



Alcohol/drugs

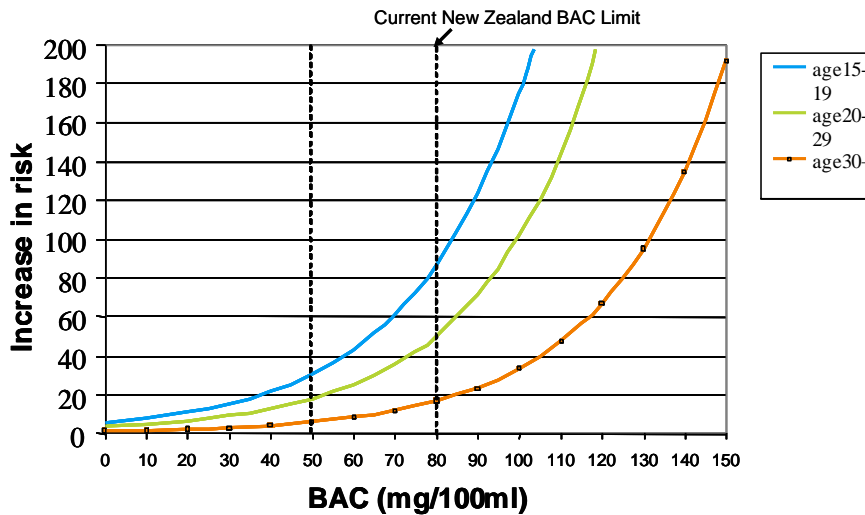
CRASH STATISTICS FOR THE YEAR ENDED 31 DEC 2007
Prepared by Strategy and Sustainability, Ministry of Transport

CRASH FACTSHEET
2008

In 2007 driver alcohol/drugs was a contributing factor¹ in 117 fatal traffic crashes, 402 serious injury crashes and 1,182 minor injury crashes. These crashes resulted in 128 deaths, 559 serious injuries and 1,777 minor injuries. The total social cost of crashes involving driver alcohol/drugs was about \$838 million; that is, about a fifth of the social cost associated with all injury crashes.

Consuming alcohol degrades driving performance and affects driving behaviour. Many studies show that the risk of being involved in a crash increases as a driver's blood alcohol level increases. At high blood alcohol levels the risk rapidly increases.

Relative risk of fatal crash by blood alcohol level



The graph shows the results of a NZ study of drivers involved in fatal crashes². There is a clear increase in risk as blood alcohol levels increase. As shown in the graph and the table below, the effect is more pronounced for young drivers. The calculation of risk is made in relation to that of a sober 30+ year old.

Relative risk of fatal crash by blood alcohol level			
BAC	30+ years	20-29 years	15-19 years
0	1	3	5.3
30	2.9	8.7	15
50	5.8	17.5	30.3
80	16.5	50.2	86.6

The table above shows that at 80 mg of alcohol per 100 ml of blood, which is the current New Zealand adult legal BAC limit, a driver is about sixteen times as likely to be involved in a fatal crash as the same driver with a zero blood alcohol level.

¹ **Alcohol/drugs as a contributing factor:** Alcohol/drugs is listed as a factor when a driver's blood or breath alcohol level is above the legal limit, if drugs are proved to be in the driver's blood, or when the attending officer suspects that alcohol/drug consumption contributed to the crash.

² Keall, M. D., Frith, W. J & Patterson, T. L. (2004) The influence of alcohol, age and the number of passengers on the night-time risk of driver injury in New Zealand. *Accident Analysis and Prevention*, 36(1), 49-61.

Contrary to popular opinion, people with a high blood alcohol level are more likely to be injured or killed in a crash than those who are sober.

The numbers reported in this fact sheet are based on crashes in which alcohol/drugs were proved or suspected to be a contributing factor in the crash. The information currently collected for drugs other than alcohol is not as complete as that available for alcohol-related crashes. For example, for drivers involved in all fatal crashes in 2005-2007, 26 percent were recorded as having alcohol only, two percent as having both alcohol and drugs, and a further two percent as having drugs other than alcohol which contributed to the crash. However, drugs other than alcohol can be difficult to identify and recognise as having a role in a crash. Research suggests that the contribution of drugs other than alcohol may be under-represented in the police-reported crash system that has been used for this factsheet, and therefore drugs other than alcohol may be a factor in more accidents than are reported here.

