers during the first months of driving. *Accident Analysis and Prevention* 35: 683-691.
- Mayhew, D.R. and Simpson, H.M. (2002) The safety value of driver education and training. *Injury Prevention* 8 (supplement II): ii3-ii7.
- Mayhew, D.R., Brown, S.W. and Simpson, H.M. (2003) *The Alcohol Crash Problem in Canada: 2001*. Ottawa: Transport Canada.
- Simpson, H.M. (2003) The evolution and effectiveness of graduated licensing. *Accident Analysis and Prevention* 34: 25-34.
- Simpson, H.M. (1996) *New to the Road: Reducing the Risk for Young Motorists*. Los Angeles: Youth Enhancement Services.
- Simpson, H.M., Beirness, D.J. and Mayhew, D.R. (1999) *National Opinion Poll on Drinking and Driving*. Ottawa: Traffic Injury Research Foundation.
- Statistics Canada (2003) *Causes of Death 2001*. Catalogue 84-208-XIE. Ottawa: Statistics Canada.
- Statistics Canada (2002) *Canadian Vehicle Survey. Annual 2001*. Catalogue 53-223-XIE. Ottawa: Statistics Canada.
- Transport Canada (2004) *Canadian Motor Vehicle Traffic Collision Statistics:2002*. TP 3322. Ottawa: Transport Canada.

