



Alcohol and drugs 2017

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Additional information

Enquires 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.

A selection of fact sheets is available via the research section of the Ministry of Transport website.

These include:

Crash fact sheets

- ▶ Alcohol and drugs
- ▶ Cyclists
- ▶ Diverted attention
- ▶ Fatigue
- ▶ Motorcyclists
- ▶ Overseas drivers
- ▶ Pedestrians
- ▶ Speed
- ▶ Trucks
- ▶ Young drivers

Travel survey fact sheets

- ▶ Comparing travel modes
- ▶ Cycling
- ▶ Driver travel
- ▶ Motorcycling
- ▶ Public transport
- ▶ Risk on the road
 - ▶ Introduction and mode comparison
 - ▶ Drivers and their passengers
 - ▶ Pedestrians, cyclists and motorcyclists
- ▶ Walking

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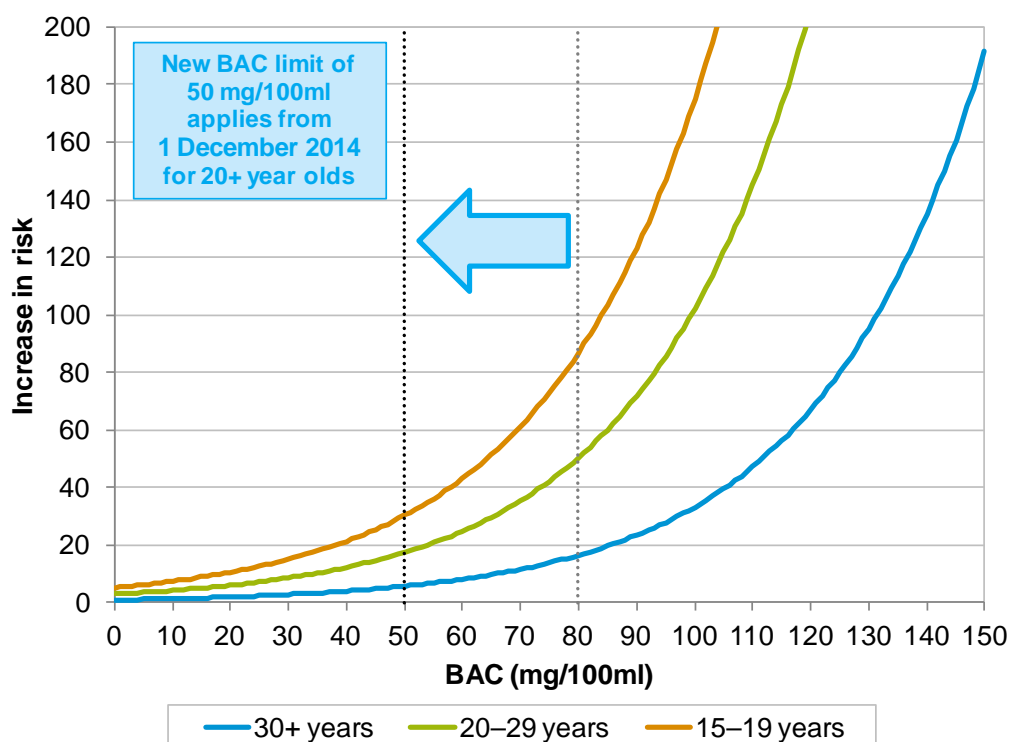
Key facts

In 2016 driver alcohol/drugs were a contributing factor¹ in 80 fatal traffic crashes, 144 serious injury crashes and 479 minor injury crashes. These crashes resulted in 89 deaths, 189 serious injuries and 674 minor injuries. The total social cost of crashes involving alcohol/drugs was about \$564 million; 14 percent of the social cost associated with all injury crashes.

Overview

Many studies show that the risk of being involved in a crash increases as a driver's blood alcohol concentration (BAC) increases. At high blood alcohol levels the risk rapidly increases.

Figure 1: Relative risk of fatal crash by blood alcohol level



The graph above shows the results of a New Zealand study of drivers involved in fatal crashes².

There is a clear increase in risk as blood alcohol levels increase. As shown in the graph above and the table below, crash risk is higher for young drivers. The calculation of risk is made in relation to that of a sober driver aged 30+ years.

¹ **Alcohol/drugs as a contributing factor:** For 2016, alcohol information from crash reports is not comparable with earlier years. Prior to 2016, 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. From 2016 officer suspicion is not included – see note in [Terminology](#) at the end of the fact sheet. Additional definitions including those for casualties, fatal, serious and minor injuries and social cost are included in [Terminology](#) at the end of the fact sheet.

² Keall, Frith and Patterson (2004).

