



# The Road Safety Monitor 2006

Aggressive 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 2006**

## **Aggressive Driving**

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# Executive Summary

- The Road Safety Monitor (RSM) is an annual public opinion survey by the Traffic Injury Research Foundation (TIRF) sponsored by Transport Canada, the Brewers of Canada and Toyota Canada Inc. The survey takes the pulse of the nation on key road safety issues by means of a telephone survey of a random, representative sample of Canadian drivers.
- The results of the RSM are released in a series of reports – the present one focuses on aggressive driving.
- For the purpose of this survey, aggressive driving encompasses behaviours such as running red lights, street racing, excessive speeding, swearing, using the horn when annoyed, and taking risks, just for fun.
- Overall, the public is very concerned about aggressive driving. About 76% of Canadians think drivers who run red lights are a very or extremely serious problem; 73% have the same opinion about street racing, and 66% about excessive speeding.
- Although 88% of Canadians believe there is more aggressive driving today than five years ago, other evidence -- self-reported frequencies of aggressive driving behaviour and how often Canadians see others behave aggressively in traffic -- suggests that the magnitude of the problem did not change between 2001 and 2006.
- While it is difficult to draw definitive conclusions about a trend regarding the actual prevalence of aggressive driving, it is evident that the issue is a significant one:
  - about 2.7 million Canadians admit to often driving well over the speed limit;
  - 2 million admit to often speeding up to get through a traffic light; and,
  - about 670 thousand say they take risks while driving, just for the fun of it.
- The data captured in this survey revealed the following characteristics of aggressive drivers:
  - there were more than twice as many male aggressive drivers as there were female aggressive drivers;
  - younger drivers aged 16-24 are more likely to use their horn when they are annoyed, compared to drivers aged 25 and older;
  - drivers aged 16-44 were more likely to behave aggressively in traffic, compared to drivers aged 45 and older; and,
  - aggressive drivers are more likely to admit to having had at least one traffic ticket (excluding parking tickets).
- The level of support among Canadians for various measures that can be used to address the issue of aggressive driving was gauged as well:
  - 63% agree that aggressive driving should be a higher priority for police enforcement efforts;
  - 51% believe that the penalties for aggressive driving should be equal to those for drinking and driving; and,
  - 43% agree with equipping vehicles with devices to prevent excessive speeding.



# 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 don't 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 2006 RSM regarding the issue of aggressive driving. Context is provided to discuss these results and compare them with the results of previous years.



# Method

The sixth edition of the RSM contained 75 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 15 minutes to complete.

The survey was administered by telephone to a random sample of Canadian drivers who have driven in the past 30 days. The sample was stratified by province and weighted to avoid bias. Opinion Search Inc. fielded this survey in September, 2006. Among the 6,075 households contacted in which a person was asked to participate, 4,418 (73%) refused and 457 (7.5%) were not qualified.

A total of 1,201 drivers completed the interview. The data were analyzed taking account of the stratified and weighted sampling design (see StataCorp. 2005 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 2.9%, 19 times out of 20.



# Background

## What Is Aggressive Driving?

“Aggressive driving encompasses a continuum of behaviours that range from extreme acts (e.g., shootings or malicious assaults) to less severe manifestations (e.g., roadside arguments, confrontations, and gestures).” (Beirness et al. 2001: p. 4). Given this wide range of behaviours, it is not surprising that a consistent definition is lacking in the literature (a diversity of definitions can be found, for example, in Miles and Johnson 2003, James and Nahl 2000, Tasca 2000, Mizell 1997, Lajunen et al 1998, Shinar 1998, Ellison-Potter et al. 2001).

Despite the lack of a consistent definition, there is a recurrent theme in the majority of them, more precisely the element of intent -- i.e., deliberately endangering others. For example Galovski and Blanchard (2005: p. 47) argued that “*Intent* is the key element in discriminating aggressive driving from driving error or lapses in judgment.”

However, a more liberal definition of aggressive driving does not include the element of intent but also pertains to risky driving. For example, behaviours such as street racing, excessive speeding, or speeding up to get through a traffic light might also be considered aggressive even though they are not necessarily intended to harm others.

