U.S. Department of Transportation
National Highway Traffic Safety Administration

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TRAFFIC SAFETY FACTS
2012 Data

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Motorcycles

In 2012, 4,957 motorcyclists were killed in motor vehicle traffic crashes—an increase of 7 percent from the 4,630 motorcyclists killed in 2011. There were 93,000 motorcyclists injured during 2012, a 15-percent increase from 81,000 in 2011.

The following definitions apply to terms used throughout this fact sheet: The motorcycle rider is the person operating the motorcycle; the passenger is a person seated on, but not operating, the motorcycle; the motorcyclist is a general term referring to either the rider or passenger. NHTSA publications prior to 2007 may not reflect this terminology. The following vehicles are defined as motorcycles: mopeds, two- or three-wheeled motorcycles, off-road motorcycles, scooters, mini bikes, and pocket bikes. In 2012, two-wheeled motorcycles accounted for 93 percent of all motorcycles in fatal crashes.

In 2012, 4,957 motorcyclists were killed—a 7-percent increase from the 4,630 motorcyclists killed in 2011.

Table 1
Motorcyclist Fatalities and Injuries, and Fatality and Injury Rates, 2003–2012

Year	Fatalities	Registered Vehicles	Fatality Rate*	Vehicle Miles Traveled (millions)	Fatality Rate**
2003	3,714	5,370,035	69.16	9,576	38.78
2004	4,028	5,767,934	69.83	10,122	39.79
2005	4,576	6,227,146	73.48	10,454	43.77
2006	4,837	6,678,958	72.42	12,049	40.14
2007	5,174	7,138,476	72.48	21,396	24.18
2008	5,312	7,752,926	68.52	20,811	25.52
2009	4,469	7,929,724	56.36	20,822	21.46
2010	4,518	8,009,503	56.41	18,513	24.40
2011	4,630	8,437,502	54.87	18,542	24.97
2012	4,957	8,454,939	58.63	21,298	23.27
Year	**Injured**	**Registered Vehicles**	**Injury Rate***	**Vehicle Miles Traveled (millions)**	**Injury Rate****
2003	67,000	5,370,035	1,250	9,576	701
2004	76,000	5,767,934	1,324	10,222	755
2005	87,000	6,227,146	1,402	10,454	835
2006	88,000	6,678,958	1,312	12,049	727
2007	103,000	7,138,476	1,443	21,396	481
2008	96,000	7,752,926	1,238	20,811	461
2009	90,000	7,929,724	1,130	20,822	430
2010	82,000	8,009,503	1,024	18,513	443
2011	81,000	8,437,502	965	18,542	439
2012	93,000	8,454,939	1,099	21,298	436

*Rate per 100,000 registered vehicles **Rate per 100 million vehicle miles traveled
Source: Vehicle miles traveled and registered vehicles—Federal Highway Administration
Traffic deaths—Fatality Analysis Reporting System (FARS),
NHTSA traffic injuries—General Estimates System (GES), NHTSA

Note: In 2011, the Federal Highway Administration implemented an enhanced methodology for estimating registered vehicles and vehicle miles traveled by vehicle type. These revisions were applied to data after 2006. In some cases the changes were significant and should be taken into account when comparing registered vehicle counts and/or vehicle miles traveled for 2006 and earlier years with the numbers for 2007 and later years.

Per vehicle mile traveled, motorcyclists were more than 26 times more likely than passenger car occupants to die in a traffic crash.

In 2012, motorcyclists accounted for 15 percent of all traffic fatalities, 18 percent of all occupant (driver and passenger) fatalities, and 4 percent of all occupants injured. Of the 4,957 motorcyclists killed in traffic crashes, 93 percent (4,625) were riders and 7 percent (332) were passengers.

Motorcycles made up 3 percent of all registered vehicles in the United States in 2012 and accounted for only 0.7 percent of all vehicle miles traveled. Per vehicle mile traveled in 2012, motorcyclists were more than 26 times likely than passenger car occupants to die in motor vehicle traffic crashes and 5 times more likely to be injured (Table 2).

