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National Highway Traffic Safety Administration

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TRAFFIC SAFETY FACTS
2010 Data

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Motorcycles

In 2010, 4,502 motorcyclists were killed—a slight increase from the 4,469 motorcyclists killed in 2009. There were 82,000 motorcyclists injured during 2010, a decrease from 90,000 in 2009.

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The following definitions apply to terms used throughout this fact sheet: the motorcycle rider is the individual 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 and/or passenger. NHTSA publications prior to 2007 may not reflect this terminology. The following vehicles are included in the definition of motorcycle: mopeds, two- or three-wheeled motorcycles, off-road motorcycles, scooters, mini bikes, and pocket bikes.

In 2010, two-wheeled motorcycles accounted for 95 percent of motorcycle body types in fatal crashes.

Table 1
Motorcyclists Killed and Injured and Fatality and Injury Rates, 2001-2010

Year	Fatalities	Registered Vehicles	Fatality Rate*	Vehicle Miles Traveled (millions)	Fatality Rate**
2001	3,197	4,903,056	65.20	9,633	33.19
2002	3,270	5,004,156	65.35	9,552	34.23
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	4,502	8,212,267	54.82	18,462	24.39
Year	**Injured**	**Registered Vehicles**	**Injury Rate***	**Vehicle Miles Traveled (millions)**	**Injury Rate****
2001	60,000	4,903,056	1,229	9,633	625
2002	65,000	5,004,156	1,293	9,552	677
2003	67,000	5,370,035	1,250	9,576	701
2004	76,000	5,767,934	1,324	10,122	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	8,212,267	998	18,462	444

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

Per vehicle mile traveled, motorcyclists are about 30 times more likely than passenger car occupants to die in a traffic crash.

In 2010, motorcyclists accounted for 14 percent of total traffic fatalities, 16 percent of all occupant fatalities, and 4 percent of all occupants injured.

Motorcycles made up 3 percent of all registered vehicles in the United States in 2010 and accounted for only 0.6 percent of all vehicle miles traveled. Per vehicle mile traveled in 2010, motorcyclists were about 30 times more likely than passenger car occupants to die in a motor vehicle traffic crash and 5 times more likely to be injured.

Per registered vehicle, the fatality rate for motorcyclists in 2010 was 6 times the fatality rate for passenger car occupants. The injury rate for motorcyclists was 0.9 times the injury rate for passenger car occupants.

Table 2
Occupant Fatality Rates by Vehicle Type, 2001 and 2010

Fatality Rate		Motorcycles	Passenger Cars	Light Trucks
2001	Per 100,000 Registered Vehicles	65.20	15.75	14.90
	Per 100 Million Vehicle Miles Traveled	33.19	1.27	1.20
2010	Per 100,000 Registered Vehicles	54.82	9.19	9.53
	Per 100 Million Vehicle Miles Traveled	24.39	0.83	0.86
Percent Change, 2001–2010	Per 100,000 Registered Vehicles	-15.93	-41.64	-36.07
	Per 100 Million Vehicle Miles Traveled	-26.52	-35.18	-28.99

Motorcycle Involvement in Crashes

In 2010, 2,351 (51%) of all motorcycles involved in fatal crashes collided with another type of motor vehicle in transport. In two-vehicle crashes, 75 percent of the motorcycles involved were struck in the front. Only 6 percent were struck in the rear.

Motorcycles are more likely to be involved in a fatal collision with a fixed object than are other vehicles. In 2010, 24 percent of the motorcycles involved in fatal crashes collided with fixed objects, compared to 18 percent for passenger cars, 13 percent for light trucks, and 4 percent for large trucks.

In 2010, there were 1,999 two-vehicle fatal crashes involving a motorcycle and another type of vehicle. In 39 percent (770) of these crashes the other vehicle was turning left while the motorcycle was going straight, passing, or overtaking another vehicle. Both vehicles were going straight in 446 crashes (22%).

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 2010, 35 percent of all motorcycle riders involved in fatal crashes were speeding, compared to 23 percent for passenger car drivers, 19 percent for light-truck drivers, and 8 percent for large-truck drivers.

Table 3
Motorcylist Fatalities in Motor Vehicle Traffic Crashes, by Age, Year, and Day of the Week, 2001 and 2010

Age	Weekday (6 a.m. Monday to 5:59 p.m. Friday)		Weekend (6 p.m. Friday to 5:59 a.m. Monday)		Unknown		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
2001								
<30	570	50	563	50	3	0	1,136	100
30-39	372	47	422	53	4	1	798	100
40+	598	47	659	52	4	0	1,261	100
Unknown	2	100	0	0	0	0	2	100
Total	1,542	48	1,644	51	11	0	3,197	100
2010								
<30	605	52	559	48	3	0	1,167	100
30-39	401	49	409	50	1	0	811	100
40+	1,248	49	1,271	50	4	0	2,523	100
Unknown	1	100	0	0	0	0	1	100
Total	2,255	50	2,239	50	8	0	4,502	100

From 2001 to 2010, motorcyclist fatalities increased by 41 percent. Among those increases, the 40 and older age group made up 39 percent of motorcyclists killed in 2001 as compared to 56 percent in 2010. Within this motorcyclist age group, fatalities increased by 100 percent over a 10-year period. Data has also shown, the average age of motorcycle riders killed in motor vehicle traffic crashes was 42.

