

Alcohol/drugs

CRASH STATISTICS FOR THE YEAR ENDED 31 DECEMBER 2011

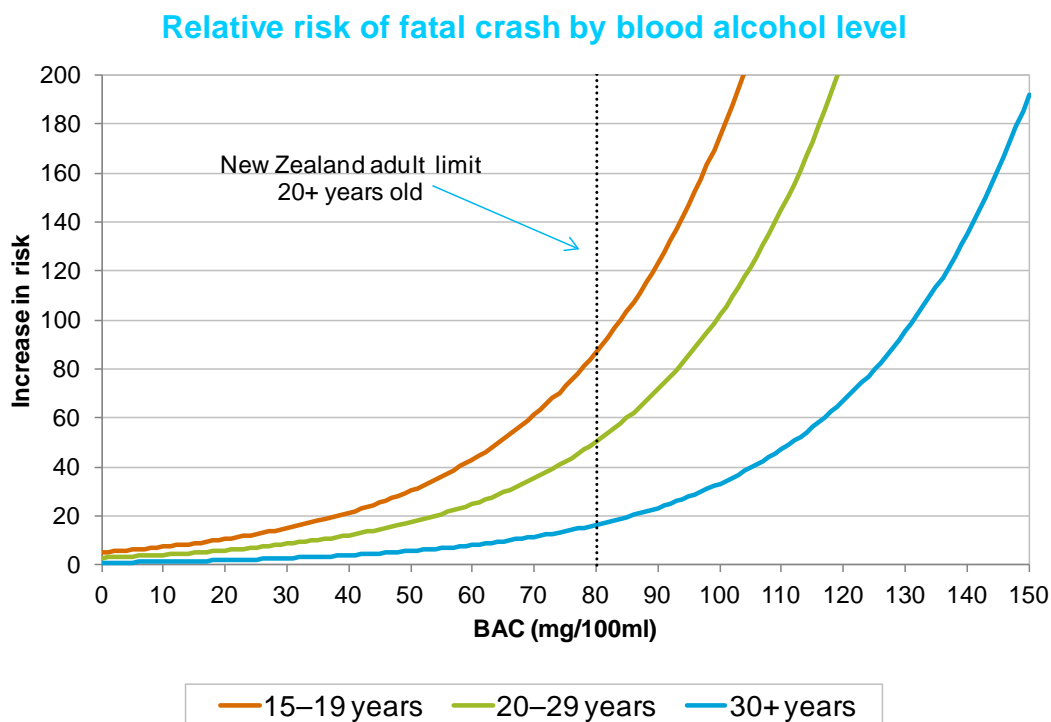
Prepared by the Ministry of Transport

CRASH FACTSHEET

2012

In 2011 driver alcohol/drugs were a contributing factor¹ in 77 fatal traffic crashes, 360 serious injury crashes and 970 minor injury crashes. These crashes resulted in 85 deaths, 466 serious injuries and 1,435 minor injuries. The total social cost of crashes involving alcohol/drugs was about \$685 million; 22 percent of the social cost associated with all injury crashes.

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.



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, the effect is more pronounced 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:** 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. 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).

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

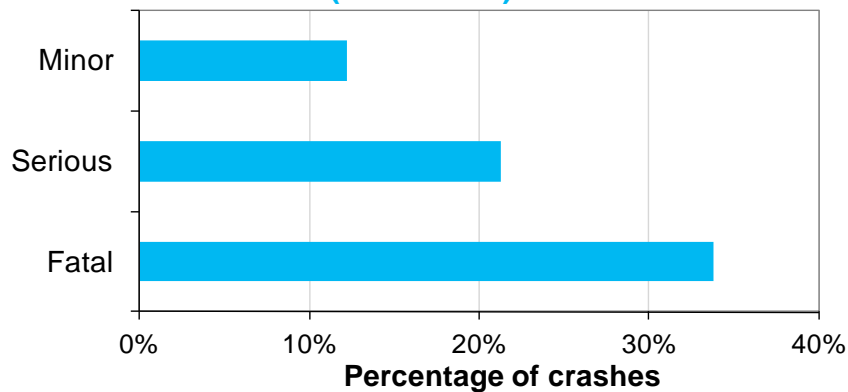
The table above shows that at 80mg of alcohol per 100ml of blood a driver is about sixteen times as likely to be involved in a fatal crash as the same driver with a zero blood alcohol level.

