

Lowering the BAC Limit to 50 mg%: A Summary of Evidence

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Canadian Data

Total Persons Killed 77-96
= 88,553

Estimated number of fatalities that involved alcohol
= 88,553 X .4
= *35,421*

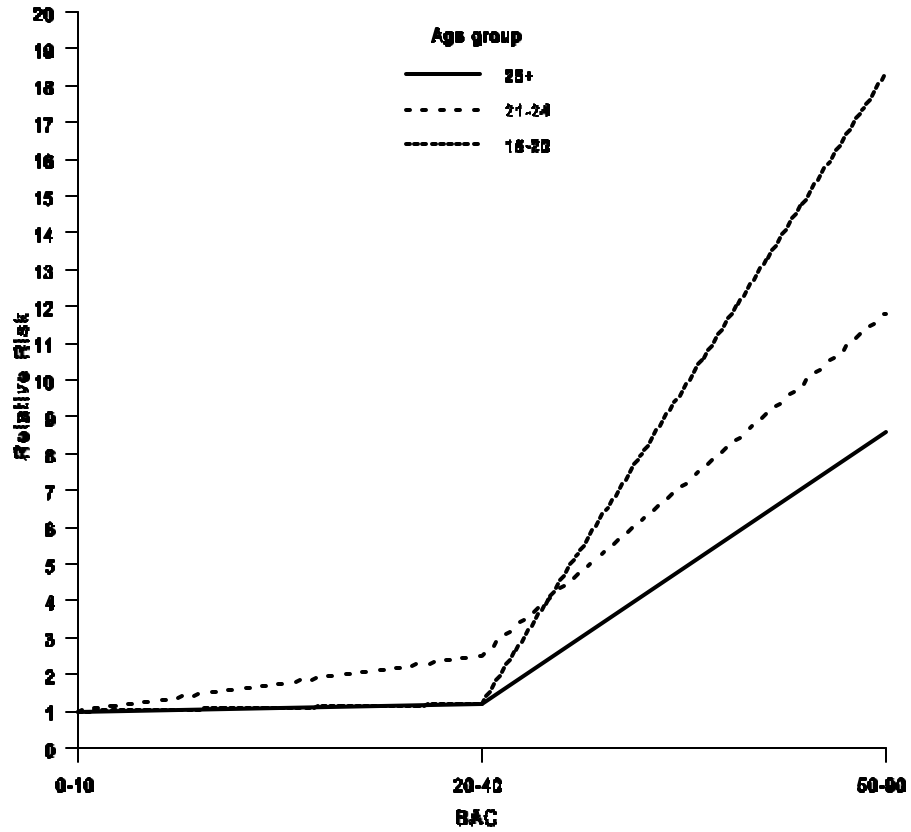
Estimated cost of alcohol-related fatalities:
= 35,421 X \$1,560,000
= *\$52.1 billion ('96 dollars)*

Total Persons Injured 77-96
= 5,016,782

Estimated number of persons injured that involved a drinking driver:
= 5,016,782 X .3
= *1,505,035*

Estimated cost of alcohol-related injuries:
= 1,505,035 X \$28,000
= *\$42.1 billion ('96 dollars)*

