



# MOTORCYCLES 2018

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## Reported crashes in Indiana in 2018:

- The number of motorcyclists killed in collisions decreased 24 percent from 147 in 2017 to 112.
- 1,930 individuals were injured in motorcycle-related crashes, down 16 percent from 2017.
- Fatal motorcycle collisions decreased 30 percent, from 144 in 2017 to 101 in 2018.
- Fatalities per 100,000 motorcycle registrations decreased 27 percent from 2017.
- Fifty-five percent of motorcycle operators were in collisions involving more than one vehicle.
- Eighteen percent of motorcyclists who died were helmeted, compared to 29 percent who suffered non-fatal injuries.
- Helmet use in collisions was highest among motorcyclists 21 to 24 years of age (51 percent). Motorcyclists ages 45 to 54 years old (20 percent) had the lowest helmet usage rates.

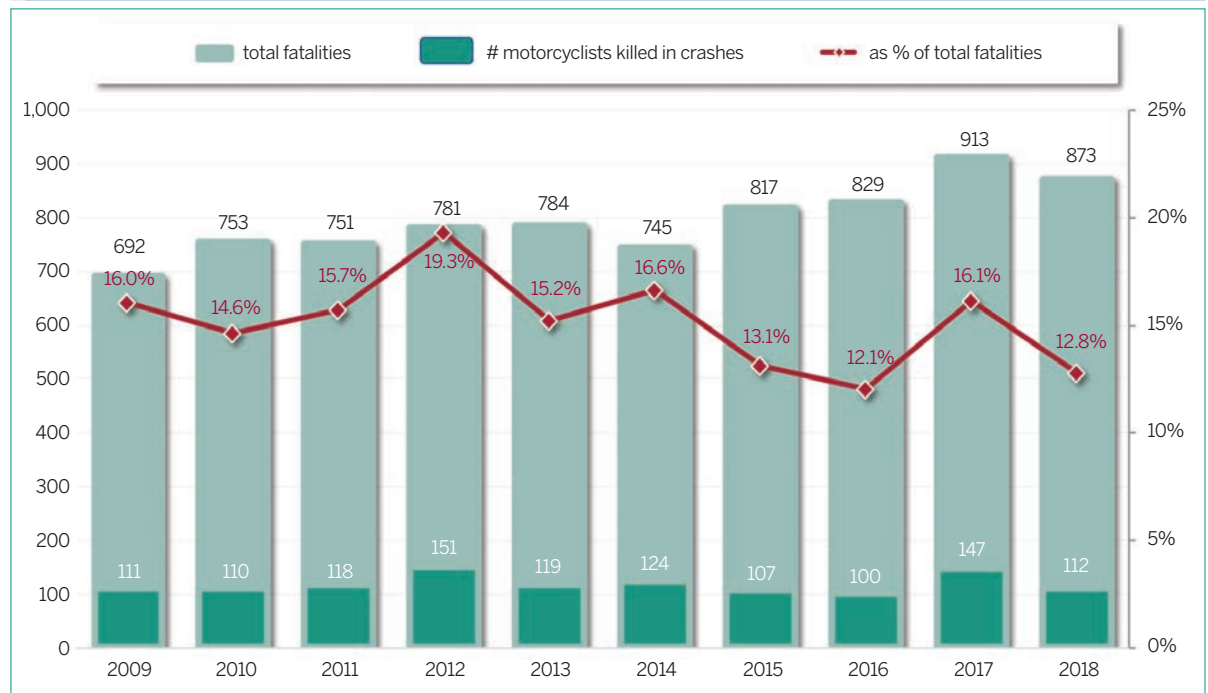
In 2018, 112 motorcyclists died in Indiana traffic collisions involving at least one motorcycle, a 24 percent decrease from 2017 (Figure 1). The largest single-year increase in the past decade happened between 2016 and 2017 with a 47 percent jump. However, the number of motorcyclists killed in collisions has fluctuated during the past 10 years, from a high of 151 in 2012 to a low of 100 in 2016. In that time, motorcycle collisions made up a small fraction of all collisions—typically less than 2 percent—but were responsible for a disproportionately high percentage of overall traffic fatalities (13 percent in 2018).

This fact sheet contains information on motorcycle collisions, demographic characteristics of the people involved, helmet use, rates of alcohol impairment, primary factors in motorcycle collisions, and motorcycle licensing within the state during the 2018 calendar year. Analyses include data and definitions from sources listed on the last page of this report. Indiana data comes primarily from the Indiana State Police Automated Reporting and Information Exchange System (ARIES) as of March 18, 2019.

### Notes:

1. **Motorcycles include motorcycles, Class A and Class B motor driven cycles, and motorized bicycles.**
2. **A motorcycle operator is the person operating or driving the motorcycle; passenger is the person seated on, but not operating, the motorcycle; motorcyclist refers to either the operator or passenger.**
3. **Data discrepancies may exist between the 2018 Indiana traffic safety reports and previous traffic safety publications due to updates to the Indiana State Police ARIES data since the original publication dates.**

Figure 1. Indiana motorcyclist fatalities as a percentage of total traffic fatalities, 2009-2018



Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 18, 2019

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# COLLISIONS INVOLVING MOTORCYCLES

From 2017 to 2018, fatal motorcycle collisions decreased by 30 percent, from 144 to 101 (Table 1). These collisions have generally declined about 6 percent annually from 2014 to 2018, and motorcyclist injuries dropped about 8 percent annually. From 2014 to 2018, fatalities per 100,000 registrations have decreased 3 percent annually, from 67 to 49. Last year alone, injuries per 100,000 registrations decreased 9 percent while fatalities per 100,000 registrations dropped 27 percent.