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

Contribution of alcohol/drugs

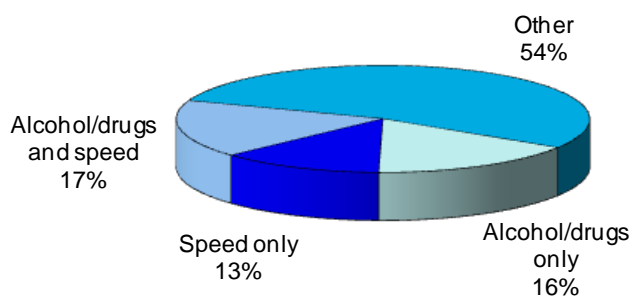
As crash severity increases, so does the contribution of alcohol/drugs. Over the years 2009–2011, alcohol/drugs were a factor in 34 percent of fatal crashes, 21 percent of serious injury crashes and 12 percent of minor injury crashes.

Percentage of crashes with alcohol or drugs as a contributing factor (2009–2011)



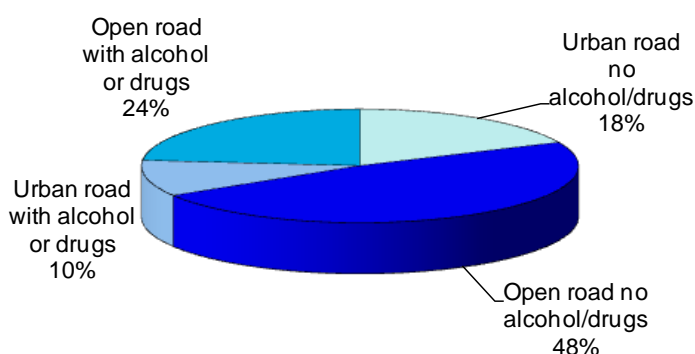
³ Evans (2004)

Alcohol/drugs and speed in fatal crashes (2009–2011)



The combination of alcohol/drugs and speed contributes to 17 percent of fatal crashes. Alcohol/drugs alone contribute to 16 percent, and speed alone to 13 percent, of fatal crashes.

Alcohol/drugs in fatal crashes by road type (2009–2011)



Of all fatal crashes, 24 percent are open road crashes with alcohol/drugs as a contributing factor. A further 10 percent are urban crashes with alcohol/drugs as a contributing factor.

Overall, alcohol/drugs were a contributing factor in 36 percent of urban fatal crashes and 33 percent of open road fatal crashes.

Who dies?

For every 100 alcohol or drug-impaired drivers or riders who died in road crashes, 50 of their passengers and 19 sober road users died with them.

Deaths in crashes where alcohol/drugs were a contributing factor (2009–2011)				
Casualty age	Drunk/drugged drivers	Passengers with drunk/drugged drivers	Other road users	Percentage of all deaths
0-14	1	14	2	33%
15-19	29	41	2	52%
20-24	50	23	8	50%
25-29	24	10	3	47%
30-39	45	8	4	43%
40-49	37	8	6	38%
50-59	25	4	7	31%
60+	8	2	9	8%
Unknown	0	0	0	0%
Total	219	110	41	35%

This table shows the deaths resulting from crashes with alcohol/drug-affected drivers. In addition, between 2009 and 2011 there were 32 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 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	%	Number	%	Number	%	Number	%
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	101	23%	1147	14%	122	24%	1903	16%
2000	98	26%	1071	14%	109	24%	1738	16%
2001	103	26%	1117	13%	117	26%	1876	15%
2002	96	26%	1308	13%	110	27%	2015	14%
2003	125	31%	1249	12%	142	31%	1982	14%
2004	115	31%	1258	12%	133	31%	1923	14%
2005	100	29%	1352	13%	115	28%	2024	14%
2006	100	29%	1585	14%	110	28%	2404	16%
2007	119	32%	1621	14%	130	31%	2408	15%
2008	105	32%	1637	14%	121	33%	2381	16%
2009	115	34%	1540	14%	140	37%	2347	16%
2010	123	37%	1414	13%	144	38%	2119	15%
2011	77	30%	1330	14%	85	30%	1901	15%

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.

