Motorcyclists
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Ministry of Transport
TE MANATŪ WAKA
New Zealand Government

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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

Contents

Key facts

In 2015, 54 motorcyclists[1] died and a further 1,181 were injured in road crashes. This was 17 percent of all deaths and 10 percent of all reported injuries on our roads.

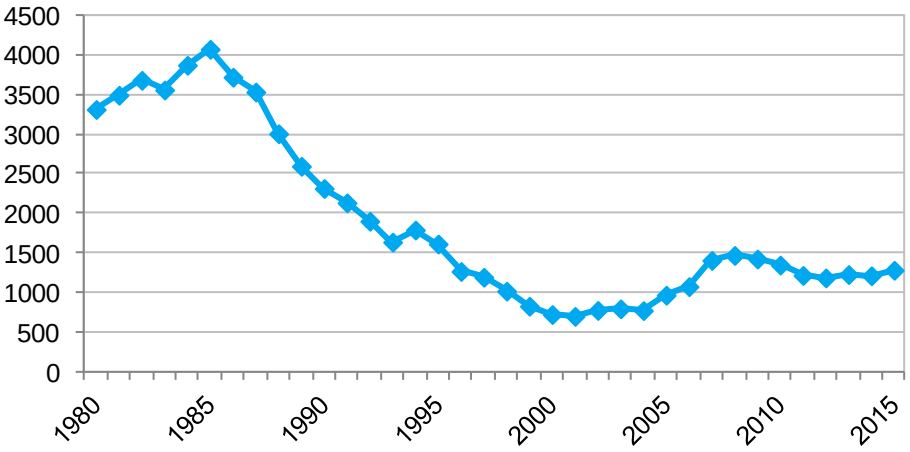
Motorcyclists at increased risk

Motorcyclists face a number of risk factors that do not affect car drivers. The main risk factors are decreased stability and a much lower level of occupant protection than is provided by a car. In addition, a motorcycle is less visible to other road users than a car or a truck. These factors together give motorcycling a higher level of risk per kilometre travelled than other modes of transport.

Several studies have compared the risk of death and injury for a motorcyclist to that of a car driver.

- The New Zealand Household Travel Survey shows that, on average, the risk of being killed or injured in road crashes is 21 times higher for motorcyclists than for car drivers over the same distance travelled (2010–2014 data – this is the most recent travel data available).
- In 98 percent of fatal crashes involving motorcyclists, the motorcyclist or a pillion passenger was among those who died (2011–2015 data).
- A rider without a helmet is three times more likely to suffer severe brain damage than a rider with a helmet in the same type of crash[2].

Figure 1: Motorcyclists Killed and injured (1980–2015)



The number of motorcyclist casualties dropped markedly during the 1990s to a minimum between 2000 and 2004. Numbers increased between 2004 to 2008, but have dropped again since then.

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[1] Motorcycles as used here includes powercycles and mopeds. Additional definitions for fatal, serious and minor injuries and social cost are in Terminology at the end of the fact sheet.

[2] National Highway Traffic Safety Administration (2004).

Motorcyclists now make up 10 percent of all road users injured, compared to 21 percent in the early and mid-1980s. Motorcyclists now make up about 15-17 percent of road deaths, up from a low of 6 percent in 2006.