Table 1: Relative risk of fatal crash by blood alcohol level by age

BAC	30+ years	20–29 years	15–19 years
0	1.0	3.0	5.3
30	2.9	8.7	15.0
50	5.8	17.5	30.3
80	16.5	50.2	86.6

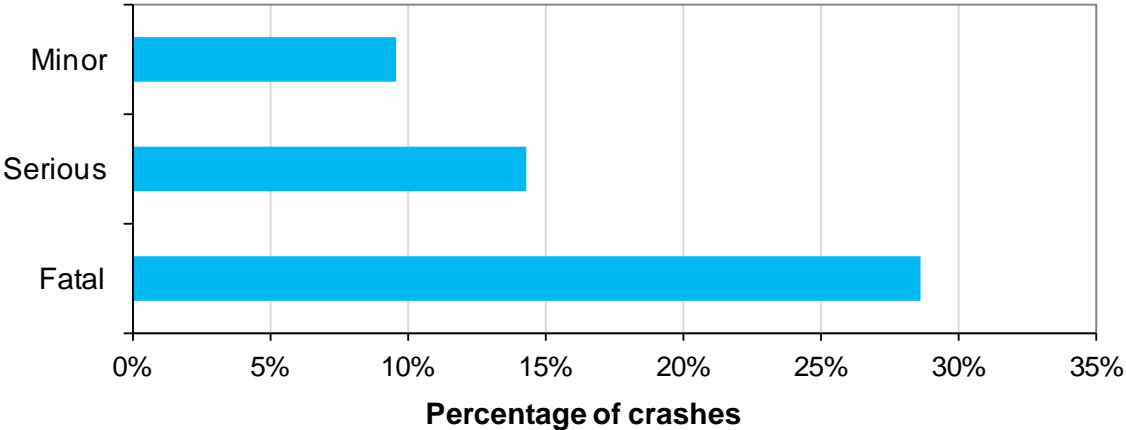
The table above shows that at 80mg of alcohol per 100ml of blood a driver is about sixteen times as likely to be involved in a fatal crash as the same driver with a zero blood alcohol level.

People with a high blood alcohol level are more likely to be injured or die in a crash than those who are sober³.

Contribution of alcohol/drugs to crashes

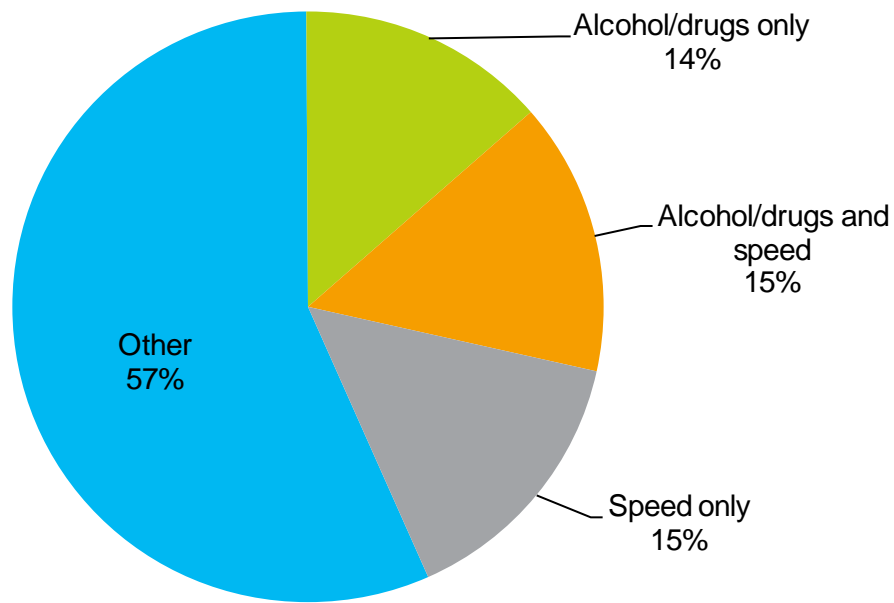
As crash severity increases, so does the contribution of alcohol/drugs. Over the years 2014–2016, alcohol/drugs were a factor in 29 percent of fatal crashes, 14 percent of serious injury crashes and 10 percent of minor injury crashes.

Figure 2: Percentage of crashes with alcohol/drugs as a contributing factor (2014–2016)



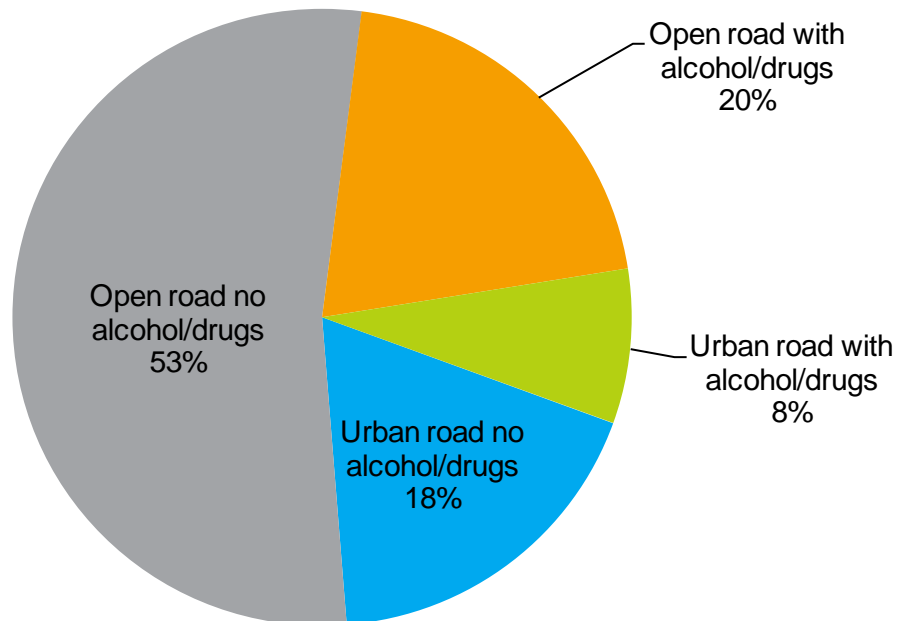
³ Evans (2004)