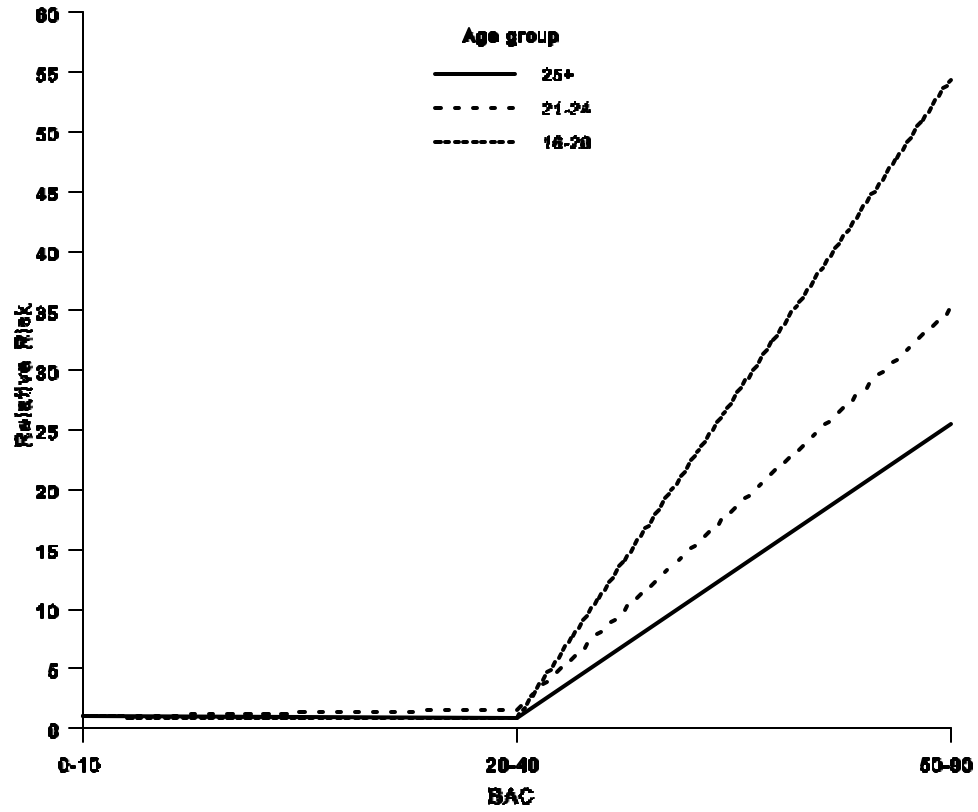
Figure 2. Relative risk for male drinking-drivers in single vehicle crashes *



Males	BAC (mg%)			
Age	20 - 40	50 - 90	100 - 140	150+
25+	1.2	8.6	39.7	607.1
21-24	2.5	11.8	135.2	600.7
16-20	1.2	18.3	30.4	349.0

* Relative to crash risk at BAC ≤ 10
Source: Zador, 1991

Figure 3. Relative risk for female drinking-drivers in single vehicle crashes *



Females	BAC (mg%)			
	20 - 40	50 - 90	100 - 140	150+
25+	0.8	25.5	118.5	546.5
21-24	1.6	35.1	403.8	540.8
16-20	0.8	54.4	90.8	314.2

* Relative to crash risk at BAC ≤ 10
Source: Zador, 1991

Table 7. Western Countries with 50 mg% Blood Alcohol Limits or Lower

Country	per se Limit	Sanctions that can be applied at the lower limit
Australia	50	(see Table 10)
Belgium	50	BAC > 50 mg%: first offence: suspension for few hours, subsequent offences: longer suspension, eventual imprisonment possible
Finland	50	BAC 50-150 mg%: fine or up to 3 months jail term, could lose insurance
France	50	BAC 50-80 mg%: fine and 3 points (temporary vehicle confiscation optional)
Greece	50	*
Netherlands	50	BAC > 50 mg%: fine and suspension 6 months to 10 years
Norway	50	BAC 51-100 mg%: minimum of 2 years suspension plus fine and jail term (conditional)
Portugal	50	*
Spain	30/ 50/ 80	BAC > 30 mg% only for drivers of dangerous goods or buses BAC > 50 mg% only for truck (>3500 kg) drivers: up to 100,000 points, fine and 6 months suspension
Sweden	20	BAC ≥ 20 mg%: suspension 3 months to 3 years, possible up to 6 months jail term (“aggravated offences” with BAC ≥100 or clearly DUI: 12 months suspension minimum plus 1 month to 2 years jail term)

* Unavailable at this time

Table 2. Summary of Research Evaluating a Reduction of a BAC Limit to 50 mg% or below.