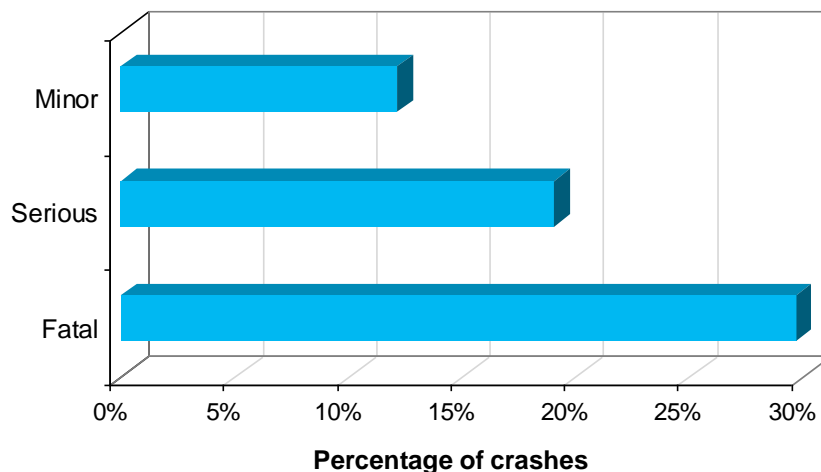
The evidence for the impairing effects of drugs other than alcohol is not as clear as that for the impairment effects of alcohol alone, which is presented above. However, there is little doubt that any drug which has an effect on the central nervous system has the potential to impair driving. It is therefore advisable that, if a driver is using any drug, whether illegal or legal, that will impair them in any way, they **do not drive while under its influence**.

Legal drugs that impair driving are often labelled with warnings related to the use of heavy machinery and, if in doubt, it is recommended that drivers ask their doctor or pharmacist whether it is safe to drive while taking any drugs prescribed to them, or that they are purchasing off the shelf.

All recreationally-used illegal drugs (cannabis, methamphetamine, opiates, etc) are known to have potentially impairing effects on driving, and it is very important not to drive while under the influence of any of these substances.

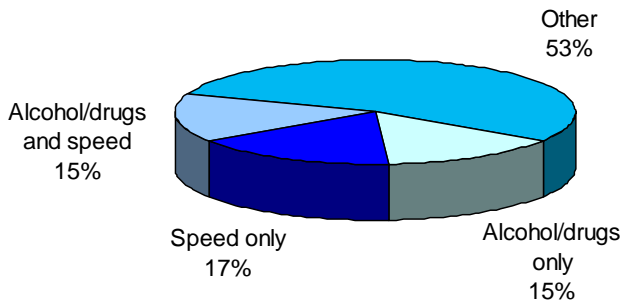
It is also possible that the effects felt during the withdrawal or “come down” period of some drugs (including a hangover related to alcohol) can impair the ability to properly control and drive a vehicle, and driving during this period should also be avoided.

Percentage of crashes with alcohol or drugs as a contributing factor (2005 - 2007)



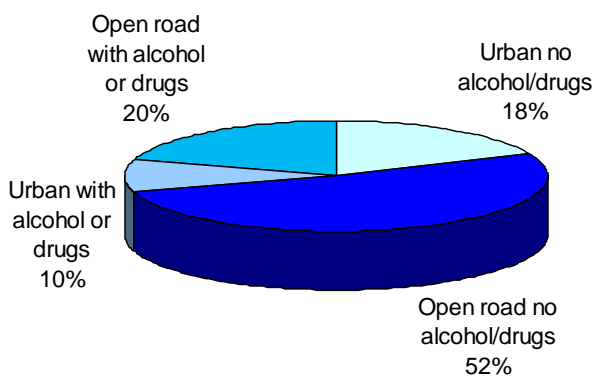
As crash severity increases, so does the contribution of driver alcohol/drugs. In New Zealand, over the years 2005 to 2007, driver alcohol/drugs were a factor in 30 percent of fatal crashes, 19 percent of serious injury crashes and 12 percent of minor injury crashes.

Alcohol/drugs and speed in fatal crashes (2005 - 2007)



As shown in the graph, the combination of alcohol/drugs and speed contributes to 15 percent of fatal crashes. Alcohol/drugs alone contribute to 15 percent, and speed alone to 17 percent, of fatal crashes.