Table 4
Motorcyclist Fatalities by Engine Size (cc), 2001 and 2010

Year	Engine Size (cc)				Total
	Up to 500	501–1,000	1,001–1,500	Other/Unknown	
2001	228	1,410	1,178	381	3,197
2010	206	1,641	1,469	1,186	4,502

Thirty-six percent of motorcyclists were killed while riding a 501-1000 cc motorcycle in 2010, which was the highest percentage of motorcyclists killed by engine size. Although, motorcyclists who rode larger bikes (1,001 to 1,500 cc) represented the highest fatality percentage increase from 2001 to 2010.

Licensing

Twenty-two percent of motorcycle riders involved in fatal crashes in 2010 were riding their vehicles without a valid motorcycle license at the time of the collision, 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 and a motorcycle only license.

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

Almost one out of four motorcycle riders in fatal crashes in 2010 were riding their vehicles with an invalid license.

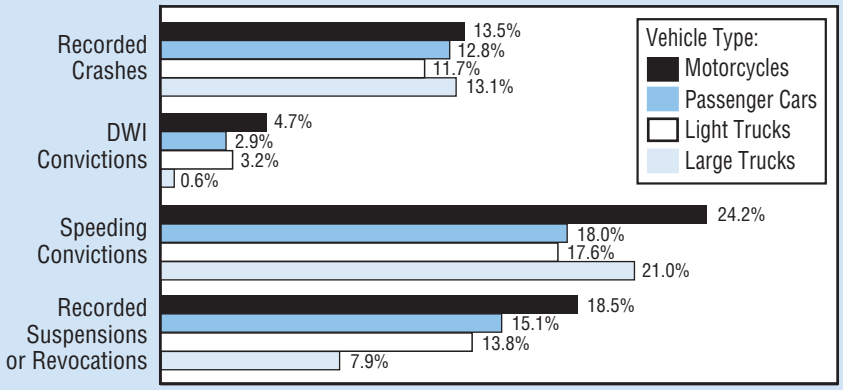
In 2010, a higher percentage of motorcycle riders in fatal crashes had BAC levels of .08 g/dL or higher than any other type of driver.

Previous Driving Records

As shown in Figure 1, motorcycle riders were shown to have the highest percentage of drivers with previous driving convictions as compared to other vehicle drivers.

Figure 1

Previous Driving Records of Drivers Involved in Fatal Traffic Crashes, by Type of Vehicle, 2010



Note: Excluding all drivers with unknown previous records.

Forty-two percent of motorcycle riders who died in single-vehicle crashes in 2010 had BAC levels of .08 g/dL or higher.

Alcohol

In fatal crashes in 2010 a higher percentage of motorcycle riders had blood alcohol concentration (BAC) of .08 grams per deciliter (g/dL) or higher than any other type of motor vehicle driver. The percentages for drivers involved in fatal crashes were 28 percent for motorcycles, 23 percent for passenger cars, 22 percent for light trucks, and 2 percent for large trucks.

In 2010, 1,214 (29%) of all fatally injured motorcycle riders had BAC levels of .08 g/dL or higher. An additional 338 (8 %) had lower alcohol levels (BAC .01 to .07 g/dL).

The percentage with BAC .08 g/dL or above was highest for fatally injured motorcycle riders among the age group 40–44 (40%), followed by the 45–49 and 35–39 age groups at 39 percent, respectively.

Forty-two percent of the 1,921 motorcycle riders who died in single-vehicle crashes in 2010 had BAC levels of .08 g/dL or higher. Sixty-five 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 a BAC of .08 or Higher, by Crash Type and Time of Day, 2001 and 2010

Crash Type and Time of Day		2001			2010		
		Total Motorcycle Riders Killed	BAC=.08+		Total Motorcycle Riders Killed	BAC=.08+	
			Number	Percent		Number	Percent
All Crashes	Total*	2,955	872	30	4,192	1,214	29
	Weekday	1,433	343	24	2,119	490	23
	Weekend	1,511	522	35	2,065	720	35
Single-Vehicle	Total*	1,373	573	42	1,921	808	42
	Weekday	584	213	36	864	308	36
	Weekend	778	354	45	1,049	497	47
Multi-Vehicle	Total*	1,582	299	19	2,271	406	18
	Weekday	849	131	15	1,255	182	14
	Weekend	733	169	23	1,016	224	22
	Daytime	1,464	204	14	2,163	274	13
	Nighttime	1,467	652	44	2,005	929	46

*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 nearly 4 times more likely to have BAC levels of .08 g/dL or higher than those killed during the day.