Per registered vehicle, the fatality rate for motorcyclists in 2012 was 6 times the fatality rate for passenger car occupants. The injury rate for motorcyclists was about the same as the injury rate for passenger car occupants.

Table 2
Occupant Fatality Rates by Vehicle Type, 2012

Fatality Rate		Motorcycles	Passenger Cars	Light Trucks
2012	Per 100,000 Registered Vehicles	58.63	9.66	7.92
	Per 100 Million Vehicle Miles Traveled	23.27	0.89	0.73

Motorcycle Involvement in Crashes

In 2012, 2,624 of all motorcycles (52%) involved in fatal crashes collided with another type of motor vehicle in transport. In two-vehicle crashes, 75 percent of the motorcycles involved in motor vehicle traffic crashes collided with the vehicles in the front of them. Only 7 percent were struck in the rear.

Motorcycles are more likely to be involved in fatal collisions with fixed objects than are other vehicles. In 2012, 22 percent of the motorcycles involved in fatal crashes collided with fixed objects, compared to 18 percent for passenger cars, 14 percent for light trucks, and 4 percent for large trucks.

In 2012, there were 2,317 two-vehicle fatal crashes involving a motorcycle and another type of vehicle. In 41 percent (953) of these crashes, the other vehicles were turning left while the motorcycles were going straight, passing, or overtaking other vehicles. Both vehicles were going straight in 524 crashes (23%).

NHTSA considers a crash to be speeding-related if the driver was charged with a speeding-related offense or if an officer indicated that racing, driving too fast for conditions, or exceeding the posted speed limit was a contributing factor in the crash. In 2012, 34 percent of all motorcycle riders involved in fatal crashes were speeding, compared to 22 percent for passenger car drivers, 18 percent for light-truck drivers, and 8 percent for large-truck drivers.

Table 3
Motorcyclist Fatalities in Motor Vehicle Traffic Crashes, by Age, Year, and Day of the Week, 2003 and 2012

Age	Weekday (6 a.m. Monday to 5:59 p.m. Friday)		Weekend (6 p.m. Friday to 5:59 a.m. Monday)		Total	
	Number	Percent	Number	Percent	Number	Percent
2003						
<30	586	50	587	50	1,179	100
30–39	367	44	470	56	839	100
40+	802	47	882	52	1,694	100
Total*	1,755	47	1,941	52	3,714	100
2012						
<30	716	56	564	44	1,283	100
30–39	472	52	430	47	906	100
40+	1,422	51	1,340	48	2,767	100
Total*	2,610	53	2,335	47	4,957	100

*Totals include unknown age and unknown time of day.

From 2003 to 2012, motorcyclist fatalities increased by 33 percent (Table 3). Among those increases, the 40-and-older age group made up 46 percent of motorcyclists killed in 2003 as compared to 56 percent in 2012. Within the 40 and older age group, fatalities increased by 63 percent over a 10-year period. In 2003, the average age of motorcycle riders killed in motor vehicle traffic crashes was 38 whereas in 2012 the average age was 43.

Table 4
Motorcycle Rider (Operator) Fatalities by Engine Size (cc), 2003 and 2012

Year	Engine Displacement										Total	
	Up to 500		501–1,000		1,001–1,500		1,501 & Higher		Unknown			
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
2003	196	6	1,445	42	1,350	39	94	3	342	10	3,427	100
2012	251	5	1,756	38	1,342	29	747	16	529	11	4,625	100

Forty-five percent of motorcycle riders were killed in motor vehicle traffic crashes while riding motorcycles with engine sizes of 1,001 cubic centimeters (cc) or higher in 2012, a 45-percent increase in fatalities from 2003 to 2012. Rider fatalities on motorcycles with engine sizes of 1,000 cc or less showed an increase of 22 percent during the same time period. (Table 4).

Licensing

Twenty-four percent of motorcycle riders involved in fatal crashes in 2012 were riding their vehicles without valid motorcycle licenses at the time of the collisions, while only 12 percent of drivers of passenger vehicles in fatal crashes did not have valid licenses. A valid motorcycle license includes a rider having a valid driver license (Non-CDL License Status) with a motorcycle endorsement or a motorcycle-only license.