Urban and open road fatal crashes (2005 - 2007)



Twenty percent of all fatal crashes occur on the open road and have driver alcohol/drugs as a contributing factor. A further ten percent are urban crashes with driver alcohol/drugs as a contributing factor. Driver alcohol/drugs were a contributing factor in 35 percent of urban fatal crashes and 28 percent of open road fatal crashes.

Who dies?

For every 100 alcohol or drug-impaired drivers or riders killed in road crashes, 54 of their passengers and 42 sober road users die with them.

Deaths in crashes where driver alcohol/drugs was a contributing factor (2005-2007)				
Age	Drunk/drugged drivers	Passengers with drunk/drugged drivers	Other road users	Percentage of all deaths
0-14	0	7	5	14%
15-19	20	42	8	33%
20-24	38	18	14	45%
25-29	20	12	7	51%
30-39	39	7	10	35%
40-49	33	4	11	27%
50-59	15	1	7	21%
60+	13	6	13	14%
Unknown	2	0	1	19%
Total	180	97	76	29%

The table shows the deaths resulting from crashes with alcohol/drug-affected drivers. In addition, between 2005 and 2007 there were 31 drunk pedestrians who died on New Zealand roads (in some of these cases a drunk driver was also involved).

Time series

Crashes and casualties with driver alcohol/drugs as a contributing factor

Crashes with driver alcohol/drugs as a factor					Casualties from crashes with driver alcohol/drugs as a factor			
Year	Fatal		Injury		Deaths		Injuries	
	Number	%	Number	%	Number	%	Number	%
1986	266	41%	2575	20%	328	43%	4520	24%
1987	271	40%	2595	21%	329	41%	4498	24%
1988	266	43%	2500	21%	318	44%	4246	25%
1989	264	41%	2364	21%	321	42%	3969	24%
1990	268	42%	2716	22%	318	44%	4531	26%
1991	225	41%	2424	21%	269	41%	3935	24%
1992	221	41%	2282	21%	273	42%	3672	23%
1993	185	36%	1906	18%	227	38%	3042	20%
1994	190	38%	2044	18%	225	39%	3300	20%
1995	162	32%	2118	18%	200	34%	3421	20%
1996	129	28%	1652	16%	148	29%	2664	18%
1997	127	27%	1389	16%	147	27%	2317	17%
1998	118	27%	1347	16%	142	28%	2233	18%
1999	100	23%	1146	14%	122	24%	1904	16%
2000	101	26%	1063	14%	115	25%	1727	16%
2001	104	26%	1111	13%	118	26%	1870	15%
2002	95	26%	1296	13%	109	27%	1995	14%
2003	124	31%	1229	12%	141	31%	1953	14%
2004	116	31%	1235	12%	135	31%	1899	14%
2005	101	30%	1335	13%	116	29%	1996	14%
2006	99	28%	1537	14%	109	28%	2324	15%
2007	117	31%	1584	14%	128	30%	2336	15%

Note: The table shows crashes and all casualties from crashes in which at least one driver was affected by alcohol/drugs. Not included are the crashes in which only the pedestrians, cyclists and passengers were affected by alcohol/drugs.

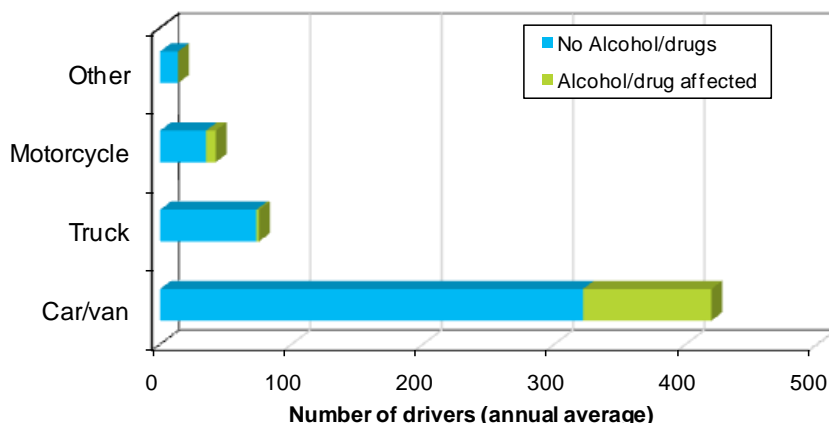
Alcohol/drug affected drivers involved in fatal crashes