Figure 3: Alcohol/drugs and speed in fatal crashes 2014–2016



The combination of alcohol/drugs and speed contributes to 15 percent of fatal crashes. Alcohol/drugs alone contribute to 14 percent, and speed alone to 15 percent, of fatal crashes.

Figure 4: Alcohol/drugs in fatal crashes by road type (2014–2016)



Of all fatal crashes, 20 percent are open road crashes with alcohol/drugs as a contributing factor. A further 8 percent are urban crashes with alcohol/drugs as a contributing factor.

Overall, alcohol/drugs were a contributing factor in 31 percent of urban fatal crashes and 28 percent of open road fatal crashes.

Who dies in crashes involving alcohol/drugs?

For every 100 alcohol or drug-impaired drivers or riders who died in road crashes, 37 of their passengers and 19 sober road users died with them.

Table 2: Deaths in crashes where alcohol/drugs was a contributing factor (2014–2016)

Casualty age	Drunk/drugged drivers	Passengers with drunk/drugged drivers	Other road users	Percentage of all deaths in age group
0-14	0	2	1	8%
15-19	16	22	3	39%
20-24	37	15	2	45%
25-29	27	3	2	33%
30-39	40	7	2	46%
40-49	27	5	6	33%
50-59	12	6	6	20%
60+	8	0	10	8%
Unknown	0	2	0	14%
Total	167	62	32	28%

This table shows the deaths resulting from crashes with alcohol/drug-affected drivers. In addition, between 2014 and 2016 there were 13 alcohol/drug affected pedestrians who died on New Zealand roads. In some of these cases an alcohol affected driver was also involved.

Safety belts

Drivers affected by alcohol are less likely to wear safety belts than sober drivers. For the car and van drivers who died between 2014 and 2016, 47 percent of drivers affected by alcohol/drugs were not restrained at the time of the crash. This compares to 16 percent of drivers not affected by alcohol/drugs. Restraint use was not recorded for about 20 percent of the drivers who die, so the level of restraint use may be even lower than indicated.

Time series

Table 3: Crashes and casualties with alcohol/drugs as a contributing factor

Year	Crashes with driver alcohol/drugs as a factor				Casualties from crashes with driver alcohol/drugs as a factor			
	Fatal		Injury		Deaths		Injuries	
	Number	% of all fatal crashes	Number	% of all injury crashes	Number	% of all deaths	Number	% of all injuries
1990	268	42%	2,716	22%	318	44%	4,531	26%
1991	225	41%	2,424	21%	269	41%	3,935	24%
1992	221	41%	2,282	21%	273	42%	3,672	23%
1993	185	36%	1,906	18%	227	38%	3,042	20%
1994	190	38%	2,044	18%	225	39%	3,300	20%
1995	162	32%	2,118	18%	200	34%	3,421	20%
1996	129	28%	1,652	16%	148	29%	2,664	18%
1997	127	27%	1,389	16%	147	27%	2,317	17%
1998	118	27%	1,347	16%	142	28%	2,233	18%
1999	101	23%	1,147	14%	122	24%	1,903	16%
2000	98	26%	1,071	14%	109	24%	1,738	16%
2001	103	26%	1,117	13%	117	26%	1,876	15%
2002	96	26%	1,308	13%	110	27%	2,015	14%
2003	125	31%	1,249	12%	142	31%	1,982	14%
2004	115	31%	1,258	12%	133	31%	1,923	14%
2005	100	29%	1,352	13%	115	28%	2,024	14%
2006	100	29%	1,585	14%	110	28%	2,404	16%
2007	119	32%	1,621	14%	130	31%	2,408	15%
2008	105	32%	1,637	14%	121	33%	2,381	16%
2009	117	34%	1,540	14%	142	37%	2,347	16%
2010	123	37%	1,414	13%	144	38%	2,119	15%
2011	79	31%	1,330	14%	87	31%	1,901	15%
2012	83	31%	1,279	14%	103	33%	1,814	15%
2013	70	29%	1,185	13%	76	30%	1,666	14%
2014	70	26%	1,127	13%	79	27%	1,565	14%
2015	88	30%	1,174	12%	90	28%	1,623	13%
2016*	80	28%	623	6%	89	27%	863	7%

Note: This 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.

* 2016 data is not comparable to earlier years – see note in [Terminology](#) at the end of the fact sheet.