Motorcycle riders involved in fatal traffic crashes were 1.3 times more likely than passenger vehicle drivers to have previous license suspension or revocations (18% and 14%, respectively).

Twenty-four percent of motorcycle riders involved in fatal crashes in 2012 were riding their vehicles without valid motorcycle licenses.

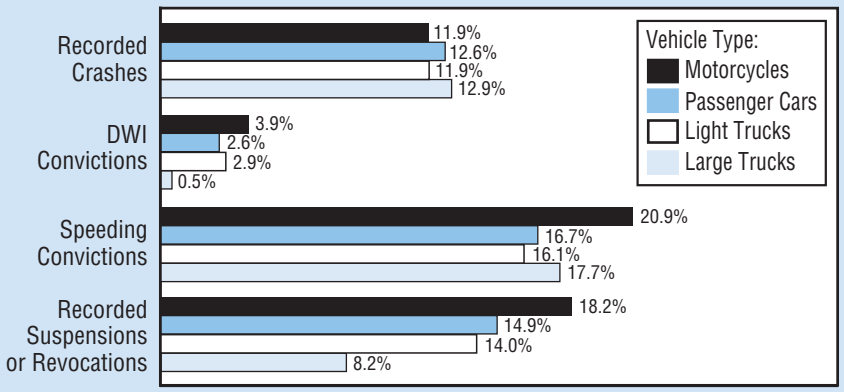
In 2012, a higher percentage of motorcycle riders in fatal crashes had BAC levels of .08 g/dL or higher than any other type of driver.

Previous Driving Records

In Figure 1, motorcycle riders were shown to have the highest percentage of drivers with previous driving convictions (DWI, speeding, and revocation) as compared to other vehicle drivers.

Figure 1

Previous Driving Records of Drivers Involved in Fatal Traffic Crashes, by Type of Vehicle, 2012



Note: Excluding all drivers with unknown previous records.

Forty-three percent of motorcycle riders who died in single-vehicle crashes in 2012 had BAC levels of .08 g/dL or higher.

Alcohol

In fatal crashes in 2012, a higher percentage of motorcycle riders had blood alcohol concentrations (BACs) of .08 grams per deciliter (g/dL) or higher than any other type of motor vehicle driver. The percentages for alcohol-impaired drivers involved in fatal crashes were 27 percent for motorcycles, 23 percent for passenger cars, 22 percent for light trucks, and 2 percent for large trucks.

In 2012, there were 1,335 (29%) fatally injured motorcycle riders who had BACs of .08 g/dL or higher. An additional 360 (8%) had lower alcohol levels (BACs of .01 to .07 g/dL).

The highest percentage of fatally injured motorcycle riders with BAC of .08 g/dL or higher was the 40-44 age group (37%) , followed by the 45-49 age group (36%) and 35-39 age group (35%).

Forty-three percent of the 2,030 motorcycle riders who died in single-vehicle crashes in 2012 had BACs of .08 g/dL or higher. Sixty-four percent of those killed in single-vehicle crashes on weekend nights had BACs of .08 g/dL or higher.

Table 5

Motorcycle Riders Killed With BACs of .08 or Higher, by Crash Type and Time of Day, 2003 and 2012

Crash Type and Time of Day		2003			2012		
		Total Motorcycle Riders Killed	BAC=.08+		Total Motorcycle Riders Killed	BAC=.08+	
			Number	Percent		Number	Percent
All Crashes	Total*	3,427	1,026	30	4,625	1,335	29
	Weekday	1,637	377	23	2,468	548	22
	Weekend	1,773	636	36	2,145	782	36
Single-Vehicle	Total*	1,521	669	44	2,030	874	43
	Weekday	649	245	38	926	346	37
	Weekend	855	411	48	1,092	523	48
Multi-Vehicle	Total*	1,906	357	19	2,595	461	18
	Weekday	988	132	13	1,542	202	13
	Weekend	918	225	25	1,053	259	25
Time of Day	Daytime	1,721	210	12	2,443	345	14
	Nighttime	1,670	791	47	2,145	970	45

*Includes riders involved in fatal crashes when time of day was unknown.
Daytime - 6 a.m. to 5:59 p.m.
Nighttime - 6 p.m. to 5:59 a.m.