In general, the public likely does not distinguish between those behaviours that are clearly motivated by intent to harm others and those that are not. They likely respond more to the observed behaviour and whether or not it seems like an aggressive manoeuvre. Accordingly, in this survey, aggressive driving encompasses both aggressive and risky behaviours. As such, a variety of specific driving behaviours were probed, including:

- Running red lights, and speeding up to get through the light;
- Street racing;
- Excessive speeding, and driving well over the speed limit;
- Swearing, and making rude signs at other drivers;
- Using the horn when being annoyed; and,
- Taking risks, just for fun.

## How Common Is Aggressive Driving and How Risky Is It?

It has been argued that aggression is more frequent on the roadways than in any other human setting. Explanations for the prevalence of aggression on the roadways include crowding/congestion, anonymity, frustration and provocation; factors that may be present simultaneously while driving (McGarva 2005).

As noted previously, there is a lack of consistency in the definition of “aggressive driving”, so it is not surprising that estimates of its prevalence are also variable. According to one study, almost 90% of drivers in the United States (US) have been involved in at least one situation of aggressive driving (AAAFTS 1999). It was also estimated in that study that aggressive driving leads to about 1,500 injuries and fatalities annually in the US.

The impact of specific forms of aggressive driving, explored in this survey, has also been estimated. For example, excessive speeding, often considered to be aggressive, has been identified as a contributing factor in up to 18% of fatal and personal injury crashes (Beirness and Simpson 1997). This corresponds to about 4,000 deaths and injuries that can be attributed to speed each year in Canada (Beirness et al. 2001).

With respect to running red lights and its consequences, a Quebec study found that, “running a red light caused slightly more than 25% of traffic injuries at intersections with traffic lights.” (Brault et al. 2007: p. 1).

According to a comparable study in Ontario (Ministry of Transportation Ontario 1998), 18% of fatal crashes and 30% of personal injury crashes occur in an intersection. Disobeying the traffic signal is involved in 42% of the fatal crashes and 29% of the injury crashes. This means that approximately 61 fatal crashes and 4,800 injury crashes occur in Ontario each year because of drivers running red lights.

Despite the lack of consistency in the definition of aggressive driving, it is clear from the available data that aggressive driving is not uncommon and very risky.



# Public Concern about Aggressive Driving



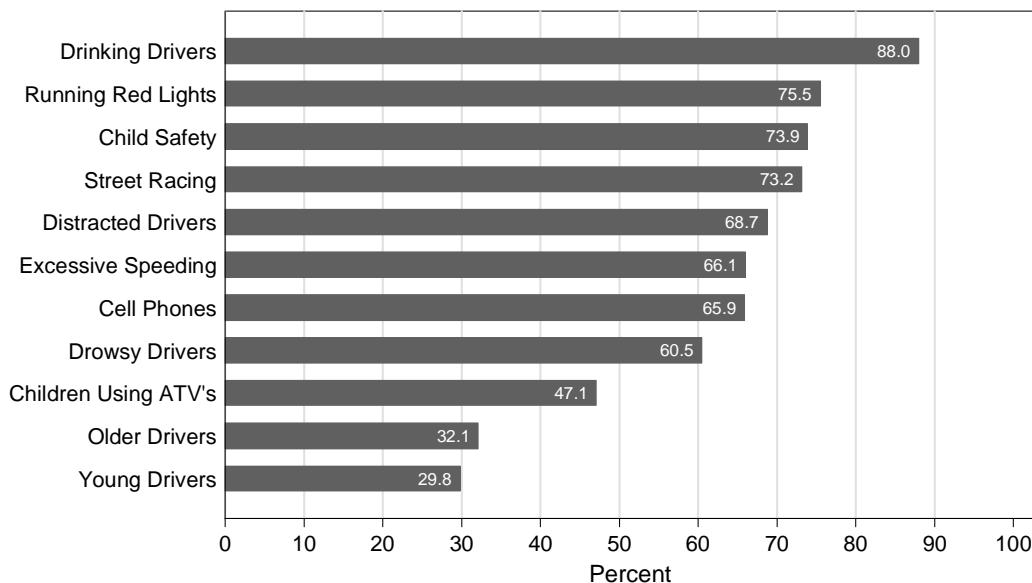
## Are Canadians Concerned about Aggressive Driving?