Drivers affected by alcohol/drugs for selected groups										
Year	15-19 years only		20-24 years only		All males		All females		Total	
	Number	%	Number	%	Number	%	Number	%	Number	%
1986	58	35%	96	44%	250	31%	28	17%	280	28%
1987	54	28%	81	40%	258	31%	25	12%	283	27%
1988	41	28%	100	51%	260	34%	21	13%	281	30%
1989	55	38%	68	40%	245	31%	30	17%	277	28%
1990	50	39%	89	43%	251	33%	28	17%	281	30%
1991	39	34%	74	43%	203	32%	32	18%	240	29%
1992	42	43%	65	41%	213	33%	21	13%	236	29%
1993	35	37%	57	40%	178	29%	15	12%	196	26%
1994	22	29%	53	39%	177	30%	18	13%	195	26%
1995	28	33%	43	33%	141	23%	24	14%	166	21%
1996	26	28%	35	35%	117	22%	14	10%	132	20%
1997	15	19%	31	33%	113	21%	21	13%	135	19%
1998	16	21%	23	22%	103	20%	17	11%	122	18%
1999	14	19%	21	21%	82	15%	21	14%	103	15%
2000	20	33%	24	34%	89	19%	14	10%	104	17%
2001	22	32%	20	27%	95	20%	14	11%	109	18%
2002	14	28%	22	34%	88	21%	10	7%	98	18%
2003	24	32%	24	32%	116	24%	9	6%	125	20%
2004	21	26%	21	29%	98	21%	23	17%	121	20%
2005	17	20%	23	32%	86	20%	15	15%	101	19%
2006	19	30%	20	31%	84	20%	17	13%	101	19%
2007	19	29%	28	38%	98	22%	20	15%	118	21%

Note: The table includes drivers of all types of motorised vehicles, including motorcycles. For example, in 2007 22% of all male drivers involved in fatal crashes were affected by alcohol/drugs, compared to 15% of female drivers.

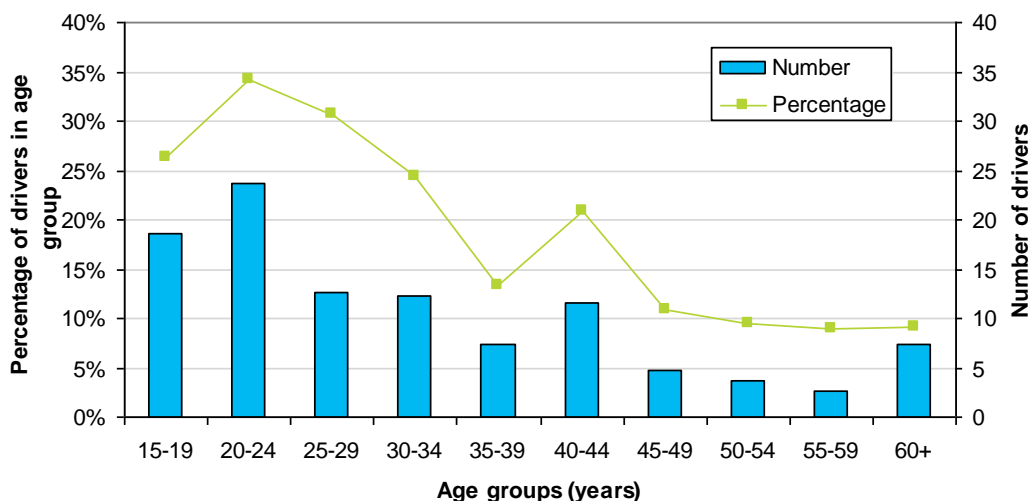
Drivers involved in fatal crashes

Drivers involved in fatal crashes by vehicle type (2005 - 2007)



From 2005 to 2007, 23 percent of car and van drivers and 17 percent of motorcyclists involved in fatal crashes were affected by alcohol/drugs. Three percent of truck drivers involved in fatal crashes were affected by alcohol/drugs. There were no fatal crashes involving bus or taxi drivers affected by alcohol/drugs.