# PEOPLE INVOLVED, FATALITIES AND INJURIES IN MOTORCYCLE COLLISIONS

The number of motorcycle operators and passengers involved in collisions declined 6 percent annually from 2014 through 2018 (Table 2). In 2018 alone, 112 motorcycle operators and passengers died in collisions. By far, operators accounted for most of these fatalities, yet passengers experienced higher fatality rates than operators. The number of operators killed dropped more than 3 percent in the past five years, while passenger deaths increased 5 percent during that time.

Indiana also saw a decline in motorcycle collision-related injuries. In 2018, 1,930 motorcyclists sustained non-fatal injuries during collisions, accounting for an overall decrease of 16 percent from 2017. The number of passengers injured in crashes also dipped by 26 percent from 2017, while reports of injured operators dropped nearly 14 percent.

**Table 1. Motorcycle registrations and motorcyclist fatalities and injuries in Indiana collisions, 2014-2018**

						Annual rate of change	
	2014	2015	2016	2017	2018	2017-18	2014-18
<b>Motorcycle registrations</b>	<b>221,606</b>	<b>253,921</b>	<b>251,032</b>	<b>220,340</b>	<b>230,107</b>	<b>4.4%</b>	<b>0.9%</b>
Collisions	3,413	3,270	3,220	3,140	2,681	-14.6%	-5.9%
Fatal collisions	122	104	101	144	101	-29.9%	-4.6%
Fatalities	124	107	100	147	112	-23.8%	-2.5%
Non-fatal injuries	2,676	2,417	2,324	2,285	1,930	-15.5%	-7.8%
<b>Per 100,000 motorcycle registrations</b>							
Collisions	1,540.1	1,287.8	1,282.7	1,425.1	1,165.1	-18.2%	-6.7%
Fatal collisions	55.1	41.0	40.2	65.4	43.9	-32.8%	-5.5%
Fatalities	56.0	42.1	39.8	66.7	48.7	-27.0%	-3.4%
Non-fatal injuries	1,207.5	951.9	925.8	1,037.0	838.7	-19.1%	-8.7%

Sources: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 18, 2019  
Indiana Bureau of Motor Vehicles, as of March 4, 2019

Notes:

- 1) Non-fatal injuries include individuals with at least one incapacitating, non-incapacitating, or other injury.
- 2) Motorcycles include motorcycles, Class A and Class B motor-driven cycles, and motorized bicycles.

**Table 2. Motorcyclists involved in Indiana collisions by person type and injury status, 2014-2018**

All motorcyclists						Annual rate of change	
	2014	2015	2016	2017	2018	2017-18	2014-18
	<b>3,691</b>	<b>3,499</b>	<b>3,407</b>	<b>3,402</b>	<b>2,871</b>	<b>-15.6%</b>	<b>-6.1%</b>
<b>Operators</b>	<b>3,310</b>	<b>3,164</b>	<b>3,115</b>	<b>3,056</b>	<b>2,601</b>	<b>-14.9%</b>	<b>-5.8%</b>
Fatal	110	98	89	134	95	-29.1%	-3.6%
Non-fatal injuries	2,320	2,117	2,061	1,964	1,691	-13.9%	-7.6%
Not injured	880	949	965	958	815	-14.9%	-1.9%
<b>Passengers</b>	<b>381</b>	<b>335</b>	<b>292</b>	<b>346</b>	<b>270</b>	<b>-22.0%</b>	<b>-8.2%</b>
Fatal	14	9	11	13	17	30.8%	5.0%
Non-fatal injuries	356	300	263	321	239	-25.5%	-9.5%
Not injured	11	26	18	12	14	16.7%	6.2%
<b>Fatality rate</b>							
Operators	3.3%	3.1%	2.9%	4.4%	3.7%		
Passengers	3.7%	2.7%	3.8%	3.8%	6.3%		

Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 18, 2019

Notes:

- 1) Motorcyclists include operators and passengers on motorcycles, Class A and Class B motor-driven cycles, and motorized bicycles.
- 2) Non-fatal injuries include individuals with at least one incapacitating, non-incapacitating, or other injury.
- 3) Not injured includes ALL individuals involved in collisions reported as NULL values in the injury status code field. Reporting officers are instructed to include all drivers in ARIES, but to include passengers in the crash report only if an injury occurs; therefore, not injured counts of passengers should be interpreted with caution.

# GENDER

Far more males than females are involved as motorcyclists in motorcycle collisions, with males accounting for most motorcycle fatalities (Table 3) in the state. The number of male motorcyclists killed in crashes decreased 27 percent in 2018, while the number of collision-involved female operators decreased 6 percent from 2017 to 2018. The number of female motorcycle operators killed also decreased slightly in 2017 (from 4 to 1).