Alcohol/drug affected drivers involved in fatal crashes

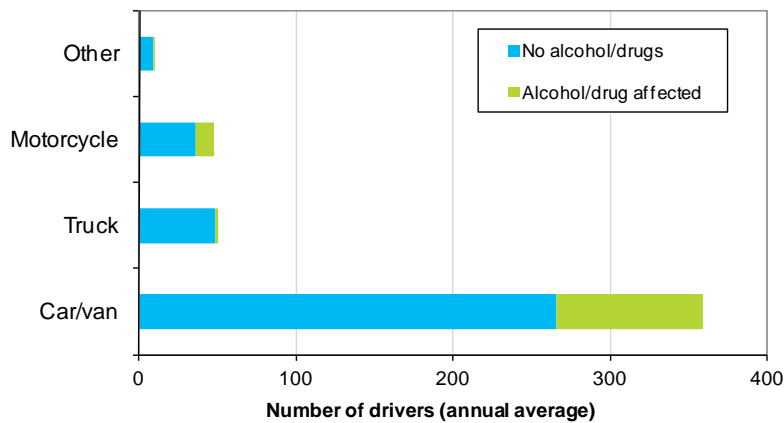
Year	Drivers affected by alcohol/drugs for selected groups									
	15–19 years only		20–24 years only		All males		All females		Total	
	Number	%	Number	%	Number	%	Number	%	Number	%
1991	39	34%	74	43%	203	32%	32	18%	240	29%
1992	42	43%	65	41%	213	33%	21	13%	236	29%
1993	35	37%	57	40%	178	29%	15	12%	196	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	33%	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%
2008	16	25%	30	43%	94	26%	16	14%	110	23%
2009	22	39%	23	36%	93	24%	24	19%	117	23%
2010	22	36%	32	47%	105	27%	18	16%	124	25%
2011	13	41%	20	37%	70	23%	8	10%	78	20%

Note: This table includes drivers of all types of motorised vehicles, including motorcycles. For example, in 2011 23 percent of all male drivers involved in fatal crashes were affected by alcohol/drugs, compared to 10 percent of female drivers.