Alcohol/drug affected drivers involved in fatal crashes by age group (annual average 2005 - 2007)



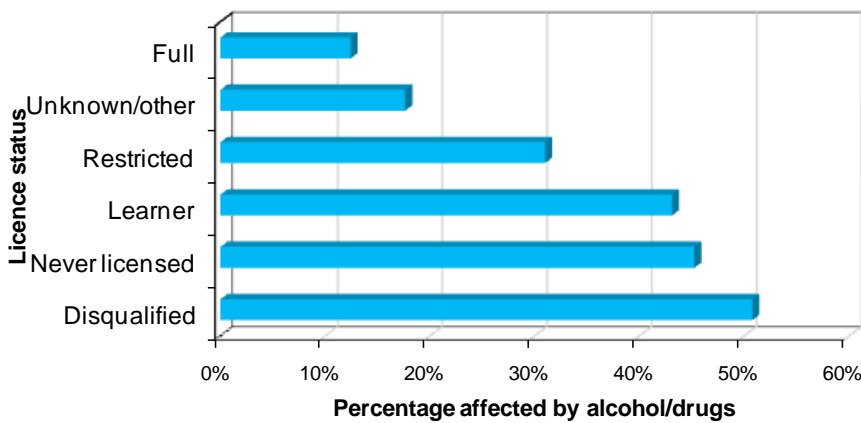
Drivers affected by alcohol/drugs (2005-2007)

Age	Males		Females		Total	
	Number	%	Number	%	Number	%
15-19	47	31%	9	16%	56	26%
20-24	58	36%	13	28%	71	34%
25-29	32	33%	6	23%	38	31%
30-34	30	25%	7	23%	37	24%
35-39	20	15%	2	6%	22	13%
40-44	29	22%	6	18%	35	21%
45-49	10	10%	4	13%	14	11%
50-54	10	11%	1	4%	11	9%
55-59	7	11%	1	4%	8	9%
60+	19	10%	3	5%	22	9%
Total	262	21%	52	14%	314	20%

Note: Rows and columns do not add up to the totals because the age or sex of some drivers was not recorded.

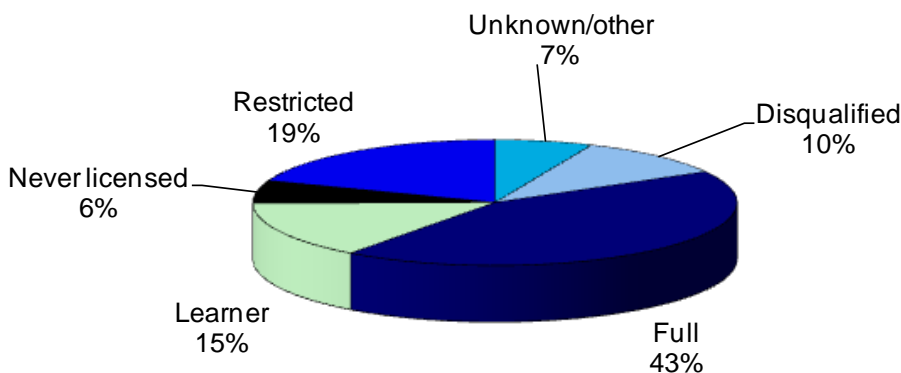
Of all drivers involved in fatal crashes, the 20-24 and 25-29 year old age groups were the most likely to be affected by alcohol/drugs. Above the age of 29, alcohol/drugs as a contributing factor in fatal crashes decreases.

Percentage of drivers involved in fatal crashes affected by drugs/alcohol by licence status (2005 - 2007)



Disqualified drivers in fatal crashes are much more likely to be affected by alcohol/drugs (51%) than drivers with a full licence (12%). Disqualified drivers comprise 10 percent of the alcohol/drug affected drivers in fatal crashes. Drivers with restricted or learner licences are more likely to be affected by alcohol/drugs than those with full licences. However, this group falls into the younger age categories

Licence status of drivers affected by alcohol/drugs in fatal crashes (2005 - 2007)



Note: Unknown/other includes drivers with an expired, unknown or wrong licence class. Disqualified includes drivers who have been forbidden to drive.