**Table 3. Injury status of motorcyclists in Indiana collisions by gender and person type, 2014-2018**

Person type, gender, and injury status						Annual rate of change	
	2014	2015	2016	2017	2018	2017-18	2014-18
<b>All motorcyclists</b>	<b>3,691</b>	<b>3,499</b>	<b>3,407</b>	<b>3,402</b>	<b>2,871</b>	<b>-15.6%</b>	<b>-6.1%</b>
Fatal	124	107	100	147	112	-23.8%	-2.5%
Injured	2,676	2,417	2,324	2,285	1,930	-15.5%	-7.8%
Not injured	891	975	983	970	829	-14.5%	-1.8%
<b>Male</b>	<b>3,090</b>	<b>2,999</b>	<b>2,951</b>	<b>2,912</b>	<b>2,458</b>	<b>-15.6%</b>	<b>-5.6%</b>
Fatal	109	97	87	132	97	-26.5%	-2.9%
Injured	2,145	2,000	1,963	1,893	1,606	-15.2%	-7.0%
Not injured	836	902	901	887	755	-14.9%	-2.5%
<b>Female</b>	<b>597</b>	<b>497</b>	<b>449</b>	<b>482</b>	<b>409</b>	<b>-15.1%</b>	<b>-9.0%</b>
Fatal	15	10	13	15	15	0.0%	0.0%
Injured	530	415	361	392	324	-17.3%	-11.6%
Not injured	52	72	75	75	70	-6.7%	7.7%
<b>Operators only</b>	<b>3,306</b>	<b>3,161</b>	<b>3,108</b>	<b>3,048</b>	<b>2,597</b>	<b>-14.8%</b>	<b>-5.9%</b>
<b>Male</b>	<b>3,008</b>	<b>2,911</b>	<b>2,884</b>	<b>2,828</b>	<b>2,391</b>	<b>-15.5%</b>	<b>-5.6%</b>
Fatal	108	97	86	130	94	-27.7%	-3.4%
Injured	2,070	1,928	1,907	1,820	1,554	-14.6%	-6.9%
Not injured	830	886	891	878	743	-15.4%	-2.7%
<b>Female</b>	<b>298</b>	<b>250</b>	<b>224</b>	<b>220</b>	<b>206</b>	<b>-6.4%</b>	<b>-8.8%</b>
Fatal	2	1	3	4	1	-75.0%	-15.9%
Injured	249	187	154	144	137	-4.9%	-13.9%
Not injured	47	62	67	72	68	-5.6%	9.7%

Source: Indiana State Police Automated Reporting Information Exchange System, as of March 18, 2019

Notes:

- 1) Excludes cases where gender or injury status are unknown.
- 2) Non-fatal injuries include individuals with at least one incapacitating, non-incapacitating, or other injury.
- 3) Not injured includes ALL individuals involved in collisions reported as NULL values in the injury status code field. Reporting officers are instructed to include all drivers in ARIES, but to include passengers in the crash report only if an injury occurs; therefore, not injured counts of passengers should be interpreted with caution.

# AGE AND VEHICLES INVOLVED

Table 4 includes motorcycle operators involved in collisions by age group and by the number of vehicles involved—a single vehicle (SV) or multiple vehicles (MV). From 2014 to 2018, young drivers ages 15 to 20 were the most likely to be involved in multi-vehicle collisions. Figure 2 shows that in 2018, 55 percent of motorcycle drivers were involved in collisions with more than one vehicle and 45 percent were involved in single-vehicle collisions.

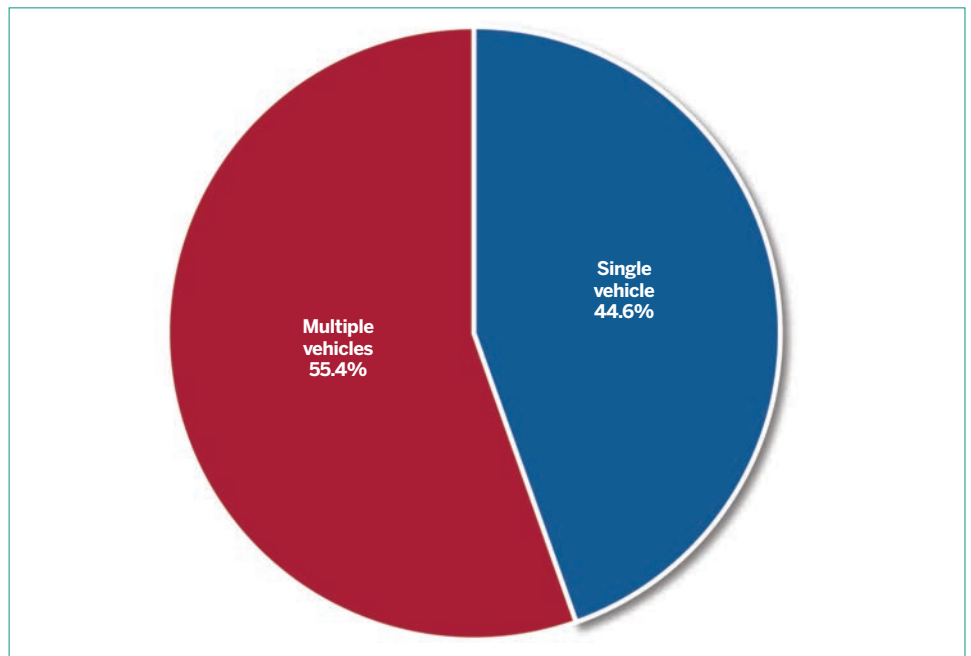
**Table 4. Motorcycle operators involved in Indiana collisions, by age and vehicles involved, 2014-2018**