Location	Authors	Measures	Design/Analysis	Impact
Canada: Introducing the 50 mg% 12-hour suspension provision of the Ontario Highway Traffic Act in 1981	Vingilis et al., 1988	Proportion of fatal collisions involving alcohol	Time series analysis	Introduction of the 50 mg% HTA provision had significant but apparently temporary impact on alcohol-related collisions, perhaps due to lack of awareness and enforcement
Australia: Reduction of the legal limit in Queensland from 80 to 50 mg% in 1983	Smith, 1986	Collisions involving drinking drivers	Pre-post comparisons	Reduction of the limit to 50 mg% resulted in a significant reduction in numbers of collision-involved drivers who had been drinking
Australia: Reduction of the legal limit in the Australian Capital Territory from 80 to 50 mg% in 1991	Brooks and Zaal, 1993	Several indicators of drinking driving and alcohol involvement in collisions	Pre-post comparisons	Reduction of the limit to 50 mg% resulted in a significant reduction in the BACs of collision-involved drivers who had been drinking, and in the BACs of drivers breath-tested by police
Australia: Reduction of the legal limit from 80 to 50 mg% in 1991 in South Australia	Kloeden and McLean, 1994	Distribution of BACs among drivers in Adelaide	Pre-post comparisons	Reduction of the limit to 50 mg% resulted in a significant reduction in the BACs of drivers breath tested in roadside surveys
Australia: Reduction of the legal limit from 80 to 50 mg% in 1991 in South Australia	McLean et al., 1995	Distribution of BACs in fatally-injured drivers and drivers tested in roadside surveys in Adelaide	Pre-post comparisons	Reduction of the limit to 50 mg% resulted in a temporary reduction in the BACs of nighttime drivers and a reduction in the proportion of fatally injured drivers with BACs over 80 mg% - No statistical analyses reported

Australia: Reduction of the legal limit in New South Wales and Queensland from 80 to 50 mg% between 1982 and 1992	Henstridge et al., 1997	Numbers of serious collisions, fatal collisions and single vehicle nighttime collisions	Time series analysis	Reduction of the limit to 50 mg% resulted in significant reductions in all collision and fatality measures in both states
Sweden: Reduction of the lower legal limit from 50 to 20 mg% in 1990	Norström and Laurell, 1997	Numbers of fatal collisions, single vehicle collisions and total collisions	Time series analysis	Reduction of the lower limit to 20 mg% resulted in significant reductions in all collision and fatality measures
France: Reduction of the legal limit from 80 to 50 mg% in 1996	Mercier-Guyon, 1998	Numbers of fatalities involving a drinking driver in Haute-Savoie	Pre-post comparisons	Reduction of the limit to 50 mg% was associated with a decline in the numbers of fatalities involving a drinking driver; no analyses reported
Denmark: Reduction of the legal limit from 80 to 50 mg% in 1998	Bernhoft, 2000	Proportion of injury and fatal collisions classed as DUI	Pre-post comparisons	Reduction of the limit to 50 mg% was associated with a decline in the proportion of injury collisions and an increase in the proportion of fatal collisions classed as DUI; no analyses reported
Austria: Reduction of the legal limit from 80 to 50 mg% in 1998	Bartl and Esberger, 2000	Proportion of collisions involving personal injuries classed as drunk driving	Pre-post comparisons	Reduction of the limit to 50 mg% was associated with a significant decline in alcohol involvement in personal injury collisions; statistical analyses not described.

Adapted from Norstrom and Laurell, 1997

BAC Level	% of convicted drivers	
	1987 (pre)	1991 (post)
50 - 99 mg%	17.7%	24.4%
100-149 mg%	25.2%	28.2 %
150-199 mg%	26.0%	23.9%
200-248 mg%	18.0%	15.0%
250+ mg%	13.1%	8.5%

Norstrom and Laurell (1997)- impact of reduction to 20 mg% in Sweden - impact on fatal collisions = 9% reduction - estimated that 3% might be due to changed age breakdown of driving population, thus resulting in a **6%** reduction due to the 20 mg% law

Henstridge, Homel and MacKay (1997) - impact of reduction of legal limit to 50 mg% in Queensland on fatal collisions = **18%** reduction

Therefore a potential range of impact of a reduction of the criminal code limit to 50 mg% in Canada could be a reduction of motor vehicle fatalities by from 6% to 18%

In 1996 there were 3,082 fatalities resulting from motor vehicle collisions in Canada.

The projected range for reduction in fatalities in Canada resulting from a reduction of the Criminal Code limit to 50 mg% would be from:

(6% of 3,082) = **185** to (18% of 3,082) = **555**.