Table 4: Alcohol/drug affected drivers involved in fatal crashes

Year	Drivers affected by alcohol/drugs, for selected groups									
	15–19 years		20–24 years		All males		All females		Total	
	Number	% of drivers in age group	Number	% of drivers in age group	Number	% of male drivers	Number	% of female drivers	Number	% of drivers
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	18	30%	24	33%	85	19%	13	9%	99	17%
2001	22	32%	20	27%	94	20%	13	10%	107	18%
2002	14	28%	23	36%	88	22%	11	8%	99	18%
2003	25	32%	24	32%	117	25%	9	6%	126	20%
2004	20	25%	21	30%	95	21%	22	16%	118	20%
2005	18	21%	22	31%	85	20%	16	16%	101	19%
2006	19	30%	20	31%	85	21%	17	13%	102	19%
2007	19	29%	29	39%	99	23%	21	16%	120	21%
2008	17	25%	30	43%	94	26%	18	16%	112	24%
2009	23	39%	25	38%	94	25%	25	20%	121	24%
2010	22	36%	32	47%	105	27%	18	16%	124	25%
2011	13	41%	21	39%	72	24%	8	10%	80	21%
2012	9	39%	24	45%	75	24%	12	13%	87	22%
2013	14	48%	20	43%	55	20%	15	17%	70	19%
2014	6	26%	12	29%	57	19%	12	12%	71	18%
2015	10	28%	22	38%	84	24%	8	8%	92	21%
2016*	8	22%	16	29%	67	18%	14	15%	81	18%

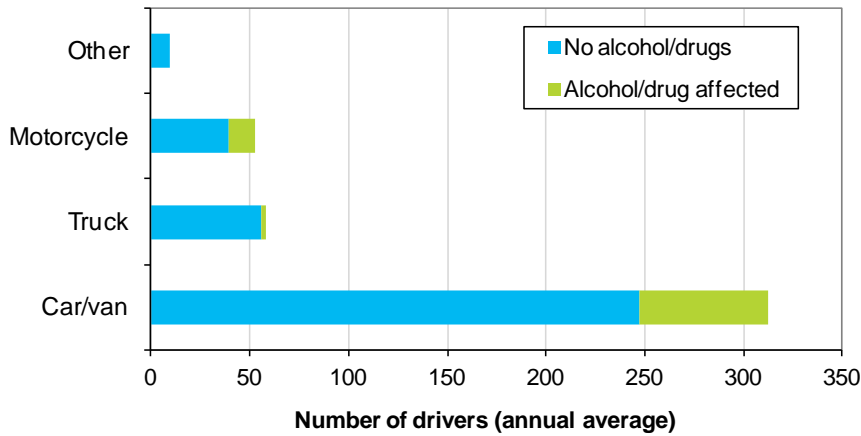
Note: This table includes drivers of all types of motorised vehicles, including motorcycles.

Columns do not necessarily add to the total as sex is not recorded for some drivers.

* 2016 data is not comparable to earlier years – see note in [Terminology](#) at the end of the fact sheet.

Drivers involved in fatal crashes

Figure 5: Drivers involved in fatal crashes by vehicle type (2014–2016)



From 2014–2016, 21 percent of car and van drivers and 25 percent of motorcyclists involved in fatal crashes were affected by alcohol/drugs. Five percent of truck drivers involved in fatal crashes were affected by alcohol/drugs. There were no crashes involving bus or taxi drivers affected by alcohol or drugs.

Figure 6: Alcohol/drug affected drivers involved in fatal crashes by age-group (annual average 2014–2016)