Motorcycle riders killed in traffic crashes at night were almost 4 times more likely to have BAC levels of .08 g/dL or higher than those killed during the day (46% and 13%, respectively).

The reported helmet use rate for motorcycle riders with BAC levels .08 g/dL or higher killed in traffic crashes was 44 percent, compared with 66 percent for those with no alcohol (BAC = .00 g/dL).

Table 6

Motorcycle Rider Fatalities in Motor Vehicle Traffic Crashes by State and Rider's BAC, 2010

State	Total Motorcycle Riders Killed	Impaired Motorcycle Riders Killed (BAC=.08+)	BAC=.01+
	Number	Percent	Percent
Alabama	81	31	35
Alaska	9	33	33
Arizona	88	29	36
Arkansas	73	24	29
California	341	27	34
Colorado	72	23	29
Connecticut	50	40	45
Delaware	8	33	33
Dist of Columbia	1	0	0
Florida	365	32	39
Georgia	121	17	25
Hawaii	26	47	48
Idaho	26	31	40
Illinois	121	32	46
Indiana	102	32	37
Iowa	55	25	33
Kansas	40	37	43
Kentucky	87	20	25
Louisiana	68	26	35
Maine	17	18	18
Maryland	78	22	35
Massachusetts	54	29	46
Michigan	128	25	32
Minnesota	45	34	36
Mississippi	41	31	37
Missouri	86	20	26
Montana	26	15	23
Nebraska	12	18	26
Nevada	45	24	32
New Hampshire	26	27	39
New Jersey	67	25	37
New Mexico	33	33	37
New York	173	28	37
North Carolina	179	26	34
North Dakota	12	33	42
Ohio	157	34	41
Oklahoma	73	28	36
Oregon	36	15	18
Pennsylvania	202	33	42
Rhode Island	15	36	57
South Carolina	97	42	52
South Dakota	20	11	27
Tennessee	121	27	32
Texas	383	36	47
Utah	19	22	25
Vermont	4	25	25
Virginia	84	22	30
Washington	67	23	33
West Virginia	31	19	26
Wisconsin	97	36	48
Wyoming	30	39	45
National	**4,192**	**29**	**37**
Puerto Rico	45	32	44

Helmet Use and Effectiveness

NHTSA estimates that helmets saved the lives of 1,550 motorcyclists in 2010. If all motorcyclists had worn helmets, an additional 706 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 a helmet, 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 2010 stood at 54 percent, a decrease from 67 percent in 2009.

Reported helmet use rates for fatally injured motorcyclists in 2010 were 58 percent for riders and 49 percent for passengers, compared with 57 percent and 43 percent, respectively, in 2009.

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 helmets must afford each user.

In 2010, 20 States, the District of Columbia, and Puerto Rico required helmet use by all motorcyclists. Whereas 27 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.

Sixty-six percent of motorcyclists killed in 2010 were not wearing helmets in States without universal helmet laws, as compared to 10 percent in States with universal helmet laws.

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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

Motorcycle Rider Fatalities, by State and Helmet Use, 2010

State	Total Motorcycle Riders Killed	Helmeted	Not Helmeted
	Number	Percent	Percent
Alabama*	81	94	6
Alaska	9	33	67
Arizona	88	42	58
Arkansas	73	41	59
California*	341	93	7
Colorado	72	38	63
Connecticut	50	28	72
Delaware	8	38	63
Dist of Columbia*	1	100	0
Florida	365	49	51
Georgia*	121	88	12
Hawaii	26	19	81
Idaho	26	42	58
Illinois	121	16	84
Indiana	102	15	85
Iowa	55	17	83
Kansas	40	28	72
Kentucky	87	38	62
Louisiana*	68	85	15
Maine	17	47	53
Maryland*	78	85	15
Massachusetts*	54	89	11
Michigan*	128	92	8
Minnesota	45	33	67
Mississippi*	41	61	39
Missouri*	86	89	11
Montana	26	46	54
Nebraska*	12	100	0
Nevada*	45	84	16
New Hampshire	26	31	69
New Jersey*	67	83	17
New Mexico	33	3	97
New York*	173	90	10
North Carolina*	179	94	6
North Dakota	12	17	83
Ohio	157	26	74
Oklahoma	73	16	84
Oregon*	36	89	11
Pennsylvania	202	43	57
Rhode Island	15	27	73
South Carolina	97	24	76
South Dakota	20	30	70
Tennessee*	121	92	8
Texas	383	41	59
Utah	19	47	53
Vermont*	4	100	0
Virginia*	84	99	1
Washington*	67	92	8
West Virginia*	31	71	29
Wisconsin	97	21	79
Wyoming	30	21	79
National	**4,192**	**58**	**42**
Puerto Rico*	45	18	82

*States requiring helmet use for all motorcyclists.