Survey respondents were asked to indicate their level of concern about a variety of road safety issues, including several behaviours that can be regarded as aggressive. They rated the seriousness of each problem on a six-point scale from one (not a problem at all) to six (extremely serious problem).

Figure 1 shows the percentage of respondents who thought the issue was very serious or extremely serious (a rating of five or six). About 76% of Canadians think drivers who run red lights are a very or an extremely serious problem; 73% have the same opinion about street racing and 66% about excessive speeding. Significantly more Canadians are concerned about drinking drivers (88%), but overall, aggressive driving is of concern to a substantial portion of the public.

Overall, the public is very concerned about aggressive driving.

**Figure 1: Percent concerned about road safety issues**



## Do Canadians Believe There Is More or Less Aggressive Driving Today?

There is some evidence that Canadians have become more concerned about aggressive driving over the past several years. In the 2002 RSM (Beirness et al. 2002) 72% of respondents viewed red light running as a serious or extremely serious problem (compared to 76% in 2006) and 60% had the same opinion about speeding (this was 66% for excessive speeding in 2006).

More directly, respondents were asked if they thought there is more or less aggressive driving today, compared to five years ago; 88% of Canadians believe there is more aggressive driving today than five years ago.<sup>1</sup>

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<sup>1</sup> There may seem to be a discrepancy between the rather large proportion of Canadians who think people drive more aggressively today (88%) and the evidence of only a small increase in the number of Canadians who are concerned about aggressive driving. However, there are several plausible explanations for this, including the fact that the perceived magnitude of the problem (88% who think there is more aggressive driving today) is not the only factor that influences people's level of concern; for example, how concerned they think others are and how risky they think aggressive driving is, can also influence their level of concern.

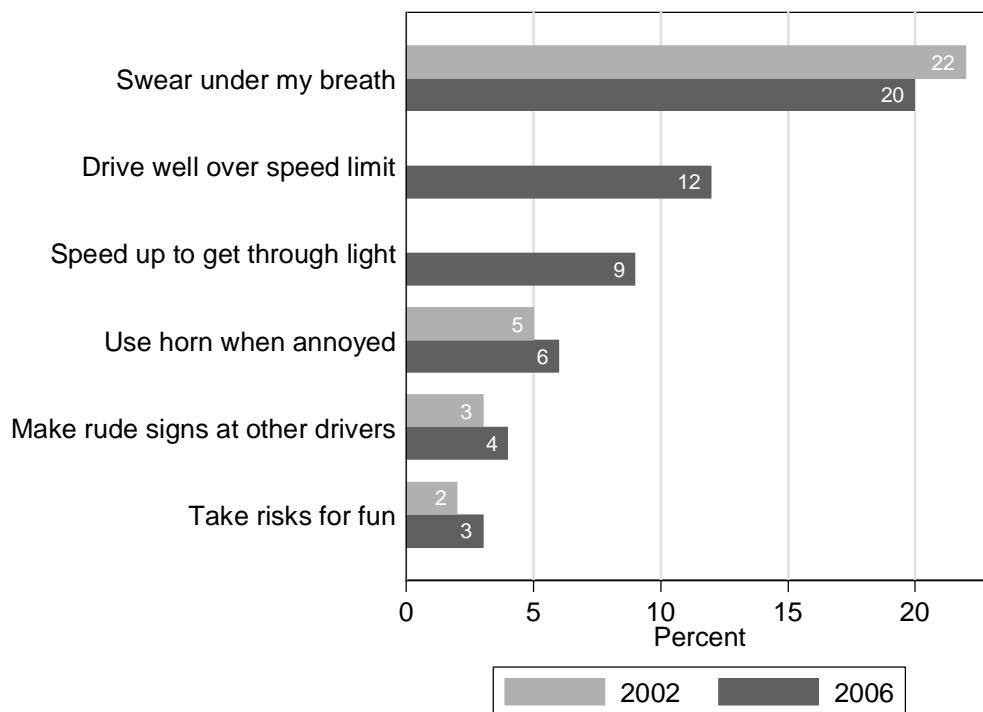


# Magnitude of the Problem of Aggressive Driving

## How Often Do Canadians Behave Aggressively in Traffic?

Respondents were asked to indicate on a six point scale (where one means “never” and six means “often”) how frequently they engaged in a variety of aggressive driving behaviours. Figure 2 shows the percent of respondents who indicated they often engaged in these behaviours (five or six on the rating scale); corresponding results from the 2002 survey are also presented where available.