Time series

Table 1: Deaths and injuries of motorcycle riders and pillion passengers

Year	Deaths				Injuries			
	Riders	Pillion passengers	Total	*% of all road deaths*	Riders	Pillion passengers	Total	*% of all road injuries*
1985	118	14	132	*18%*	3,413	527	3,940	*21%*
1986	107	20	127	*17%*	3,161	432	3,593	*19%*
1987	130	14	144	*18%*	2,945	444	3,389	*18%*
1988	125	21	146	*20%*	2,496	365	2,861	*16%*
1989	122	19	141	*19%*	2,153	303	2,456	*15%*
1990	95	19	114	*16%*	1,936	267	2,203	*12%*
1991	64	14	78	*12%*	1,841	217	2,058	*12%*
1992	75	13	88	*14%*	1,606	210	1,816	*11%*
1993	74	6	80	*13%*	1,402	159	1,561	*10%*
1994	61	11	72	*12%*	1,542	179	1,721	*10%*
1995	66	12	78	*13%*	1,379	160	1,539	*9%*
1996	42	6	48	*9%*	1,112	111	1,223	*8%*
1997	52	4	56	*10%*	1,039	103	1,142	*9%*
1998	47	7	54	*11%*	862	107	969	*8%*
1999	39	3	42	*8%*	714	77	791	*7%*
2000	29	2	31	*7%*	646	51	697	*6%*
2001	33	1	34	*7%*	612	59	671	*5%*
2002	28	2	30	*7%*	702	48	750	*5%*
2003	27	1	28	*6%*	716	56	772	*5%*
2004	33	2	35	*8%*	686	57	743	*5%*
2005	35	3	38	*9%*	862	72	934	*6%*
2006	36	3	39	*10%*	969	72	1041	*7%*
2007	37	4	41	*10%*	1267	102	1369	*8%*
2008	48	3	51	*14%*	1338	84	1422	*9%*
2009	46	2	48	*13%*	1293	87	1380	*9%*
2010	47	3	50	*13%*	1214	88	1302	*9%*
2011	33	0	33	*12%*	1131	57	1188	*9%*
2012	48	2	50	*16%*	1089	51	1140	*9%*
2013	38	1	39	*15%*	1118	75	1193	*10%*
2014	42	1	43	*15%*	1124	50	1174	*10%*
2015	50	4	54	*17%*	1181	51	1232	*10%*

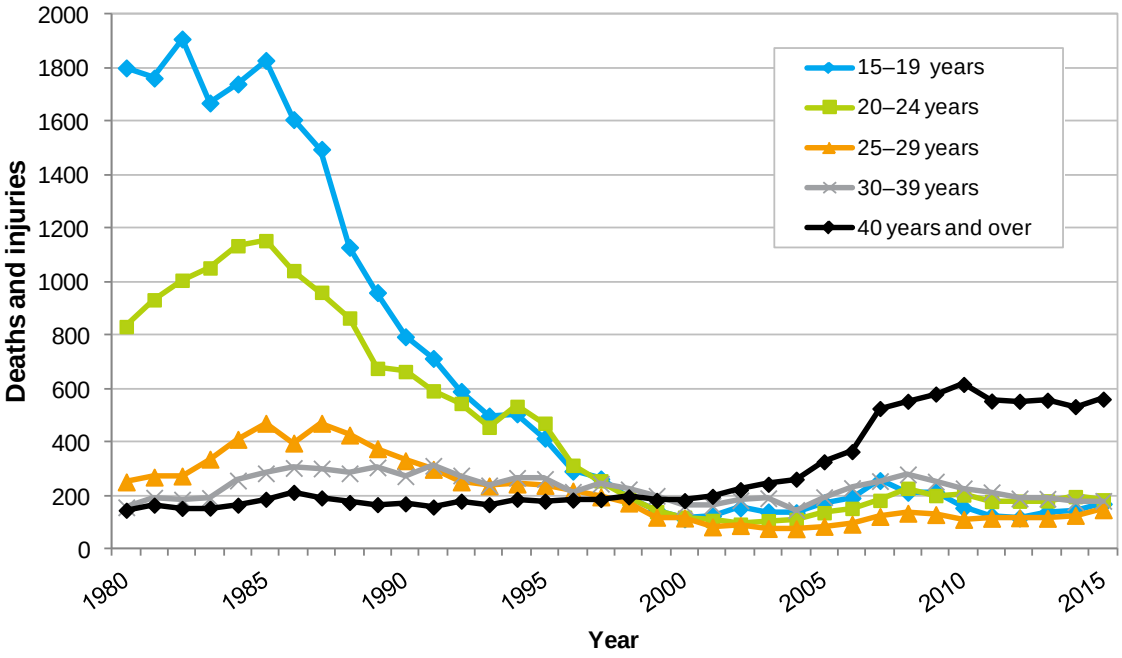
Table 2: Motorcyclist deaths and injuries, selected age groups