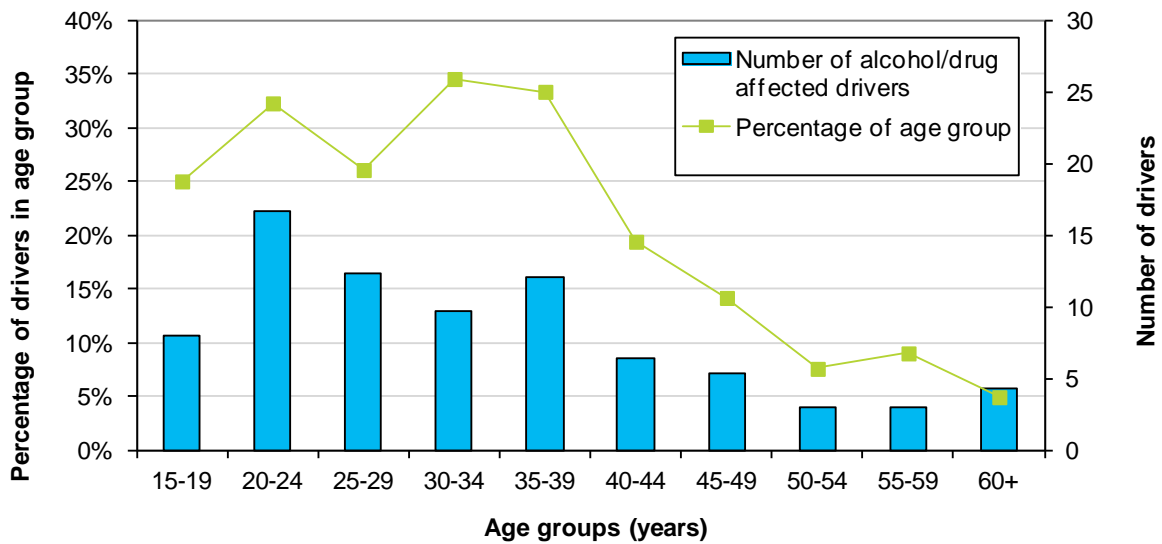


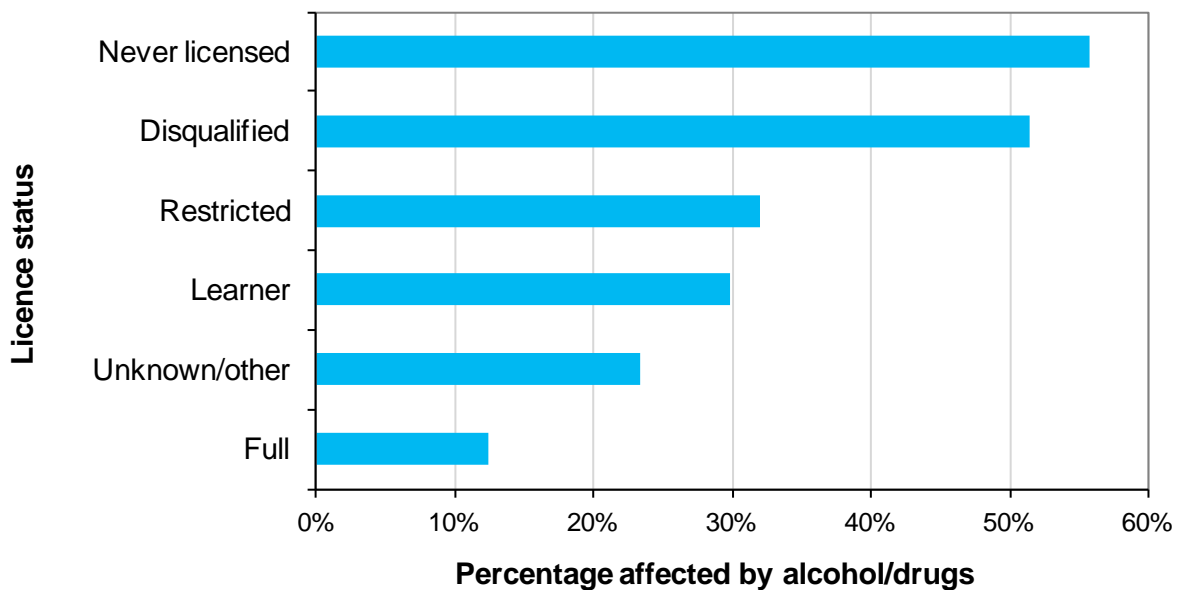
Table 5: Drivers affected by alcohol/drugs (2014–2016)

Age	Drivers in fatal crashes affected by alcohol/drugs (2014–2016)						Drivers in fatal and serious injury crashes	
	Males		Females		Total		Total	
	Number	%	Number	%	Number	%	Number	%
15-19	21	29%	3	13%	24	25%	129	15%
20-24	45	35%	5	19%	50	32%	248	20%
25-29	31	28%	6	19%	37	26%	177	17%
30-34	25	36%	4	29%	29	35%	114	15%
35-39	26	32%	10	38%	36	33%	95	14%
40-44	18	23%	1	5%	19	19%	77	10%
45-49	15	16%	1	5%	16	14%	76	10%
50-54	7	8%	2	7%	9	8%	47	6%
55-59	8	10%	1	5%	9	9%	35	5%
60+	12	6%	1	1%	13	5%	56	4%
Total	208	21%	34	12%	244	19%	1,070	11%

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

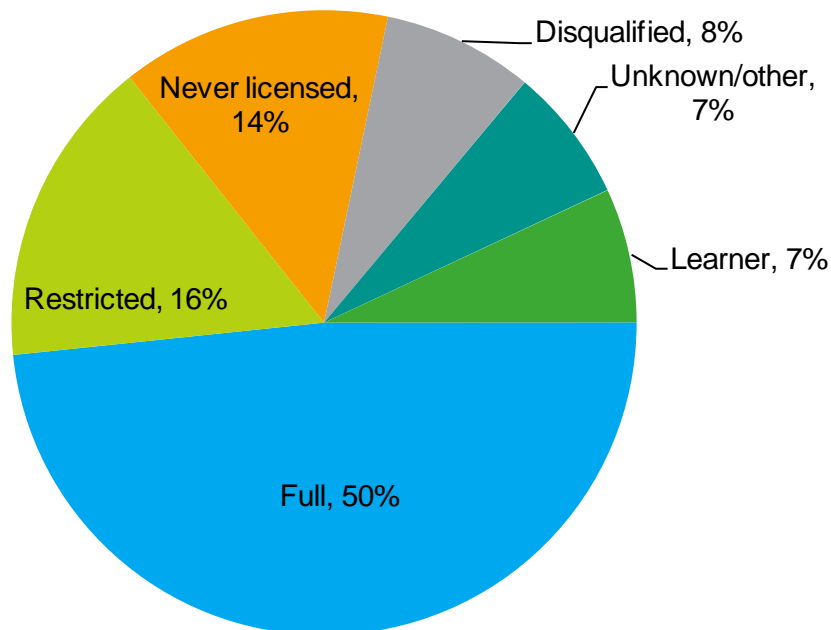
Of all drivers involved in fatal crashes, the 20-24 age group has the greatest number of drivers affected by alcohol/drugs. For older drivers, alcohol/drugs generally decrease as a contributing factor in fatal crashes. For fatal and serious injury crashes combined, this pattern is much clearer with a smooth decrease in the contribution of alcohol/drugs for those older than the 20-24 age group.