Age group	<div style="display: flex; justify-content: space-between; align-items: center;"> <span>Low</span> <span>&lt;</span> <span>&lt;</span> <span>&gt;</span> <span>&gt;</span> <span>High</span> </div>									
	2014		2015		2016		2017		2018	
	Single vehicle	Multiple vehicles	Single vehicle	Multiple vehicles	Single vehicle	Multiple vehicles	Single vehicle	Multiple vehicles	Single vehicle	Multiple vehicles
15-20	39.4%	60.6%	33.6%	66.4%	40.3%	59.7%	36.4%	63.6%	44.1%	55.9%
21-24	43.8%	56.2%	42.3%	57.7%	44.4%	55.6%	43.1%	56.9%	39.1%	60.9%
25-34	44.0%	56.0%	40.4%	59.6%	41.1%	58.9%	48.1%	51.9%	37.5%	62.5%
35-44	44.9%	55.1%	44.1%	55.9%	43.9%	56.1%	43.8%	56.2%	39.6%	60.4%
45-54	46.2%	53.8%	41.9%	58.1%	46.7%	53.3%	44.3%	55.7%	42.4%	57.6%
55-64	44.1%	55.9%	46.4%	53.6%	46.0%	54.0%	41.7%	58.3%	48.9%	51.1%
65 +	44.4%	55.6%	45.9%	54.1%	44.5%	55.5%	40.2%	59.8%	49.2%	50.8%
<b>All ages</b>	<b>44.1%</b>	<b>55.9%</b>	<b>42.3%</b>	<b>57.7%</b>	<b>44.1%</b>	<b>55.9%</b>	<b>43.6%</b>	<b>56.4%</b>	<b>42.4%</b>	<b>57.6%</b>

Sources: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 18, 2019  
Indiana Bureau of Motor Vehicles, as of March 4, 2019

Notes:  
1) Data limited to operators with valid age reported.  
2) Excludes operators under 15 years old.

**Figure 2. Motorcycle operators involved in Indiana collisions, by vehicles involved, 2018**



Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 18, 2019

# HELMET USE

In Indiana, only those younger than 18 or those operating a motorcycle with a motorcycle learner's permit are required to wear a helmet. During the 2014-2018 time frame, data shows that 31 percent of motorcyclists in crashes were wearing helmets (Table 5). In 2018, 18 percent of motorcyclists killed in crashes were wearing helmets, compared to 29 percent who suffered non-fatal injuries. However, it should be noted that this data only includes crashes for which helmet status is known.

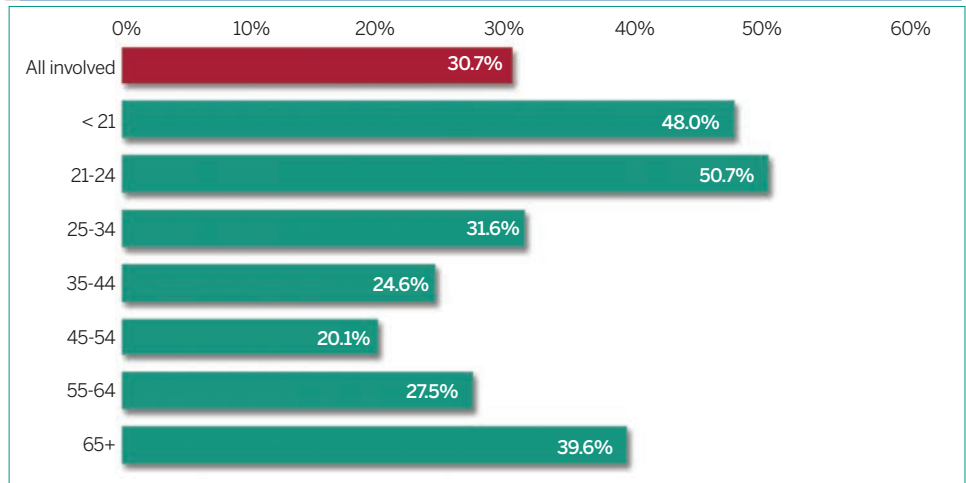
Helmet use in Indiana motorcycle collisions varies by age (Figure 3). Motorcyclists ages 21 to 24 (51 percent) had the highest rate of helmet use, followed by those under 21 years of age (48 percent). In 2018 collisions, motorcyclists 45 to 54 years old exhibited the lowest rates of helmet use (20 percent).