Year	15–19 years		20–24 years		25–29 years		30–39 years		40 years and over	
	Deaths	Injuries	Deaths	Injuries	Deaths	Injuries	Deaths	Injuries	Deaths	Injuries
1985	41	1,786	48	1,106	21	451	13	272	9	179
1986	39	1,567	51	991	15	383	14	291	4	210
1987	48	1,447	47	914	17	455	23	280	8	185
1988	31	1,098	52	813	27	401	19	266	13	163
1989	41	919	38	639	22	355	21	286	11	157
1990	26	769	43	622	17	315	20	254	6	165
1991	21	693	22	571	12	288	11	302	11	148
1992	23	568	29	517	9	244	10	267	15	166
1993	15	484	29	428	18	220	8	232	7	161
1994	7	500	16	519	10	235	18	250	16	172
1995	12	404	21	451	14	226	16	248	9	172
1996	16	277	11	304	7	212	4	212	8	177
1997	8	256	12	245	11	186	12	234	9	178
1998	3	188	14	178	14	160	9	216	12	185
1999	3	145	4	138	7	114	16	185	10	174
2000	3	112	4	117	7	111	8	155	9	174
2001	6	119	4	104	4	81	5	159	14	184
2002	4	152	4	91	4	86	10	174	8	216
2003	3	138	1	107	6	73	8	184	10	234
2004	4	134	5	108	2	76	5	143	18	245
2005	6	169	3	135	3	84	7	189	15	313
2006	3	190	5	149	2	93	16	214	13	353
2007	2	256	5	179	1	123	15	241	17	510
2008	7	207	6	223	6	130	10	271	21	533
2009	3	212	3	199	7	124	16	238	19	562
2010	3	153	9	195	3	110	17	212	17	600
2011	0	126	4	176	0	117	9	205	20	535
2012	1	117	4	177	3	116	10	181	32	522
2013	0	141	6	176	2	115	5	185	26	532
2014	2	145	5	193	6	122	7	170	23	511
2015	6	165	7	179	8	141	7	175	26	536

Note: columns do not necessarily add up to the totals, due to unknown ages for some riders.

As shown in the graph below, the drop in motorcyclist deaths and injuries during the 1990s was particularly marked among the young, while the recent increase has occurred in the over 40s age group.

Figure 2: Motorcyclist deaths and injuries by age group



Motorcycle size

The proportion of crashes that result in death is higher for large motorcycles than for small motorcycles — riders of large (500cc or bigger) motorcycles make up 43 percent of all motorcycle casualties but 63 percent of deaths. This is, at least partly, a result of riding patterns. Small motorcycles and scooters tend to be used for 'around-town' riding, where speeds are low, whereas large bikes spend a much greater proportion of time on the open road and travelling at higher speeds[3]. For bikes 500cc or bigger, over half (56 percent) of all reported injuries are on the open road. This compares to only 17 percent for small bikes with an engine size under 250cc, and 39 percent for bikes with engine sizes of 250–499cc.

[3] For riding patterns see the Ministry's fact sheet here www.transport.govt.nz/research/Pages/LatestResults.aspx

Who was at fault?

Figure 3: Motorcyclist fault in crashes (2011–2015)

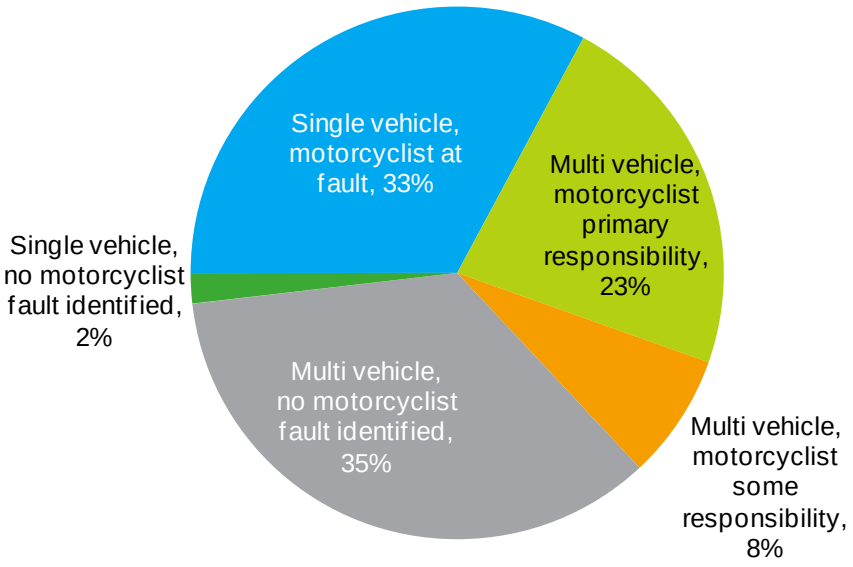
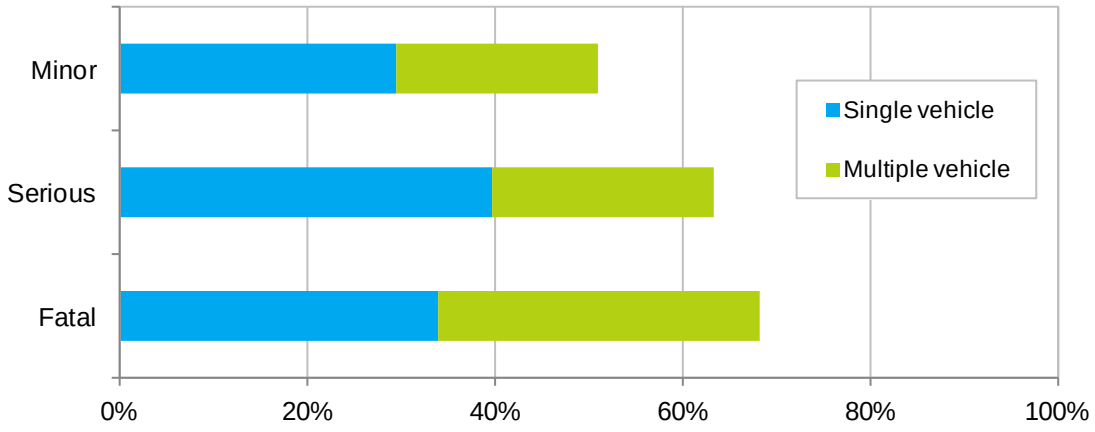