Motorcycle riders killed in traffic crashes at night were over 3 times more likely to have BACs of .08 g/dL or higher than those killed during the day.

Motorcycle riders killed in traffic crashes at night were over 3 times more likely to have BACs of .08 g/dL or higher than those killed during the day (45% and 14%, respectively).

The reported helmet use rate for motorcycle riders killed in traffic crashes was 45 percent for those with BACs of .08 g/dL or higher as compared to 66 percent for those with no alcohol (BAC=.00 g/dL).

Among drivers and motorcycle riders, drinking and driving has always been a concern. In 2012, there were 4,625 motorcycle riders killed in motor vehicle traffic crashes. Twenty-nine percent of these riders were alcohol-impaired (BAC of .08 or higher). As seen in Table 6, the proportion of motorcycle riders killed who were alcohol-impaired ranged from a high of 63 percent (Rhode Island) to a low of 3 percent (Utah).

Table 6

Motorcycle Rider Fatalities in Motor Vehicle Traffic Crashes by State and Rider's BAC, 2012

State	Total Motorcycle Riders Killed	Percent of Motorcycle Riders Killed, by Their BAC	
		BAC=.08+	BAC=.01+
Alabama	93	31	36
Alaska	9	31	31
Arizona	130	24	29
Arkansas	68	25	34
California	415	23	29
Colorado	75	29	39
Connecticut	38	25	37
Delaware	15	40	48
Dist of Columbia	4	18	28
Florida	456	27	36
Georgia	130	26	33
Hawaii	37	33	37
Idaho	21	28	30
Illinois	141	35	44
Indiana	136	34	40
Iowa	55	30	39
Kansas	46	27	31
Kentucky	95	24	27
Louisiana	72	29	34
Maine	23	43	52
Maryland	72	30	39
Massachusetts	47	29	42
Michigan	125	25	34
Minnesota	46	22	30
Mississippi	37	31	38
Missouri	95	32	43
Montana	29	29	37
Nebraska	19	33	41
Nevada	41	33	34
New Hampshire	25	29	37
New Jersey	71	23	32
New Mexico	59	19	23
New York	160	22	34
North Carolina	190	30	40
North Dakota	16	32	51
Ohio	146	33	44
Oklahoma	75	33	39
Oregon	48	17	24
Pennsylvania	200	30	38
Rhode Island	8	63	63
South Carolina	137	41	49
South Dakota	20	20	35
Tennessee	129	26	36
Texas	428	36	45
Utah	27	3	8
Vermont	11	28	28
Virginia	82	27	34
Washington	80	34	40
West Virginia	28	26	34
Wisconsin	103	30	34
Wyoming	12	43	44
National	**4,625**	**29**	**37**
Puerto Rico	47	33	44

Helmet Use and Effectiveness

NHTSA estimates that helmets saved the lives of 1,699 motorcyclists in 2012. If all motorcyclists had worn helmets, an additional 781 lives could have been saved.

Helmets are estimated to be 37-percent effective in preventing fatal injuries to motorcycle riders and 41 percent for motorcycle passengers. In other words, for every 100 motorcycle riders killed in crashes while not wearing helmets, 37 of them could have been saved had all 100 worn helmets.

According to NHTSA's National Occupant Protection Use Survey, a nationally representative observational survey of motorcycle helmet, seat belt, and child safety seat use, use of DOT-compliant helmets in 2012 stood at 60 percent, a decrease from 66 percent in 2011.

Reported helmet use rates for fatally injured motorcyclists in 2012 were 59 percent for riders and 48 percent for passengers, compared with 60 percent and 49 percent, respectively, in 2011. Conversely, 42 percent of the 4,957 motorcyclists killed in motor vehicle traffic crashes were not helmeted. Table 7 shows that these percentages ranged from a high of 84 percent (South Dakota) to a low of 5 percent (Washington, Nebraska, and Louisiana).