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

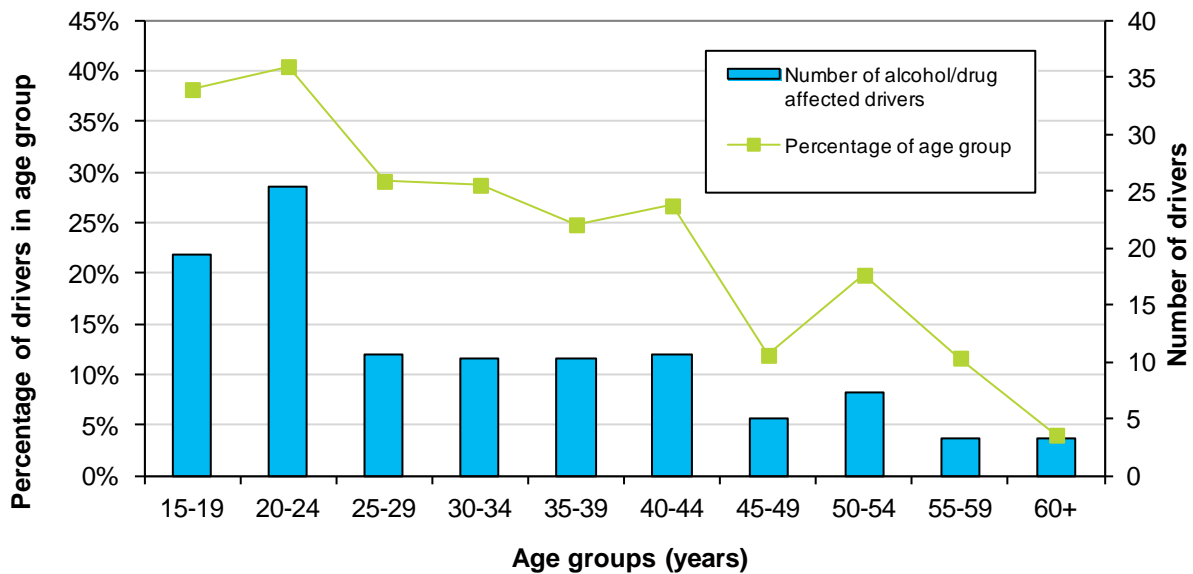
Drivers involved in fatal crashes

Drivers involved in fatal crashes by vehicle type (2009–2011)



From 2009 to 2011, 26 percent of car and van drivers and 25 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 crashes affected by alcohol or drugs involving bus or taxi drivers.

Alcohol/drug affected drivers involved in fatal crashes by age group (annual average 2009–2011)



Drivers affected by alcohol/drugs (2009–2011)						
Age	Males		Females		Total	
	Number	%	Number	%	Number	%
15-19	50	42%	8	24%	58	38%
20-24	61	44%	15	30%	76	40%
25-29	28	35%	4	13%	32	29%
30-34	27	30%	4	24%	31	29%
35-39	26	25%	4	19%	31	25%
40-44	28	29%	4	17%	32	27%
45-49	14	13%	1	5%	15	12%
50-54	18	21%	4	16%	22	20%
55-59	7	11%	3	13%	10	12%
60+	7	4%	3	4%	10	4%
Total	268	25%	50	16%	321	23%

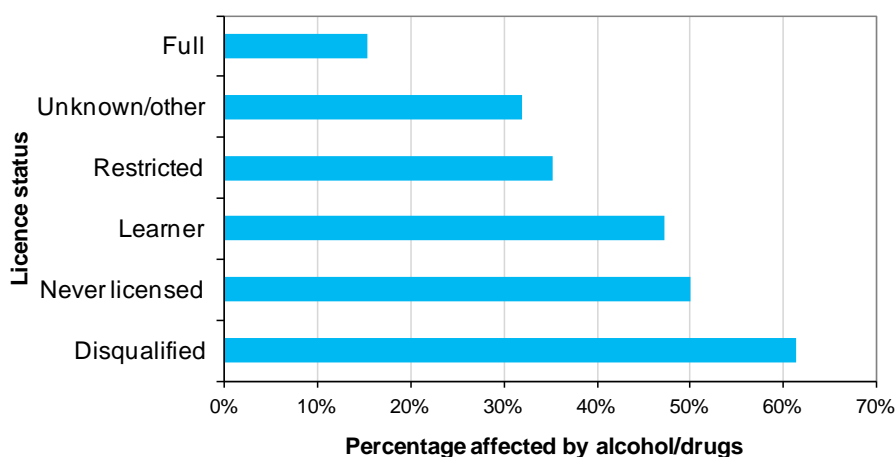
Note: Rows and columns do not add up to the totals because the age or sex of some drivers was not recorded.

Of all drivers involved in fatal crashes, the 20-24 age group is the most likely to be affected by alcohol/drugs. For drivers aged over 35 years old, alcohol/drugs decrease as a contributing factor in fatal crashes.

Largely a male problem

- Of the alcohol/drug-affected drivers in fatal crashes, 84 percent were male.
- Only 16 percent of female drivers in fatal crashes were affected by alcohol/drugs compared with 25 percent of male drivers.
- There were, on average, 89 male drivers and 17 female drivers affected by alcohol/drugs in fatal crashes each year between 2009 and 2011.
- 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, 30 percent of the women and 49 percent of the men were affected by alcohol/drugs.