Figure 7: Drivers in fatal crashes – percentage of each licence status affected by alcohol/drugs (2014–2016)



Unlicensed and disqualified drivers in fatal crashes are most likely to be affected by alcohol. Overall, unlicensed and disqualified drivers comprise 22 percent of the alcohol/drug affected drivers in fatal crashes (Figure 8). 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, which are associated with more risky driving behaviour overall.

Figure 8: Licence status of drivers affected by alcohol/drugs in fatal crashes (2014–2016)



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

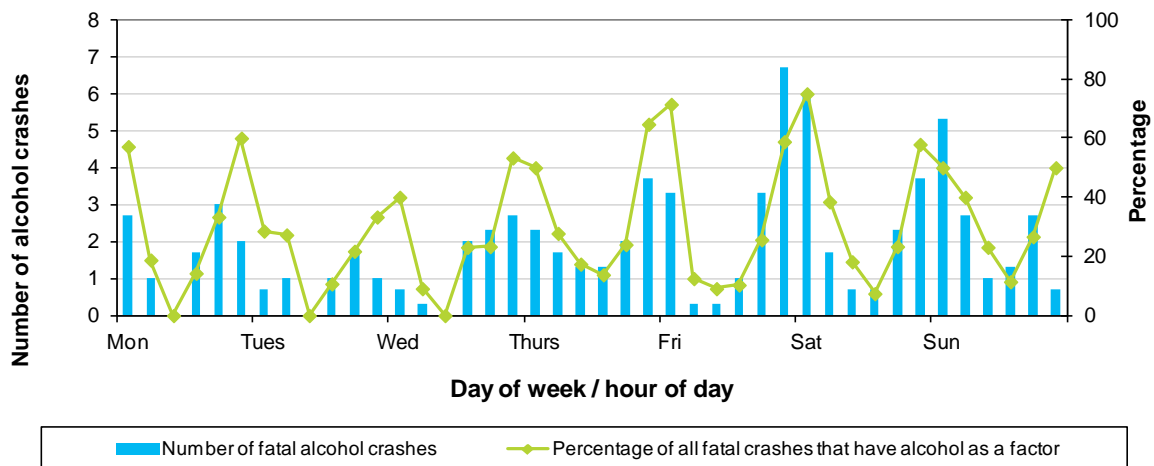
Largely a male issue

For the 3 years 2014-2016:

- ▶ Of the alcohol/drug-affected drivers in fatal crashes, 86 percent were male.
- ▶ There were, on average, 69 male drivers and 11 female drivers affected by alcohol/drugs in fatal crashes each year between 2014 and 2016.
- ▶ Only 12 percent of female drivers in all fatal crashes were affected by alcohol/drugs compared to 21 percent of male drivers.
- ▶ 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, 19 percent of the women and 37 percent of the men were affected by alcohol/drugs.

When do alcohol/drug crashes occur?

Figure 9: Fatal crashes with driver alcohol/drugs as a factor by time of day and day of week (annual average 2014–2016)



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

Table 6: Fatal alcohol/drug crashes by time of day and day of week (2014–2016)

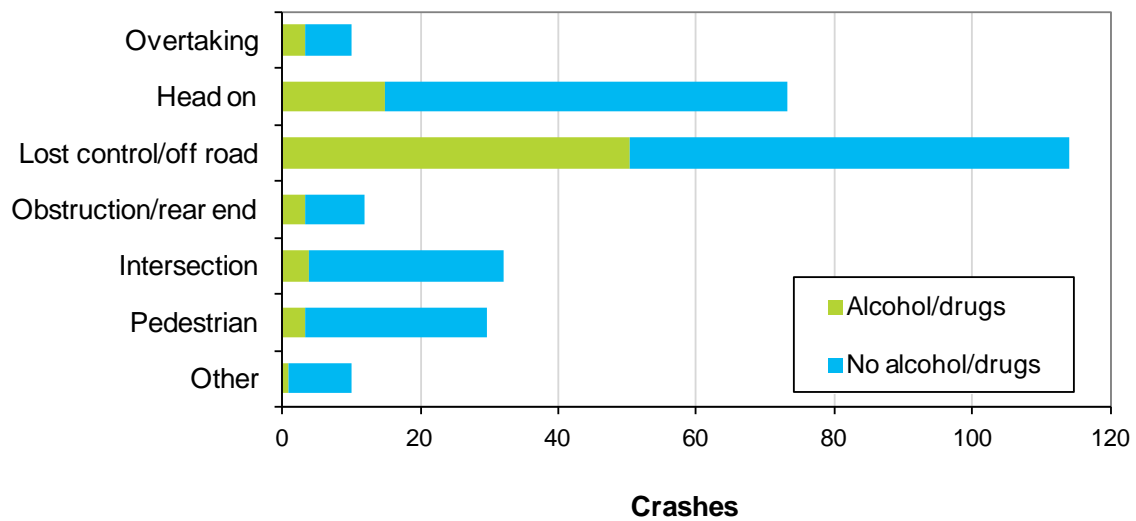
Day	Day (0600–1759)		Evening (1800–2159)		Night (2200–0559)	
	Number	%	Number	%	Number	%
Monday	12	15%	5	42%	6	43%
Tuesday	9	12%	5	45%	3	25%
Wednesday	9	13%	7	35%	14	54%
Thursday	15	19%	8	38%	16	64%
Friday	12	18%	13	34%	30	73%
Saturday	11	17%	5	25%	31	55%
Sunday	12	17%	5	31%	11	55%
Total	80	16%	48	35%	111	57%