Legal limits

Age group	Blood units mg/100 ml of blood	Breath units µg/l of breath
Under 20 years	30	150
All other drivers	80	400

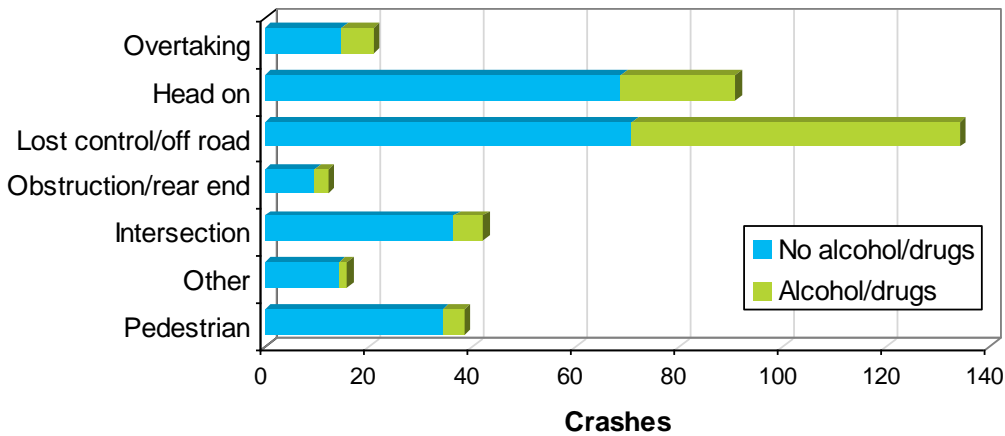
Note: mg = milligram
µg = microgram
l = litre
ml = millilitre

Largely a male problem

- Over 83 percent of the alcohol/drug-affected drivers in fatal crashes are male
- Only 14 percent of female drivers in fatal crashes were affected by alcohol/drugs compared to 21 percent of male drivers
- There were on average 87 male drivers and 17 female drivers affected by alcohol/drugs in fatal crashes each year between 2005 and 2007
- The difference between the sexes still exists when age and vehicle type are taken into account. For example, of the 20-24 year old car drivers in fatal crashes, 28 percent of the women and 44 percent of the men were affected by alcohol/drugs.

Types of crash

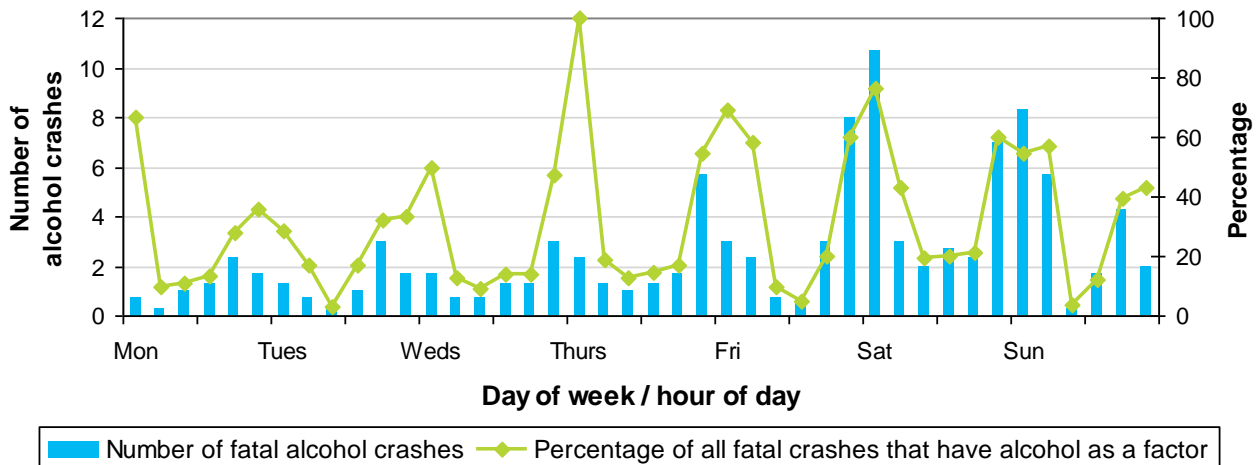
Types of fatal crashes with driver alcohol/drugs as a factor
(annual average 2005 - 2007)



Loss of control and head-on crashes are the most common types of fatal crash for drivers affected by alcohol/drugs. Over 80 percent of the fatal crashes in which driver alcohol/drugs was a factor fall into these categories.

When do alcohol/drug crashes occur?

Fatal crashes with driver alcohol/drugs as a factor
by time of day and day of week (annual average 2005 - 2007)



Note: A week is divided into 4-hour blocks, beginning 0000-0359 Monday, with days labelled at 0000 hours.