Drivers in fatal crashes: percentage of each licence status affected by drugs/alcohol (2009–2011)

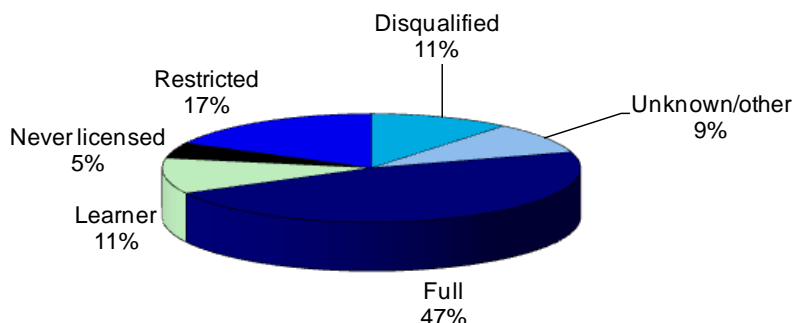


Disqualified and never licensed drivers in fatal crashes are much more likely to be affected by alcohol/drugs (61 percent of disqualified, 50 percent of never licensed) than drivers with a full licence (15 percent).

Disqualified drivers comprise 11 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, which are associated with more risky driving behaviour overall.

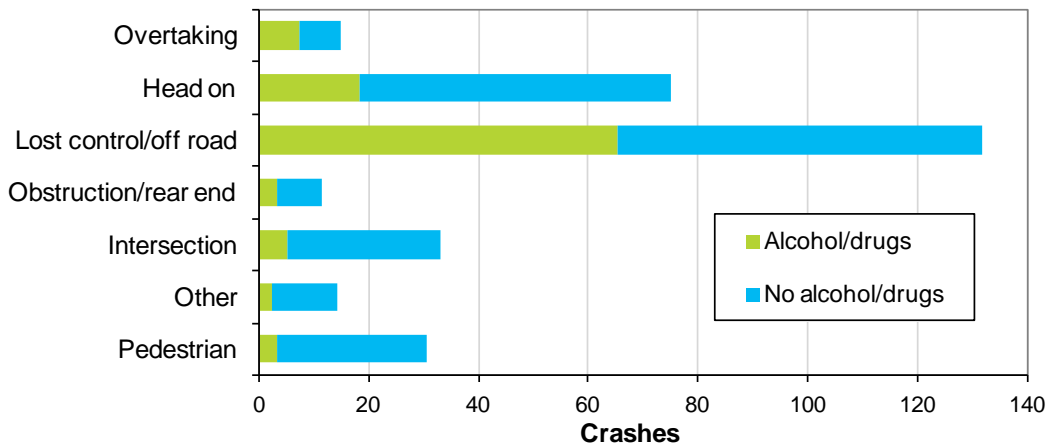
Licence status of drivers affected by alcohol/drugs in fatal crashes (2009–2011)



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

Types of crash

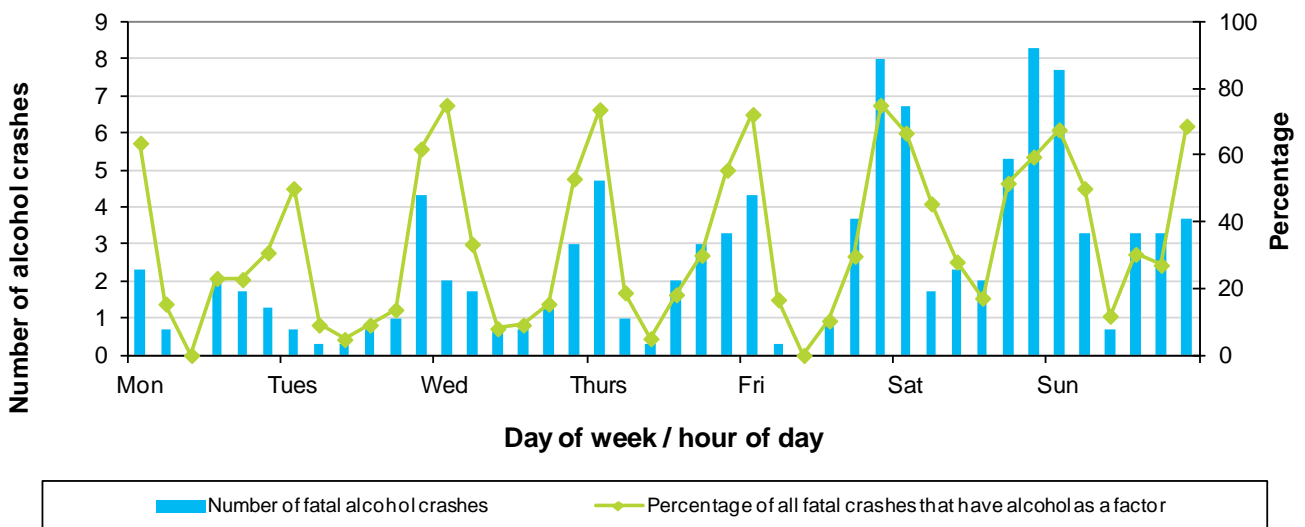
Types of fatal crashes with driver alcohol/drugs as a factor (annual average 2009–2011)