Figure 4: Percentage of motorcycle crashes in which a motorcyclist had the primary responsibility for the crash (2011–2016)

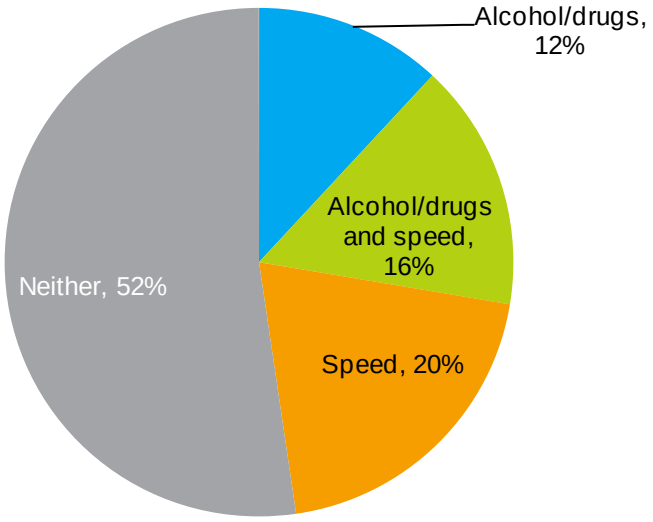


Percentage of crashes where motorcyclist has the primary responsibility for the crash

A motorcyclist has the primary responsibility for 55 percent of fatal and injury crashes involving motorcycles. For fatal and serious injury crashes, the motorcyclist is more likely to have the primary responsibility[4] for the crash. The motorcycle rider has the primary responsibility for 68 percent of fatal motorcycle crashes, but the comparable figure for minor injury crashes is 51 percent.

In about two-thirds (65 percent) of the crashes that involve a collision with another vehicle, it is the other vehicle that has the primary responsibility for the crash.

Figure 5: Motorcyclist alcohol/drugs and speed in fatal crashes (2011–2015)



Of motorcyclists involved in fatal crashes, 28 percent are affected by alcohol/drugs; 36 percent are travelling too fast for the conditions; and 48 percent are travelling too fast for the conditions and/or are affected by alcohol/drugs.

[4] Primary responsibility (fault) for a crash is based on the crash movements and crash cause factors assigned in the Crash Analysis System. It is not based on legal liability or court conviction. Fault/responsibility here only considers driver and rider factors contributing to the crash. There may also be road or system factors that contributed to the crash.

Types of crash

Table 3: Type of crash by speed limit area and crash severity (2011–2015)