All motorcycle helmets sold in the United States are required to meet Federal Motor Vehicle Safety Standard 218, the performance standard which establishes the minimum level of protection for helmets designed for use by motorcyclists.

In 2012, 19 States, the District of Columbia, and Puerto Rico required helmet use by all motorcyclists. Whereas 28 States only required helmet use by a subset of motorcyclists (typically motorcyclists under age 18) and 3 States (Illinois, Iowa, and New Hampshire) do not require helmet use by motorcyclists of any age.

In States without universal helmet laws, 62 percent of motorcyclists killed in 2012 were not wearing helmets, as compared to 9 percent in States with universal helmet laws.

Helmets are estimated to be 37-percent effective in preventing fatal injuries to motorcycle riders.

NHTSA estimates that helmets saved 1,699 motorcyclists' lives in 2012, and that 781 more could have been saved if all motorcyclists had worn helmets.

For more information:

Information on traffic fatalities is available from the National Center for Statistics and Analysis (NCSA), NVS-424, 1200 New Jersey Avenue SE., Washington, DC 20590. NCSA can be contacted at 800-934-8517 or via the following e-mail address: ncsaweb@dot.gov. General information on highway traffic safety can be accessed by Internet users at www.nhtsa.gov/NCSA. To report a safety-related problem or to inquire about motor vehicle safety information, contact the Vehicle Safety Hotline at 888-327-4236.

Other fact sheets available from the *National Center for Statistics and Analysis are Alcohol-Impaired Driving, Bicyclists and Other Cyclists, Children, Large Trucks, Occupant Protection, Older Population, Overview, Passenger Vehicles, Pedestrians, Race and Ethnicity, Rural/Urban Comparisons, School Transportation-Related Crashes, Speeding, State Alcohol Estimates, State Traffic Data*, and *Young Drivers*. Detailed data on motor vehicle traffic crashes are published annually in *Traffic Safety Facts: A Compilation of Motor Vehicle Crash Data from the Fatality Analysis Reporting System and the General Estimates System*. The fact sheets and annual Traffic Safety Facts report can be accessed online at www-nrd.nhtsa.dot.gov/CATS/index.aspx.

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Table 7

Motorcyclist Fatalities, by State and Helmet Use, 2012

State	Total Motorcyclists Killed	Helmeted	Not Helmeted
	Number	Percent	Percent
Alabama	97	90	10
Alaska	9	44	56
Arizona	141	50	50
Arkansas	71	36	64
California	435	93	7
Colorado	79	31	69
Connecticut	40	32	68
Delaware	17	76	24
Dist of Columbia	4	75	25
Florida	491	47	53
Georgia	134	94	6
Hawaii	41	29	71
Idaho	22	55	45
Illinois	148	20	80
Indiana	152	21	79
Iowa	59	19	81
Kansas	48	26	74
Kentucky	106	36	64
Louisiana	78	95	5
Maine	24	42	58
Maryland	77	90	10
Massachusetts	51	93	7
Michigan	138	52	48
Minnesota	55	25	75
Mississippi	39	87	13
Missouri	104	91	9
Montana	30	30	70
Nebraska	22	95	5
Nevada	42	74	26
New Hampshire	29	34	66
New Jersey	77	89	11
New Mexico	64	36	64
New York	170	91	9
North Carolina	198	88	12
North Dakota	16	27	73
Ohio	162	23	77
Oklahoma	84	23	77
Oregon	52	92	8
Pennsylvania	210	50	50
Rhode Island	8	25	75
South Carolina	146	30	70
South Dakota	25	16	84
Tennessee	139	93	7
Texas	452	40	60
Utah	32	65	35
Vermont	11	82	18
Virginia	85	92	8
Washington	83	95	5
West Virginia	31	55	45
Wisconsin	117	24	76
Wyoming	12	17	83
National	**4,957**	**58**	**42**
Puerto Rico	50	32	68

Shading indicates States requiring helmet use for all motorcyclists.