Loss of control and head-on crashes are the most common types of fatal crash for drivers affected by alcohol/drugs. About 80 percent of the fatal crashes in which alcohol/drugs were 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 2009–2011)



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 (2009–2011)						
Day	Day (0600–1759)		Evening (1800–2159)		Night (2200–0559)	
	Number	%	Number	%	Number	%
Monday	9	13%	5	31%	4	33%
Tuesday	7	10%	8	40%	13	68%
Wednesday	10	14%	5	25%	22	67%
Thursday	10	13%	12	46%	18	69%
Friday	8	11%	19	54%	34	69%
Saturday	19	23%	20	65%	47	64%
Sunday	18	22%	15	63%	11	55%
Total	81	15%	84	49%	149	64%

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, are the most common times for fatal crashes that involve alcohol/drugs as a contributing factor.

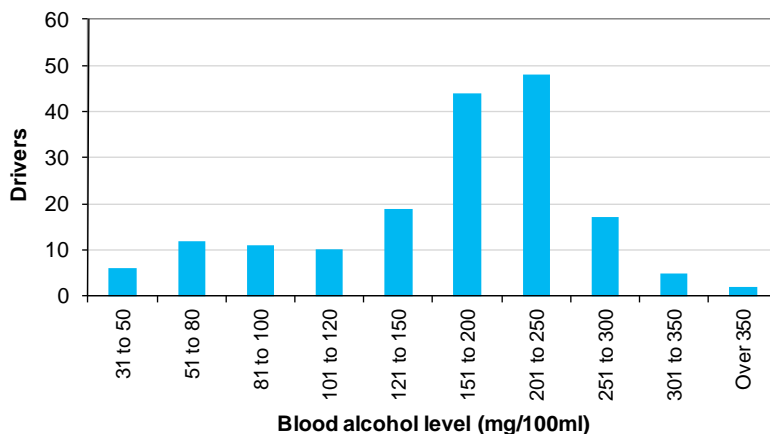
Drivers who die in road crashes

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

Year	Number died (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
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	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	183	138	75%	42	23%	30%	48	26%

* If all drivers who die in crashes were tested, the number with a blood alcohol level over 80mg/100ml 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 80mg/100ml 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 estimates of what the results would be if blood tests had been performed for all drivers who died in crashes.

Blood alcohol levels of drivers who died in crashes (2009–2011)



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 (of 80mg/100ml). Over half of those who tested positive had a blood alcohol level over 150mg/100ml.

Seatbelts

Drivers affected by alcohol are less likely to wear seatbelts than sober drivers. For the car and van drivers who died between 2009 and 2011, 47 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 15 percent for drivers whose blood alcohol level was known to be below the limit (restraint use was not recorded for about 15 percent of the drivers who die, so the level of restraint use may be even lower than indicated).

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 amendments were introduced that lowered the threshold for mandatory licence suspension for 28 days from 160mg/100ml to 130mg/100ml. Additional penalties targeting repeat drink drivers were also introduced: on the second offence at levels beyond the adult legal limits (within the previous 4 years) immediate 28-day licence suspension; on the 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.

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.

Additional Information

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 online at www.transport.govt.nz.

Enquires relating to crash statistics may be directed to the Ministry of Transport, PO Box 3175, Wellington, or by email at 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 facts:

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

Travel survey:

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

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.