**Figure 2: Percent of self-reported aggressive behaviour in 2002 and 2006<sup>2</sup>**



<sup>2</sup> The items “Drive well over speed limit” and “Speed up to get through light” were not asked in the 2002 survey.

In comparing the results from 2002 and 2006, it can be seen that they are very close -- differences between both years are not greater than 2%. For example, the majority of people admit to swearing, in 2002 (22%) as well as in 2006 (20%); only 4% of drivers say they make rude signs at other drivers in 2006 and 3% in 2002.

The results show how prevalent some of the aggressive driving behaviours are. In 2006, 12% of drivers admit to often driving well over the speed limit -- this corresponds to 2.67 million drivers<sup>3</sup>. Nine percent, or two million, admit to often speeding up to get through the light. And 3% indicate they take risks while driving, just for the fun of it; this corresponds to 667,500 drivers who knowingly put themselves and others at risk while driving as a result of their thrill-seeking behaviour.

In 2006, about 2.7 million drivers admit to often driving well over the speed limit; 2 million drivers admit to often speeding up to get through a traffic light; and, about 670 thousand drivers say they take risks while driving, just for the fun of it.

## How Often Do Canadians See Aggressive Driving?

Respondents were also asked to indicate, for a variety of aggressive driving behaviours, how often they see them happening on the road, by giving a number between one (never) and six (very often).

Figure 3 displays the average perceived frequency of six aggressive driving behaviours in 2006 and comparable results from 2001. As can be seen, most results for both years are very similar with the possible exception of running red lights and excessive speeding<sup>4</sup>. Overall, this pattern may be indicative of a slight decrease in the occurrence of these particular behaviours.

Incidentally, these findings may suggest that when people are asked about "aggressive driving" in general they think about other behaviours besides the ones that are listed in Figure 3. As stated previously, the majority (88%) believe there is more aggressive driving today compared to five years ago (see page 8). However, the results from

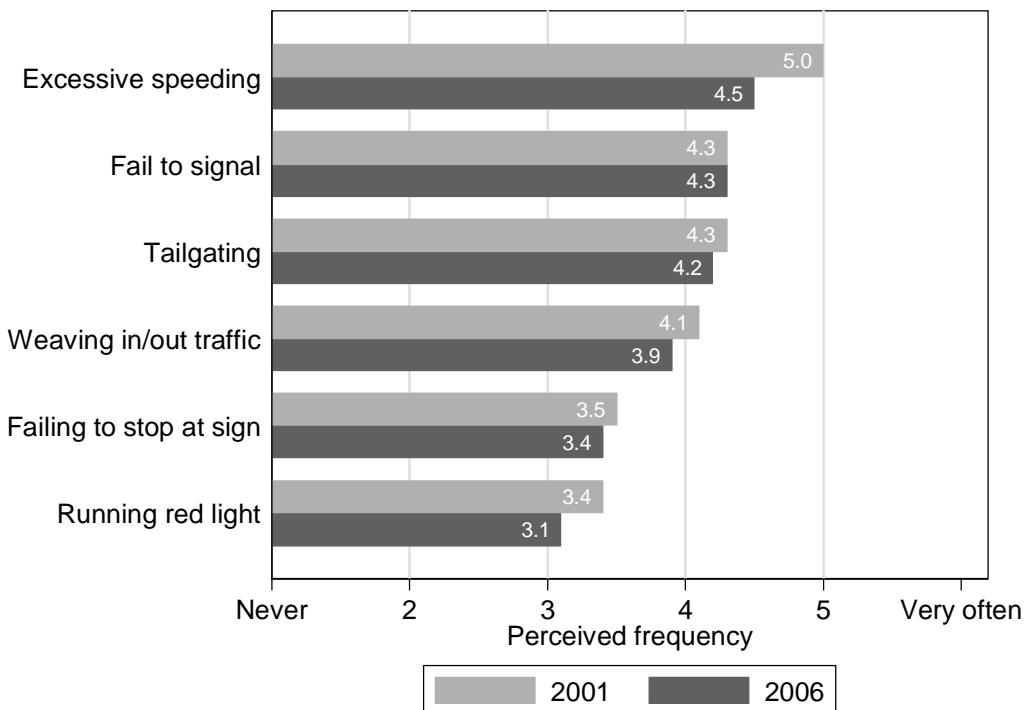
<sup>3</sup> Based on an estimated 22.25 million licensed drivers.