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 Friday night through to Sunday morning, is when the highest number of fatal crashes involving alcohol/drugs occurs.

Types of crash

Figure 10: Types of fatal crashes with driver alcohol/drugs as a factor (annual average 2014–2016)

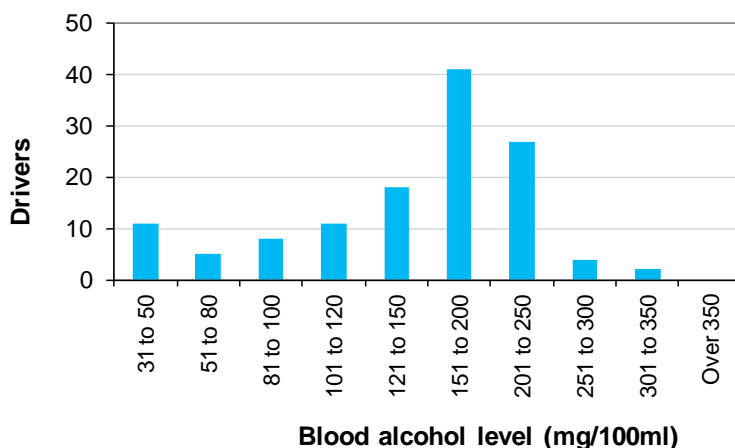


Loss of control and head-on crashes are the most common types of fatal crash for drivers affected by alcohol/drugs. Eighty-one percent of the fatal crashes in which alcohol/drugs were a factor fall into these categories.

Drivers who die in road crashes

Blood alcohol measurements are often available from the post-mortem examinations of drivers and motorcycle riders who die in road crashes. Table 7 shows how many were tested and how many of those had a blood alcohol level above the legal limit. The legal limit for drivers aged 20 years and over prior to 1 December 2014 was 80mg/100ml of blood. From that date, the limit has been 50mg/100ml of blood.

Figure 11: Blood alcohol levels of drivers who died in crashes (2014–2016)



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

Table 7: Blood alcohol levels of drivers and motorcycle riders who died in road crashes

Year	Number who died (A)	Number tested (B)	% tested	Number over legal limit (C)	Percent over legal limit		Adjusted for non-testing*	
					of all drivers (C/A)	of those tested (C/B)	Estimate of number over legal limit	Estimate of percent over legal limit
2000	273	179	66%	55	20%	31%	58	21%
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%
2008	211	171	81%	53	25%	31%	59	28%
2009	238	191	80%	57	24%	30%	66	28%
2010	227	181	80%	59	26%	33%	68	30%
2011	184	143	78%	44	24%	31%	48	26%
2012	183	128	70%	35	19%	27%	49	27%
2013	164	138	84%	35	21%	25%	38	23%
2014	171	149	87%	28	16%	19%	31	18%
2015	207	173	84%	45	22%	26%	51	25%
2016	215	174	81%	43	20%	25%	50	23%

* If all drivers who die in crashes were tested, the number with a blood alcohol level over the legal limit would be higher than the number shown in the table (column 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 fatal crash. If test results were available for all drivers who die in crashes, it is likely that the actual percentage of drivers with a blood alcohol level above the legal limit would lie between the two measures shown on the table (C/A and C/B). The values at the right end of the table are the best estimates of what the results would be if blood tests had been performed for all drivers who died in crashes. The estimate is made by assuming that the alcohol involvement rate for untested drivers with 'alcohol suspected' is the same as that for the tested drivers with 'alcohol suspected', and similarly for drivers with 'alcohol not suspected'.