**Table 5. Helmet use among motorcyclists in Indiana collisions by injury status, 2014-2018**

Helmet use/injury status						Annual rate of change	
	2014	2015	2016	2017	2018	2017-18	2014-18
<b>All motorcyclists</b>	<b>3,691</b>	<b>3,499</b>	<b>3,407</b>	<b>3,402</b>	<b>2,871</b>	<b>-15.6%</b>	<b>-6.1%</b>
Helmeted	978	1,125	1,081	1,120	880	-21.4%	-2.6%
<i>Helmet use rate</i>	26.5%	32.2%	31.7%	32.9%	30.7%	-6.9%	3.7%
<b>Fatalities</b>	<b>124</b>	<b>107</b>	<b>100</b>	<b>147</b>	<b>112</b>	<b>-23.8%</b>	<b>-2.5%</b>
Helmeted	27	17	23	40	20	-50.0%	-7.2%
<i>Helmet use rate</i>	21.8%	15.9%	23.0%	27.2%	17.9%	-34.4%	-4.8%
<b>Non-fatal injuries</b>	<b>2,676</b>	<b>2,417</b>	<b>2,324</b>	<b>2,285</b>	<b>1,930</b>	<b>-15.5%</b>	<b>-7.8%</b>
Helmeted	671	765	707	750	560	-25.3%	-4.4%
<i>Helmet use rate</i>	25.1%	31.7%	30.4%	32.8%	29.0%	-11.6%	3.7%
<b>Not injured</b>	<b>891</b>	<b>975</b>	<b>983</b>	<b>970</b>	<b>829</b>	<b>-14.5%</b>	<b>-1.8%</b>
Helmeted	280	343	351	330	300	-9.1%	1.7%
<i>Helmet use rate</i>	31.4%	35.2%	35.7%	34.0%	36.2%	6.4%	3.6%

Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 18, 2019

**Figure 3. Percentage of helmet use reported for motorcyclists involved in Indiana collisions by age of motorcyclist, 2018**

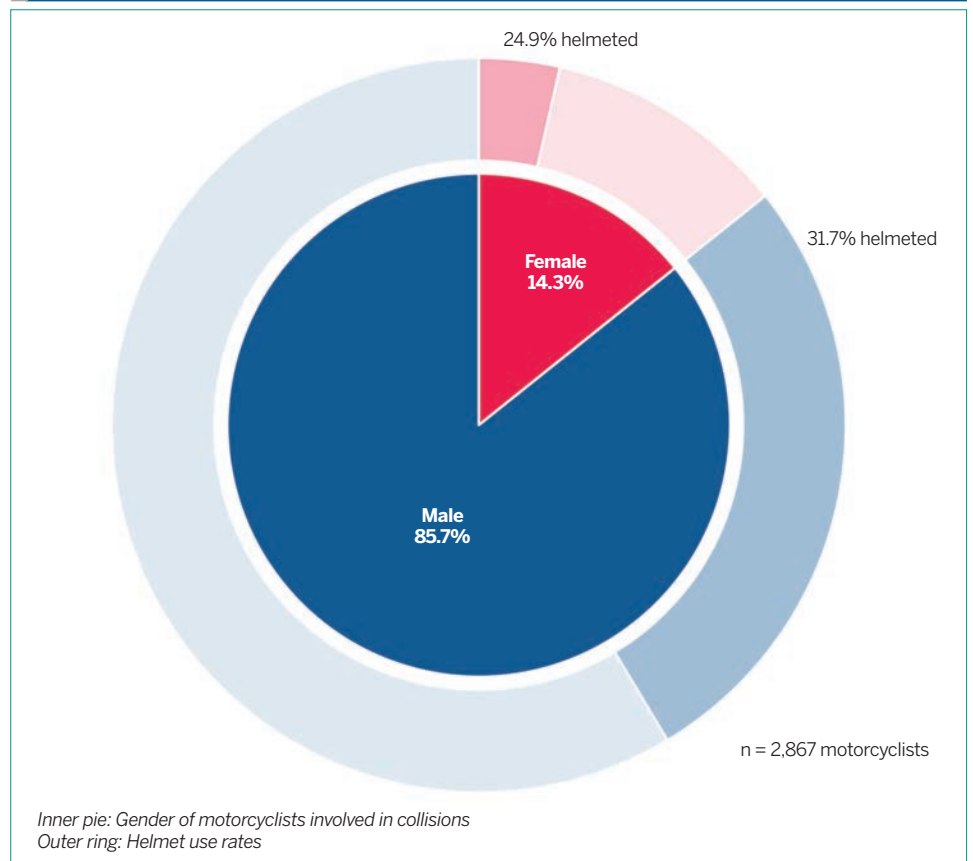


Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 18, 2019

Note: Excludes unknown age.

As illustrated in Figure 4, male motorcyclists accounted for 86 percent of all motorcyclists in collisions and had higher rates of helmet use than their female counterparts.

Figure 4. Helmet usage among motorcyclists in Indiana collisions, by gender, 2018



Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 18, 2019

Note: Includes cases with valid gender reported.

# ALCOHOL

The number of collisions involving motorcycle operators with a blood alcohol content (BAC) of 0.08 g/dL or more decreased from 111 in 2017 to 89 in 2018 (Table 6). From 2014 to 2018, the number of operators with 0.15 BAC and greater declined annually by about 14 percent. During that same five-year period, among reported BAC results each year, anywhere from 56–62 percent of motorcycle operators were reported as having a BAC higher than 0.08.

The number of motorcycle operators who had a BAC of 0.08 g/dL or greater dropped sharply from 2017 to 2018 (from 17 to 6) (Table 7). It should be noted that the percentage of fatalities with reported BAC results in ARIES dropped from 35 percent in 2014 to 23 percent in 2018, with a five-year low of 20 percent in 2015. Considering only those with reported results, the percentage of impaired operators with a 0.08 BAC or greater who died in collisions has varied from 2014 to 2018—53 percent in 2017, which dropped to 27 percent in 2018. These declines should be considered cautiously in the light of very incomplete reporting of BAC results in the ARIES database.