Fatal alcohol/drug crashes by time of day and day of week
(2005-2007)

Day	Day (0600-1759)		Evening (1800-2159)		Night (2200-0559)	
	Number	%	Number	%	Number	%
Monday	11	14%	8	38%	6	26%
Tuesday	9	12%	7	37%	9	35%
Wednesday	8	11%	9	33%	12	63%
Thursday	12	14%	11	35%	19	68%
Friday	11	12%	14	39%	54	72%
Saturday	22	22%	10	29%	51	59%
Sunday	18	18%	8	53%	6	43%
Total	91	15%	67	36%	157	58%

Note: On the day shown night begins at 2200 and finishes the following day at 0559.

Late at night, or in the early morning from Thursday night through to Sunday morning, are the most common times for fatal crashes that involve driver alcohol/drugs as a contributing factor.

Drivers killed in road crashes

Blood alcohol measurements are often available from the post-mortem examinations of drivers and motorcycle riders killed in road crashes. The table below shows how many drivers were tested and how many of those had a blood alcohol level above 80 mg/100 ml of blood (the legal limit for drivers 20 years and over).

Blood alcohol levels of drivers killed in road crashes								
Year	Number killed (A)	Number tested (B)	% tested	Number over 80 mg/100 ml (C)	Percent over 80 mg/100 ml		Adjusted for non-testing [*]	
					of all drivers (C/A)	of those tested (C/B)	Estimate of number over 80 mg/100 ml	Estimate of percent over 80 mg/100 ml
1989	413	292	71%	135	31%	44%	162	39%
1990	374	277	74%	137	37%	50%	172	46%
1991	342	240	70%	108	32%	45%	138	40%
1992	361	240	67%	98	27%	41%	129	36%
1993	333	233	70%	88	26%	38%	106	32%
1994	333	252	76%	105	32%	42%	127	38%
1995	314	237	76%	78	25%	33%	93	30%
1996	283	201	71%	66	23%	33%	84	30%
1997	304	218	72%	46	15%	21%	63	21%
1998	271	183	68%	56	21%	31%	74	27%
1999	293	215	73%	50	17%	23%	61	21%
2000	273	179	66%	55	20%	31%	58	20%
2001	267	204	76%	44	17%	22%	55	21%
2002	246	198	81%	52	21%	26%	60	24%
2003	262	191	73%	59	23%	31%	70	27%
2004	255	197	77%	57	22%	29%	69	27%
2005	237	171	72%	45	19%	26%	58	25%
2006	225	174	77%	46	20%	26%	54	24%
2007	241	196	81%	56	23%	29%	65	27%

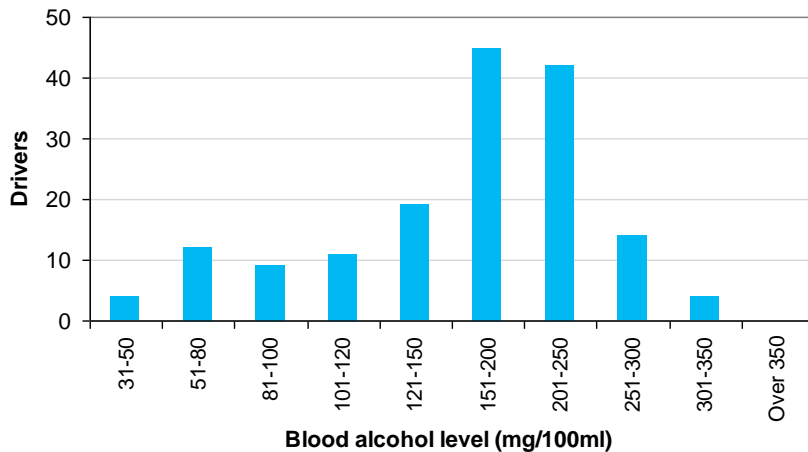
In addition to the drivers with blood alcohol levels above 80 mg/100 ml, there are on average one or two drivers aged 15-19 years who are killed with blood alcohol levels between 31 and 80 mg/100 ml each year. This level is above the legal limit for this age group.