<sup>4</sup> Note that in 2006 respondents were asked to rate "excessive speeding", while in 2001 they were asked about "speeding".



Figure 3 seem to be indicative of a slightly decreasing trend in the perceived frequency of aggressive driving behaviours. In other words, the public's perception of the magnitude of aggressive driving may be influenced by certain behaviours that were not probed in this survey, e.g., extreme cases of aggression.

**Figure 3: Average perceived frequency of six driving behaviours in 2001 and 2006**



## Conclusion

The frequency of self-reported aggressive driving behaviours has not changed significantly in the past five years -- differences are small in the frequency of behaviours such as swearing, driving well over the speed limit, speeding up to get through a traffic light, using the horn when annoyed, making rude signs at other drivers, and taking risks, just for the fun of it. From the perspective of how often Canadians say they engage in aggressive driving behaviours, the magnitude of the problem of aggressive driving has neither increased nor decreased. However, from the perspective of how often Canadians saw others engage in aggressive driving behaviour, there is a suggestion of a slightly decreasing trend over the past five years in speeding excessively and running red lights.

Although it is difficult to draw definitive conclusions about a trend regarding the magnitude of the problem of aggressive driving, it is evident that the issue is a significant one. About 2.7 million Canadians admit to often driving well over the speed limit; 2 million admit to often speeding up to get through a traffic light; and, about 670 thousand say they take risks while driving, just for the fun of it.



# Profile of Aggressive Drivers

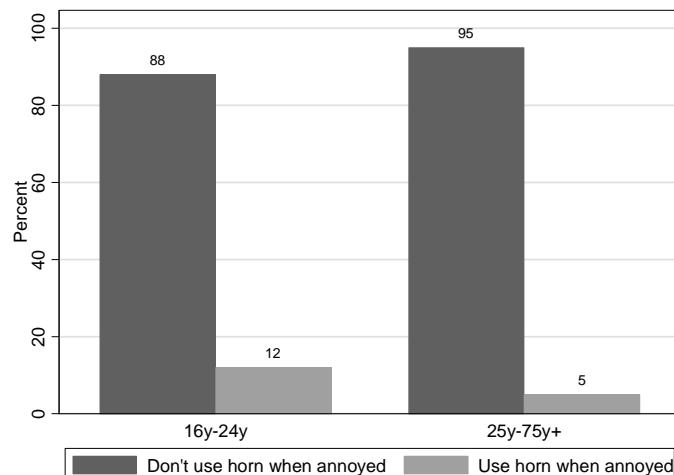
This section provides a profile of the aggressive driver as revealed by the data captured in the survey.

## Young Drivers Use The Horn When Annoyed

The vast majority of respondents did not use their horn when annoyed in traffic (see Figures 2 and 4). However, based on a multivariate analysis of these data, it was found there is a relationship between age and use of the horn, when annoyed, at the wheel. As shown in Figure 4, drivers aged 16-24 are significantly more likely to use their horn when they are annoyed than drivers aged 25 and older. Out of all younger drivers, 12% admit to using their horn, while only 5% of all older drivers admit to it.

Young drivers aged 16-24 are more likely to use their horn when they are annoyed.