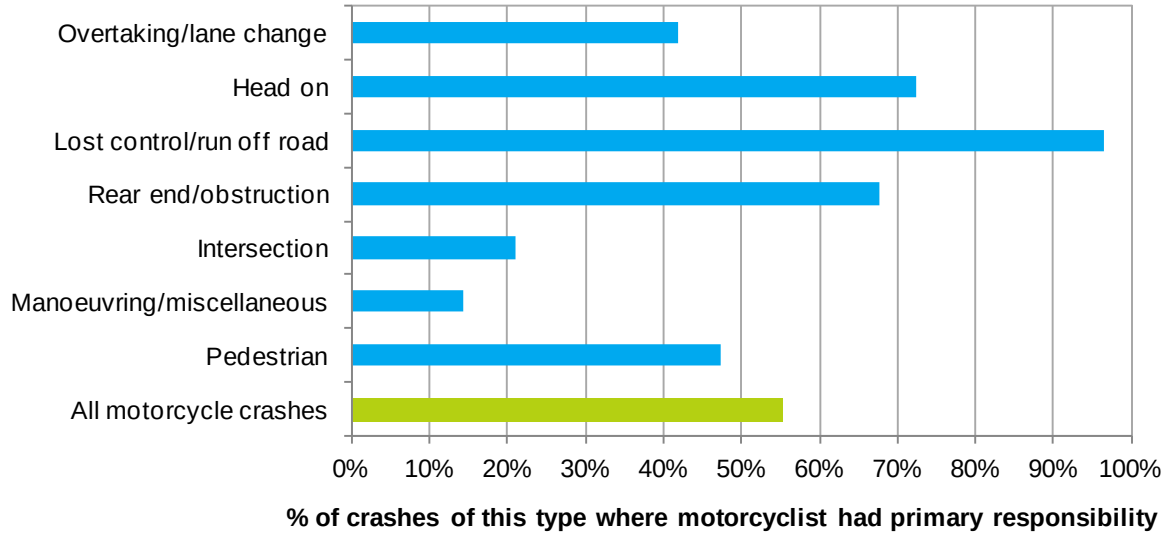
Movement type	Speed limit area				All motorcycle crashes			
	Open road		Urban		Fatal		Injury	
	Fatal	Injury	Fatal	Injury	Number	%	Number	%
Overtaking/lane change	10	188	1	190	11	*5%*	378	*7%*
Head on	54	149	6	92	60	*27%*	241	*4%*
Lost control/run off road	59	1132	20	788	79	*36%*	1920	*34%*
Rear end/obstruction	6	244	3	357	9	*4%*	601	*11%*
Intersection	25	276	26	1756	51	*23%*	2032	*36%*
Manoeuvring/miscellaneous	6	59	2	390	8	*4%*	449	*8%*
Pedestrian	1	2	0	71	1	*0%*	73	*1%*
Total	**161**	**2050**	**58**	**3644**	**219**	***100%***	**5694**	***100%***

The rider losing control of the vehicle is a major feature in motorcycle crashes. As well as those shown in the 'Lost control/run off road' category in the table, 34 percent of head-on crashes result from a rider losing control of the motorcycle.

Table 4: Specific crash movements that account for more than 8 percent of all reported motorcycle crashes

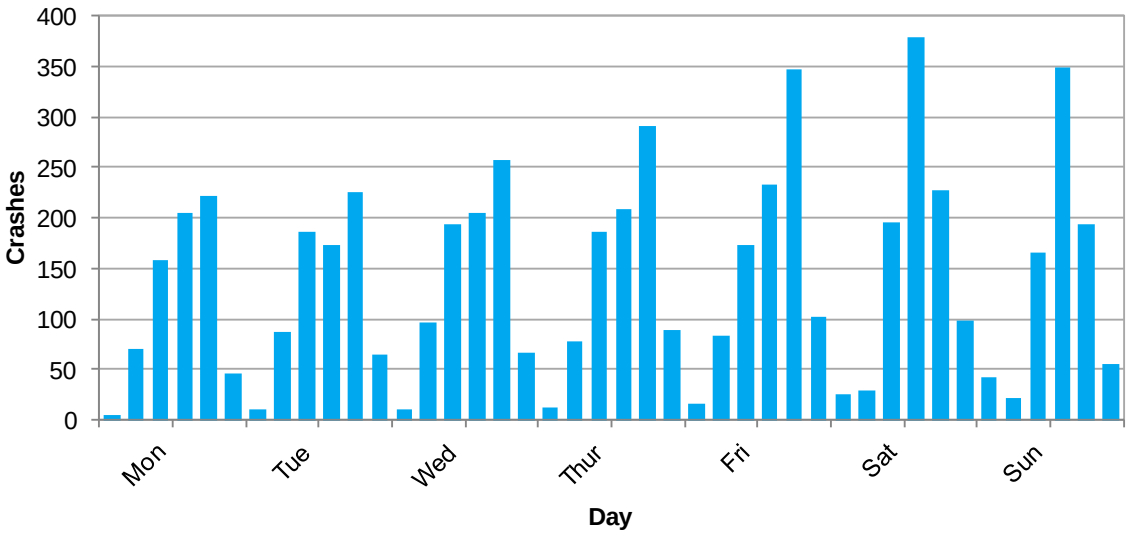
	Right turn against	12%	In this type of crash it is most common that the other vehicle turns across the path of the motorcyclist. The motorcyclist has the primary responsibility in only 6 percent of these crashes.
	Lost control turning right	13%	These are single-vehicle crashes in which the motorcycle rider loses control on a right-hand bend. Loss of control on left-hand bends accounts for an additional 9 percent of crashes and loss of control on the straight accounts for a further 10 percent.
	Crossing vehicle turning	9%	In this type of crash it is most common for another vehicle to pull out and turn across the path of the motorcyclist. The motorcyclist has the primary responsibility in only 10 percent of these crashes.