**Table 6. Motorcycle operators in Indiana collisions, by blood alcohol content (BAC) (g/dL), 2014-2018**

BAC range, g/dL	Count of motorcycle operators					Annual rate of change	
	2014	2015	2016	2017	2018	2017-18	2014-18
<b>Total motorcycle operators</b>	<b>3,310</b>	<b>3,164</b>	<b>3,115</b>	<b>3,056</b>	<b>2,601</b>	<b>-14.9%</b>	<b>-5.8%</b>
No BAC reported	3,051	2,969	2,927	2,867	2,445	-14.7%	-5.4%
% total operators	92.2%	93.8%	94.0%	93.8%	94.0%		
< 0.01	86	55	46	56	42	-25.0%	-16.4%
% total operators	2.6%	1.7%	1.5%	1.8%	1.6%		
0.01 < 0.08	27	20	25	22	25	13.6%	-1.9%
% total operators	0.8%	0.6%	0.8%	0.7%	1.0%		
0.08 < 0.15	38	41	45	34	31	-8.8%	-5.0%
% total operators	1.1%	1.3%	1.4%	1.1%	1.2%		
0.15 and greater	108	79	72	77	58	-24.7%	-14.4%
% total operators	3.3%	2.5%	2.3%	2.5%	2.2%		
<b>As % of reported results</b>							
< 0.01	33.2%	28.2%	24.5%	29.6%	26.9%		
0.01 < 0.08	10.4%	10.3%	13.3%	11.6%	16.0%		
0.08 < 0.15	14.7%	21.0%	23.9%	18.0%	19.9%		
0.15 and greater	41.7%	40.5%	38.3%	40.7%	37.2%		

Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 18, 2019

**Table 7. Motorcycle operators killed in collisions, by blood alcohol content, 2014-2018**


BAC range, g/dL	Count of operators					Annual rate of change	
	2014	2015	2016	2017	2018	2017-18	2014-18
<b>Operators killed</b>	<b>110</b>	<b>98</b>	<b>89</b>	<b>134</b>	<b>95</b>	<b>-29.1%</b>	<b>-3.6%</b>
Not reported or no test	72	72	69	102	73	-28.4%	0.3%
0	22	16	12	13	10	-23.1%	-17.9%
0.01 < 0.08	1	2	2	2	6	200.0%	56.5%
0.08 < 0.15	4	1	2	8	3	-62.5%	-6.9%
0.15 and greater	11	7	4	9	3	-66.7%	-27.7%
<b>% with reported results</b>	<b>34.5%</b>	<b>26.5%</b>	<b>22.5%</b>	<b>23.9%</b>	<b>23.2%</b>		
<b>% 0.08 or higher (of all reported results)</b>	<b>39.5%</b>	<b>30.8%</b>	<b>30.0%</b>	<b>53.1%</b>	<b>27.3%</b>		

Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 18, 2019

# MOTORCYCLE COLLISIONS AND 'AT FAULT' DRIVERS OR OPERATORS

In multiple vehicle (MV) collisions involving motorcycles, there is a difference between the likelihood that the motorcycle operator or the other vehicle operator was deemed to be at fault (i.e., a vehicle's contributing circumstance matched the primary factor in the collision—referred to in Table 8 as being attributable). In 2018, multiple vehicle collisions in Indiana involving motorcycles most frequently involved some type of unsafe action by either or both the motorcyclist and the other vehicle drivers. However, when an unsafe action was involved, the driver of the other vehicle was more likely to be at fault (58 percent) than the motorcycles (40 percent). In contrast, certain collisions involving specific primary factors were more likely to be attributed to motorcyclists, including following too closely, unsafe speed, disregarding a signal, improper passing, loss of control, and vehicle-related factors. Drivers of the other vehicles in motorcycle collisions were found to be at fault more often for factors such as unsafe backing, failure to yield right of way, improper turning, and distraction.

**Table 8. Vehicles involved in Indiana multi-vehicle motorcycle collisions, by vehicle type, primary factor, and vehicle attributability to collision occurrence, 2018**