**Figure 4: Percent of horn usage, when annoyed, by age**



## Younger Male Drivers Behave More Aggressively in Traffic

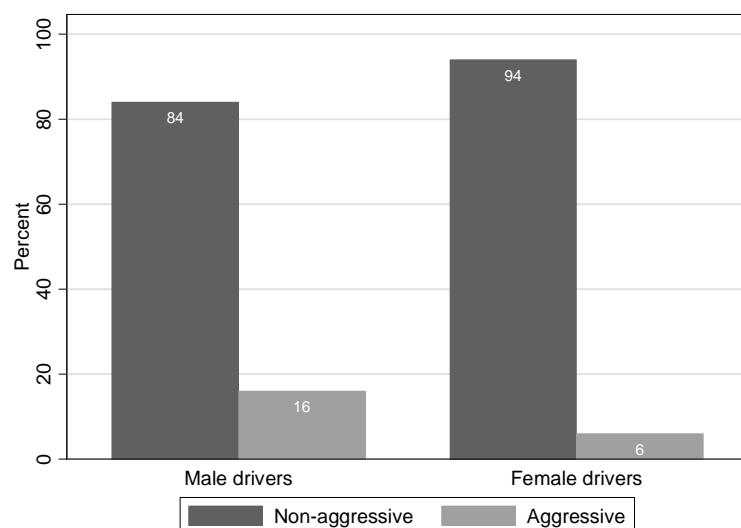
Based on each respondent's self-reported frequency for the aggressive driving behaviours listed in Figure 2, a personal "aggressiveness" score was calculated, simply



by adding up the respondent's results for each of these behaviours. The relationship between this "aggressiveness score" and age and gender was then investigated. The results are illustrated in Figure 5 and Figure 6.<sup>5</sup>

Figure 5 illustrates the relationship between gender and aggressiveness. As can be seen, the percent of male drivers who are considered aggressive is more than double the percent of aggressive female drivers – 16% versus 6%.

**Figure 5: Percent of aggressive drivers by gender**



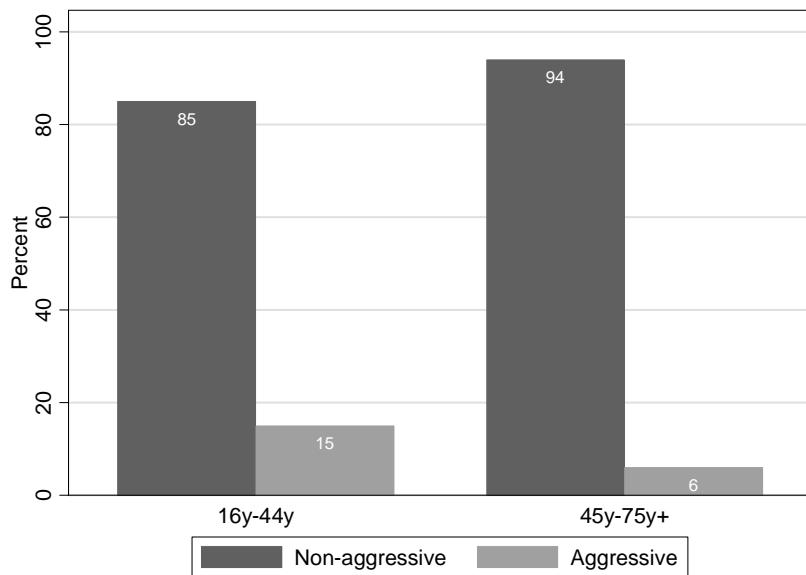
Using the same approach, the relationship between aggressiveness and age was explored and the results are summarized in Figure 6. It was found that more younger drivers (aged 16-44) than older ones (those aged 45 and older) can be considered aggressive – 15% versus 6%.

Males and younger drivers aged 16-44 are more likely to behave aggressively in traffic.

<sup>5</sup> While the relationship was investigated using a multivariate approach, the results are illustrated in bivariate format. The cut-off score of the aggressiveness scale (ranging from 6-36) to distinguish between "aggressive drivers" and "non-aggressive drivers" was set at 18. This score is merely a crude way of gauging a driver's level of aggressiveness; however, the results do confirm what is known about this in the literature.