^{*} If all drivers were tested, the number with a blood alcohol level over 80 mg/100 ml would be higher than the number shown in the table (C). However, drivers who are not tested are less likely to have a high blood alcohol level than tested drivers. This is because blood tests are more often taken in situations where alcohol is suspected to have contributed to the crash. Because of this, if test results were available for all drivers, it is likely that the actual percentage of drivers with a blood alcohol level above 80 mg/100 ml would lie between the two measures shown on the table (C/A and C/B). The values in the shaded section of the table are the best estimates of what the results would be if blood tests had been performed for all drivers killed in crashes. The estimate is made by assuming that the alcohol involvement rate for untested drivers with "alcohol suspected" is the same as for the tested drivers with "alcohol suspected", and similarly for drivers with "alcohol not suspected".

Seatbelts

Drivers affected by alcohol are less likely to wear seatbelts than sober drivers. For the car and van drivers killed between 2005 and 2007, 46 percent of those who had a blood alcohol level above the legal limit were not restrained at the time of the crash. This compares to 13 percent for drivers whose blood alcohol level was known to be below the limit (restraint use was not recorded for about nine percent of the drivers killed, so the level of restraint use may be even lower than indicated).

Blood alcohol levels of drivers killed in crashes (2005 - 2007)



This graph shows the distribution of blood alcohol levels for drivers who were tested and had a blood alcohol level above 30 mg/100 ml. Many of the drivers killed had blood alcohol levels well in excess of the legal limit (of 80 mg/100 ml). Over half of those who tested positive had a blood alcohol level over 150 mg/100 ml.

The recent history of drink-driving legislation

- Until 1969 the law prohibited drunk driving, which meant the police had to prove driver impairment
- In 1969 100 mg/100 ml was set as the legal blood alcohol limit and preliminary breath screening procedures were established
- The first national blitzes took place in July and December of 1978.
- The legal blood alcohol level was reduced in December 1978 to 80 mg/100 ml and evidential breath testing was introduced with a breath alcohol limit of 500 µg/l
- Section 30A of the Transport Act became effective in December 1983. It targeted recidivist convicted drunk drivers. Drivers convicted twice within five years, where one of the offences was a high blood or breath alcohol level, were disqualified for a minimum of two years. Before their licences could be restored they had to be assessed as no longer dependent on alcohol.
- Random stopping started in November 1984. Drivers were stopped at checkpoints, but only tested if the officer suspected alcohol had been consumed.
- In 1988, the legal breath alcohol limit was reduced from 500 to 400 µg/l.
- In April 1993, compulsory breath testing (CBT) was introduced and the legal blood and breath alcohol limits for those under 20 years were lowered to 30 mg/100 ml and 150 µg/l, respectively
- In July 1996, the law relating to confiscation of vehicles owned by serious repeat traffic offenders (including drunk drivers) was strengthened
- In March 1999, higher penalties began for drivers on their third or subsequent drink driving offence
- In May 1999, mandatory licence suspension for 28 days was introduced for drivers caught driving while grossly intoxicated (breath or blood alcohol level above 800 µg/l or 160 mg/100 ml, respectively). Also introduced was vehicle impoundment for disqualified driving. A major reason for licence disqualification is drink driving. At the same time, mandatory licence carriage and photo driver licences were introduced.
- In December 1999, the minimum alcohol purchase age was lowered from 20 to 18 years
- On the 16th of January 2006 amendments were introduced which lowered the threshold for mandatory licence suspension for 28 days from 160 mg/100 ml to 130 mg/100 ml. Additional penalties targeting repeat drink drivers were also introduced; on the 2nd offence (within the previous four years) immediate 28-day licence suspension at levels beyond the adult legal limits. On the 3rd offence (within the previous four years), immediate 28-day licence suspension and 28-day impoundment of vehicle at levels beyond the adult legal limits. Finally, section 65 of the Land Transport Act 1998 was strengthened by widening the criteria to include drink drivers who had three or more drink driving-related convictions (of any level) within a five-year period. Also the mandatory minimum licence disqualification period was changed to one year and one day (previously two years).

For further information on crash statistics see *Motor Vehicle Crashes in New Zealand*, the annual statistical statement produced by the Ministry of Transport. This publication is available in secondary school libraries and many public libraries.

Enquiries relating to crash statistics may be directed to the Ministry of Transport, PO Box 3175, Wellington, or by email on

info@transport.govt.nz. For more information about road safety, visit the Ministry of Transport website at www.transport.govt.nz.

"Alcohol/drugs" was prepared by Strategy and Sustainability, Ministry of Transport, July 2008.