Primary factor	Vehicles involved		Count of vehicles attributable		% Attributable	
	Motorcycle	Other vehicles	Motorcycle	Other vehicles	Motorcycle	Other vehicles
<b>Unsafe actions</b>	<b>1,385</b>	<b>1,345</b>	<b>553</b>	<b>781</b>	<b>39.9%</b>	<b>58.1%</b>
Failure to yield right of way	560	561	111	445	19.8%	79.3%
Following too closely	312	283	178	104	57.1%	36.7%
Unsafe backing	77	75	7	68	9.1%	90.7%
Unsafe speed	75	67	59	10	78.7%	14.9%
Disregard signal/reg sign	73	79	48	25	65.8%	31.6%
Unsafe lane movement	71	69	37	33	52.1%	47.8%
Improper turning	60	60	15	43	25.0%	71.7%
Improper passing	58	53	41	14	70.7%	26.4%
Improper lane usage	45	45	24	21	53.3%	46.7%
Left of center	39	37	23	14	59.0%	37.8%
Speed too fast for weather conditions	9	10	4	4	44.4%	40.0%
Wrong way on one way	6	6	6	0	100.0%	0.0%
<b>Distraction</b>	<b>40</b>	<b>41</b>	<b>16</b>	<b>22</b>	<b>40.0%</b>	<b>53.7%</b>
<b>Vehicle-related</b>	<b>21</b>	<b>21</b>	<b>10</b>	<b>8</b>	<b>47.6%</b>	<b>38.1%</b>
<b>Loss of control</b>	<b>37</b>	<b>33</b>	<b>27</b>	<b>4</b>	<b>73.0%</b>	<b>12.1%</b>
<b>Environmental</b>	<b>25</b>	<b>19</b>	<b>13</b>	<b>12</b>	<b>52.0%</b>	<b>63.2%</b>
<b>Cognitive impairment</b>	<b>8</b>	<b>10</b>	<b>2</b>	<b>6</b>	<b>25.0%</b>	<b>60.0%</b>
<b>All other</b>	<b>121</b>	<b>110</b>	<b>60</b>	<b>74</b>	<b>49.6%</b>	<b>67.3%</b>
<b>Total</b>	<b>1,637</b>	<b>1,579</b>	<b>681</b>	<b>907</b>	<b>41.6%</b>	<b>57.4%</b>

Source: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 18, 2019

Notes:

- 1) A vehicle is attributable to the occurrence of a collision when the officer marks a contributing circumstance for that vehicle that also matches the collision primary factor. In multi-vehicle collisions, more than one vehicle can be classified as attributable.
- 2) Data excludes single-vehicle collisions involving motorcycles and collisions with unknown or unreported primary factor.
- 3) Other vehicles excludes unknown unit type, pedestrians, bicycles, and animal-drawn vehicles.
- 4) Due to reorganizations of primary factors and vehicle classifications, some numbers may not be comparable to previous publications.



# LICENSING AMONG COLLISION-INVOLVED MOTORCYCLISTS

In 2018, 47 percent of motorcycle operators involved in collisions were licensed with motorcycle endorsements, while 39 percent did not have the

endorsement on their license. However, 14 percent had no license at all or were of unknown license status (Table 9). Similar percentages were in place for fatal motorcycle collision involvement—49 percent of operators had a motorcycle endorsement and 38 percent did not. The number of unlicensed motorcycle operators involved in fatal collisions remained stable at 14 between 2017 and 2018.

**Table 9. Driver's license type reported by motorcycle operators involved in Indiana traffic collisions, 2014-2018**

All motorcycle collisions						Annual rate of change		% total involved
Type of driver's license reported	2014	2015	2016	2017	2018	2017-18	2014-18	2018
<b>All involved motorcycle (MC) operators</b>	<b>3,310</b>	<b>3,164</b>	<b>3,115</b>	<b>3,056</b>	<b>2,601</b>	<b>-14.9%</b>	<b>-5.8%</b>	<b>100.0%</b>
<b>Licensed, MC endorsement</b>	<b>1,417</b>	<b>1,548</b>	<b>1,524</b>	<b>1,399</b>	<b>1,228</b>	<b>-12.2%</b>	<b>-3.5%</b>	<b>47.4%</b>
Operators w/MC endorsement	994	1,083	1,035	988	861	-12.9%	-3.5%	33.2%
Chauffeur w/MC endorsement	163	182	211	164	136	-17.1%	-4.4%	5.2%
Motorcycle	133	131	140	132	137	3.8%	0.7%	5.3%
Learner motorcycle	118	135	129	109	86	-21.1%	-7.6%	3.3%
Public passenger chauffeur w/MC endorsement	9	17	9	6	8	33.3%	-2.9%	0.3%
<b>Licensed, no MC endorsement</b>	<b>1,323</b>	<b>1,297</b>	<b>1,246</b>	<b>1,278</b>	<b>1,018</b>	<b>-20.3%</b>	<b>-6.3%</b>	<b>39.3%</b>
Operator	1,120	1,101	1,062	1,098	901	-17.9%	-5.3%	34.8%
Commercial driver	78	91	80	89	60	-32.6%	-6.3%	2.3%
Learners permit	88	68	61	60	31	-48.3%	-23.0%	1.2%
Chauffeur	28	31	32	27	19	-29.6%	-9.2%	0.7%
Public passenger chauffeur	3	5	5	0	1	na	-24.0%	0.0%
Driver education learner's permit	4	1	5	3	3	0.0%	-6.9%	0.1%
Probationary operator license	2	0	1	1	3	200.0%	10.7%	0.1%
<b>No license</b>	<b>507</b>	<b>286</b>	<b>311</b>	<b>341</b>	<b>324</b>	<b>-5.0%</b>	<b>-10.6%</b>	<b>12.5%</b>
<b>Unknown license status</b>	<b>63</b>	<b>33</b>	<b>34</b>	<b>38</b>	<b>31</b>	<b>-18.4%</b>	<b>-16.2%</b>	<b>1.2%</b>
<b>Fatal motorcycle collisions</b>								
<b>Motorcycle operators involved in fatal collisions</b>	<b>124</b>	<b>105</b>	<b>107</b>	<b>145</b>	<b>110</b>	<b>-24.1%</b>	<b>-3.0%</b>	<b>100.0%</b>
<b>Licensed, MC endorsement</b>	<b>61</b>	<b>46</b>	<b>58</b>	<b>65</b>	<b>54</b>	<b>-16.9%</b>	<b>-3.0%</b>	<b>49.1%</b>
Operators w/MC endorsement	50	28	37	52	38	-26.9%	-6.6%	34.5%
Chauffeur w/MC endorsement	4	7	10	5	4	-20.0%	0.0%	3.6%
Learner motorcycle	2	8	7	4	5	25.0%	25.7%	4.5%
Motorcycle	5	3	4	3	6	100.0%	4.7%	5.5%
Public passenger chauffeur w/MC endorsement	0	0	0	1	1	0.0%	na	0.9%
<b>Licensed, no MC endorsement</b>	<b>50</b>	<b>56</b>	<b>42</b>	<b>65</b>	<b>42</b>	<b>-35.4%</b>	<b>-4.3%</b>	<b>38.2%</b>
Operator	43	52	37	60	34	-43.3%	-5.7%	30.9%
Commercial driver	2	1	5	1	3	200.0%	10.7%	2.7%
Chauffeur	3	1	0	3	2	-33.3%	-9.6%	1.8%
Learners permit	1	1	0	1	2	100.0%	18.9%	1.8%
Public passenger chauffeur	1	1	0	0	1	na	0.0%	0.9%
<b>No license</b>	<b>12</b>	<b>2</b>	<b>7</b>	<b>14</b>	<b>14</b>	<b>0.0%</b>	<b>3.9%</b>	<b>12.7%</b>
<b>Unknown license status</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>-100.0%</b>	<b>-100.0%</b>	<b>0.0%</b>