**Figure 6: Percent of aggressive drivers by age**



## Aggressive Driving and Traffic Violations

Theoretically, it makes sense that aggressive drivers should be cited for traffic violations more often than those who are not aggressive. The results of the survey support this contention. It was found that behaving more aggressively in traffic (i.e., scoring higher on the aggressiveness scale) corresponds to a greater chance of admitting to having had at least one traffic ticket (excluding parking tickets). No such relationship was found between level of aggressiveness and collisions in this study.

## Conclusion

In summary, the data from this survey suggest that males and younger drivers aged 16-44 are more likely to behave aggressively in traffic than females and drivers aged 45 and older. Also, young drivers aged 16-24 are more likely to use their horn when they are annoyed, compared to drivers aged 25 and older. Finally, aggressive drivers are more likely to admit to having had at least one traffic ticket (excluding parking tickets).



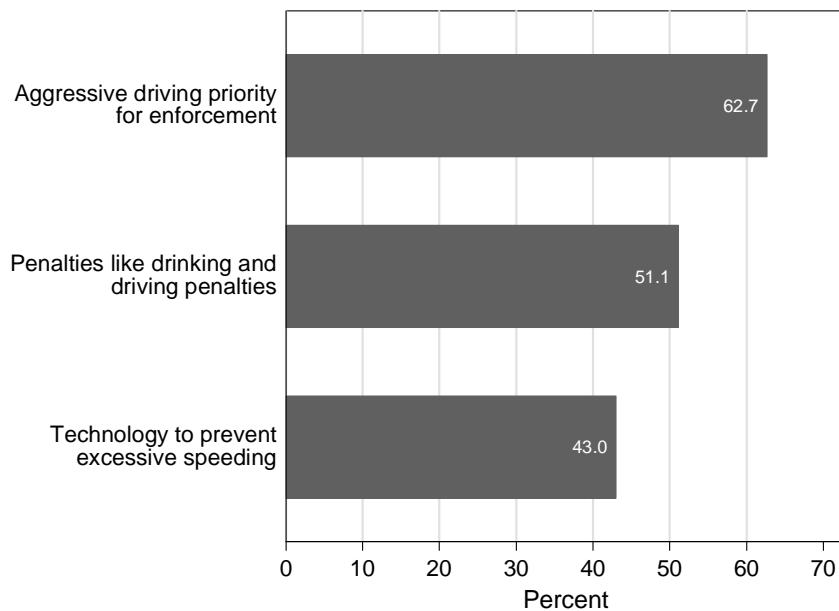
# Public Support for Actions to Control Aggressive Driving

## Level of Support for Various Measures

A series of questions were asked to gauge the level of support for various measures that can be used to address the issue of aggressive driving. Respondents could indicate their level of support by using a six-point scale where one means “strongly disagree” and six means “strongly agree”. Figure 7 shows the percent who agreed (answered five or six on this scale) with three different measures.

Sixty-three percent agree that aggressive driving should be a higher priority for police enforcement efforts. This level of support has not changed over the past several years – in 2001 and 2002, the level of agreement was 60% (Beirness et al. 2001) and 62% (Beirness et al. 2002), respectively.

**Figure 7: Percent who agree with actions against aggressive driving**



Not only is there support for more enforcement, there is support for enhanced penalties for aggressive driving as well -- indeed, 51% actually believe that the penalties for aggressive driving should be equal to those for drinking and driving.

On the technological front, there is even considerable support for equipping vehicles with devices to prevent excessive speeding: 43% agree with this measure.



# Summary and Conclusions

Overall, the public is very concerned about aggressive driving. About 76% of Canadians think drivers who run red lights are a very or extremely serious problem; 73% have the same opinion about street racing, and 66% about excessive speeding.

Although 88% of Canadians believe there is more aggressive driving today than five years ago, other evidence -- self-reported frequencies of aggressive driving behaviour and how often Canadians see others behave aggressively in traffic -- suggests that the magnitude of the problem did not change between 2001 and 2006.