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, 100mg/100ml 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 80mg/100ml and evidential breath testing was introduced with a breath alcohol limit of 500µg/l.
- ▶ Section 30A of the Transport Act 1962 became effective in December 1983. It targeted recidivist convicted drunk drivers. Drivers convicted twice within 5 years, where one of the offences was a high blood or breath alcohol level, were disqualified for a minimum of 2 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 a police officer suspected alcohol had been consumed.
- ▶ In 1988, the legal breath alcohol limit was reduced from 500 to 400µg/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 30mg/100ml and 150µg/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 were introduced 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 800µg/l or 160mg/100ml, 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 16 January 2006, the threshold for mandatory 28 day licence suspension was lowered from 160mg/100ml to 130mg/100ml. Additional penalties targeting repeat drink drivers were also introduced. For a second offence at levels beyond the adult legal limits (within the previous 4 years) - immediate 28-day licence suspension. For a third offence at levels beyond the adult legal limits (within the previous 4 years) - immediate 28-day licence suspension and 28-day impoundment of the vehicle. 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 5 year period. Also the mandatory minimum licence disqualification period was changed to 1 year and 1 day (previously 2 years).

- ▶ On 1 November 2009 a new offence was created of “driving while impaired and with evidence in the bloodstream of a qualifying drug” (Land Transport Amendment Act 2009). Under the new law, police are empowered, where there is good cause to suspect that a driver has consumed a drug, to require the driver to undertake a compulsory impairment test. If the driver cannot successfully complete the test, the police officer may require the driver to provide a blood sample for testing. Drugs targeted include opiates, amphetamines, cannabis, sedatives, antidepressants and methadone. The list will be reviewed from time to time in the light of research, and changes in New Zealanders’ drug taking habits. The penalties generally reflect the penalties for drink driving.
- ▶ On 7 August 2011 the legal breath and blood limit for those under 20 years was lowered to zero. The collection of research information on the number of drivers, involved in fatal or serious injury crashes, whose alcohol levels were between BAC 0.05 and 0.08 also began.
- ▶ On 10 September 2012, section 65A of the Land Transport Act 1998 came into force. New provisions available to the courts where repeat drink drive offenders and first time offenders convicted of driving with blood alcohol levels double the current adult limit could be given an alcohol interlock disqualification. In addition, the zero alcohol licence sanction is available to the courts, which requires drivers to maintain a zero alcohol limit for a fixed period of three years.
- ▶ On 1 December 2014, the legal breath alcohol limit for adult drivers (aged 20 and over) reduced from 400 to 250 micrograms of alcohol per litre of breath, and the blood alcohol limit from 80 to 50 milligrams of alcohol per 100 millilitres of blood. Offences for adult drivers with alcohol levels between the new and old limits (251 to 400 micrograms of alcohol per litre of breath and 51 to 80 milligrams of alcohol per 100 millilitres of blood) are infringement offences. Adult drivers, whose breath alcohol levels are in the infringement range, do not have the right to elect a blood test for the infringement offence.

Terminology

Fatal injuries: injuries that result in death within 30 days of the crash.

Serious injuries: fractures, concussions, internal injuries, crushings, severe cuts and lacerations, severe general shock necessitating medical treatment and any other injury involving removal to and detention in hospital.

Minor injuries: injuries of a minor nature such as sprains and bruises.

Social cost: a measure of the total cost of road crashes to the nation. It includes: loss of life and life quality; loss of productivity; and medical, legal, court, and property damage costs.

Casualty: person who sustained fatal, serious or minor injuries.

Alcohol/drugs as a contributing factor: For 2016, alcohol information from crash reports is not comparable with earlier years. Prior to 2016, 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. From 2016 officer suspicion is not included. The reason for this change is a change in the crash reporting process as explained in the following note from the NZTA's Crash Analysis System.

Notes from NZTA's Crash Analysis System (CAS) - 13 September 2017

Over the last few years the NZ Transport Agency, NZ Police and the Ministry of Transport have been working to improve how road crash information is recorded, processed and then provided to the road safety community.

As you may know there have already been some changes. The NZ Police now submit crash information electronically via iPhones and we are maximising this data by improving and modernising CAS through the CAS replacement project.

Alcohol suspected (July 2017)

Previously we let you know that, since July 2016, we have noticed a sharp increase in alcohol related crashes recorded in CAS. Alcohol related crashes include crashes where alcohol is suspected but we do not have a breath/blood alcohol result (factor 101), and where an alcohol test has shown the driver to be over the limit or where a test was refused (factor 103). We noted that the increase was being driven by a sharp increase in factor 101 'alcohol suspected'.

NZTA and NZ Police have been investigating what is driving this trend and are now able to advise that this is due to:

- Understanding how business rules around alcohol suspected cases are applied and interpreted between NZTA and NZ Police
- Since NZ Police moved to electronic data collection, Traffic Crash Reports are received by NZTA quicker and fewer crashes with alcohol suspected have subsequently been updated with a blood or breath alcohol result. These crashes remain 101 'alcohol suspected' as opposed to being recoded as a 102 - 'alcohol test below limit' or 103 - 'alcohol test above limit or test refused'.

NZTA and NZ Police are working together to implement a common understanding of alcohol suspected, and to ensure alcohol crashes are updated, and are taking steps to bring this data up to date with the receipt of more alcohol test results. As we receive these some 101 codes will change to 103 and some to 102 (alcohol test below limit). Because of this, care should also be taken when analysing codes 102 and 103.

In the meantime, we would suggest that you exclude 101's from your analysis if it is possible for you to do so.

References:

Evans, L. (2004) *Traffic Safety*, p141.

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.