Sources: Indiana State Police Automated Reporting Information Exchange System (ARIES), as of March 18, 2019  
Indiana Bureau of Motor Vehicles, as of March 4, 2019

## DEFINITIONS

- **Alcohol-impaired:** A driver or operator is classified as alcohol-impaired when the driver has a blood alcohol content (BAC) test result at or above 0.08 g/dL. An alcohol-impaired collision involves at least one driver with 0.08 BAC or above.
- **Annual Rate of Change (ARC):** The rate that a beginning value must increase or decrease each period (e.g. month, quarter, year) in a time series to arrive at the ending value in the time series. ARC is a smoothed rate of change because it measures change in a variable as if the change occurred at a steady rate each period with compounding. For example, to measure change in a variable from 2014 to 2018, it is calculated as  $(\text{Value in 2018}/\text{Value in 2014})^{1/4} - 1$ .
- **Motorcyclist:** Includes the operators and passengers of motorcycles, Class A and Class B motor driven cycles, and motorized bicycles.

## DATA SOURCES

Indiana State Police Automated Reporting Information Exchange System (ARIES), current as of March 18, 2019.

Indiana Bureau of Motor Vehicles, current as of March 4, 2019.

This publication was prepared on behalf of the Indiana Criminal Justice Institute (ICJI) by the Indiana University Public Policy Institute (PPI). Please direct any questions concerning data in this document to ICJI at 317-232-1233.

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An electronic copy of this document can be accessed via the PPI traffic safety research project site (<http://trafficsafety.iupui.edu>), the ICJI website ([www.in.gov/cji/](http://www.in.gov/cji/)), or you may contact the PPI at 317-278-1305.



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## **Traffic Safety Project**

Designing and implementing effective traffic safety policies requires data-driven analysis of traffic collisions. To help in the policy-making process, the Indiana University Public Policy Institute collaborates each year with the Indiana Criminal Justice Institute to analyze vehicle crash data from the Automated Reporting Information Exchange System (ARIES), maintained by the Indiana State Police. This marks the thirteenth year of this partnership. Research findings are summarized in a series of publications on various aspects of traffic collisions, including alcohol-related crashes, commercial vehicles, dangerous driving, child passenger safety, motorcycles, occupant protection, and drivers. An additional publication provides detailed information on county and municipality data. These publications serve as the analytical foundation of traffic safety program planning and design in Indiana.

Indiana collision data are obtained from Indiana Crash Reports, as completed by law enforcement officers. Crash reports for all Indiana collisions are entered electronically through ARIES. Collisions trends as reported in these publications incorporate the effects of changes to data elements on the Crash Report, agency-specific enforcement policy changes, re-engineered roadways, driver safety education programs, and other unspecified effects. A collision produces three levels of data: collision, unit (vehicles), and individual. For this reason, readers should pay particular attention to the wording of statements about the data to avoid misinterpretations. If you have questions regarding trends or unexpected results, please contact the Indiana Criminal Justice Institute, Traffic Safety Division for more information.

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Guided by a Board of Trustees representing all components of Indiana's criminal and juvenile justice systems, the Indiana Criminal Justice Institute serves as the state's planning agency for criminal justice, juvenile justice, traffic safety, and victim services. ICJI develops long-range strategies for the effective administration of Indiana's criminal and juvenile justice systems and administers federal and state funds to carry out these strategies.

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NHTSA provides leadership to the motor vehicle and highway safety community through the development of innovative approaches to reducing motor vehicle crashes and injuries. The mission of NHTSA is to save lives, prevent injuries and reduce economic costs due to road traffic crashes, through education, research, safety standards and enforcement activity.

**Author:** Rachel Thelin, Senior Policy Analyst