While it is difficult to draw definitive conclusions about a trend regarding the actual prevalence of aggressive driving, it is evident that the issue is a significant one. About 2.7 million Canadians admit to often driving well over the speed limit; 2 million admit to often speeding up to get through a traffic light; and, about 670 thousand say they take risks while driving, just for the fun of it.

The data captured in this survey revealed the following characteristics of aggressive drivers:

- there were more than twice as many male aggressive drivers as there were female aggressive drivers;
- younger drivers aged 16-24 are more likely to use their horn when they are annoyed, compared to drivers aged 25 and older;
- drivers aged 16-44 were more likely to behave aggressively in traffic, compared to drivers aged 45 and older; and,
- aggressive drivers are more likely to admit to having had at least one traffic ticket (excluding parking tickets).

The level of support among Canadians for various measures that can be used to address the issue of aggressive driving was gauged as well. Sixty-three percent agree that aggressive driving should be a higher priority for police enforcement efforts; 51% believe that the penalties for aggressive driving should be equal to those for drinking and driving; and, 43% agree with equipping vehicles with devices to prevent excessive speeding.



# Bibliography

- AAAFTS (1999). Controlling road rage. Washington DC: AAA Foundation for Traffic Safety.
- Beirness, D.J., Simpson, H.M. (1997). Study of the Profile of High-Risk Drivers. Ottawa: Transport Canada, Road Safety and Motor Vehicle Regulation (TP-13108).
- Beirness, D.J., Simpson, H.M., Mayhew, D.R., Pak, A. (2001). The Road Safety Monitor. Aggressive Driving. Ottawa: Traffic Injury Research Foundation.
- Beirness, D.J., Simpson, H.M., Desmond, K. (2002). The Road Safety Monitor 2002. Risky Driving. Ottawa: Traffic Injury Research Foundation.
- Brault, M., Auger, A., Montégiani, M. (2007). La sécurité aux intersections : analyse des comportements des conducteurs au feu rouge. Présentation à la XVIIe Conférence Canadienne Multidisciplinaire sur la Sécurité Routière à Montréal, 3-6 juin 2007.
- Ellison-Potter, P., Bell, P., Deffenbacher, J. (2001). The effects of trait driving anger, anonymity, and aggressive stimuli on aggressive driving behaviour. *Journal of Applied Social Psychology* 31: 431-443.
- Galovski, T., Blanchard, E.B. (2005). Understanding and treating the aggressive driver. In: Contemporary Issues in Road User Behavior and Traffic Safety. D.A. Hennessy and D.L. Wiesenthal (eds.). New York, NY: Nova Science Publishers, Inc. pp. 47-60.
- James, L., Nahl, D. (2000). Road rage and aggressive driving: Steering clear of highway warfare. Amherst, NY: Prometheus Books.
- Lajunen, T., Parker, D., Stradling, S. (1998). Dimensions of driver anger, aggressive, and highway code violations and their mediation by safety orientation in UK drivers. *Transportation Research Part F: Traffic Psychology and Behaviour* 1: 107-121.
- McGarva, A.R. (2005). Field Methodologies for the Study of Driver Aggression. In: Contemporary Issues in Road User Behavior and Traffic Safety. D.A. Hennessy and D.L. Wiesenthal (eds.). New York, NY: Nova Science Publishers, Inc. pp. 71-78.
- Miles, D.E., Johnson, G.L. (2003). Aggressive driving behaviours: are there psychological and attitudinal predictors? *Transportation Research Part F: Traffic Psychology and Behaviour* 6(2): 147-161.
- Ministry of Transportation Ontario (1998). Ontario Road Safety Annual Report 1997. Toronto: Ministry of Transportation Ontario.
- Mizell, L. (1997). Aggressive driving. Washington DC: AAA Foundation for Traffic Safety.
- Shinar, D. (1998). Aggressive driving: the contribution of the drivers and the situation. *Transportation Research Part F: Traffic Psychology and Behaviour* 1: 137-160.

StataCorp. (2005). Stata Statistical Software. Release 9. College Station, Texas:  
StataCorp LP.

Tasca, L. (2000). A review of the literature on aggressive driving research. Paper presented at the Global Web Conference on Aggressive Driving Issues, October 16-November 30, 2000.