Figure 6: Percentage of motorcycle crashes where the motorcyclist had the primary responsibility for the crash (2011–2015)



When do crashes happen?

Figure 7: Fatal and injury motorcycle crashes (2011–2015)



Note: Crashes in 4 hour blocks beginning 00:00 Monday.

The peak times for motorcycle crashes are between 12 noon and 4pm on Saturdays and Sundays, and between 4pm and 8pm on weekdays, particularly later in the week.

Where do crashes happen?

Table 5: Motorcycle crashes on urban roads (speed limit of 70km/h or less) and open roads (2011–2015)

Type of road	Fatal crashes	Injury crashes	Total crashes
Urban	58	3,644	3,702
Open road	161	2,050	2,211
Total	219	5,694	5,913

(Note: Rows do not always add to the total as the speed limit is not always recorded)

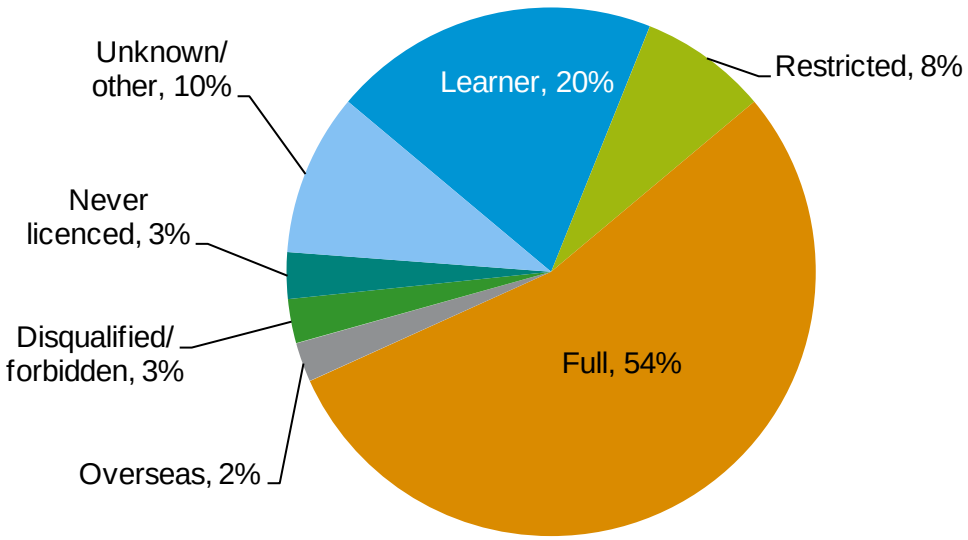
Nearly two-thirds (64 percent) of all motorcycle injury crashes occur on **urban** (speed limit of 70km/h or less) roads, but nearly three quarters (74 percent) of fatal crashes are on the **open** road.

Most casualties are male

82 percent of all injured motorcyclists, and 91 percent of motorcyclist deaths, are males.

Licence status of motorcyclists in crashes

Figure 8: Licence status of riders in crashes (2011–2015)



Note: The crash data does not distinguish whether or not a moped rider held a motorcycle licence.

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.

Crash fault/responsibility: Primary responsibility (at-fault) for a crash is based on the crash movements and crash cause factors assigned in the Crash Analysis System. It is not based on legal liability or court conviction. Fault/responsibility here only considers driver and rider factors contributing to the crash. There may also be road or system factors that contributed to the crash.

Reference:

National Highway Traffic Safety Administration (NHTSA) Motorcycle Helmet Use Laws fact sheet. April 2004. www.nhtsa.dot.gov/people/injury/New-fact-sheet03/MotorcycleHelmet.pdf