

# Traffic Safety Facts

## Laws

April 2004

## Motorcycle Helmet Use Laws

Motorcycle helmets provide the best protection from head injury for motorcyclists involved in traffic crashes. The passage of helmet use laws governing all motorcycle riders is the most effective method of increasing helmet use. The National Highway Traffic Safety Administration (NHTSA) encourages States to enact legislation that requires all motorcycle riders to wear helmets. Additionally, NHTSA strongly supports comprehensive motorcycle safety programs that include motorcycle helmet usage, rider education, motorcycle operator licensing, and responsible use of alcohol.

### Key Facts

- In 2002, 3,244 motorcyclists died and approximately 65,000 were injured in highway crashes in the United States.

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- Per mile traveled in 2002, a motorcyclist is approximately 27 times more likely to die in a crash than someone riding in an automobile.
- Head injury is a leading cause of death in motorcycle crashes.
- An unhelmeted motorcyclist is 40 percent more likely to suffer a fatal head injury and 15 percent more likely to suffer a nonfatal injury than a helmeted motorcyclist when involved in a crash.
- NHTSA estimates that motorcycle helmets reduce the likelihood of a crash fatality by 37 percent.
- The Crash Outcome Data Evaluation System (CODES) study found that motorcycle helmets are 67 percent effective in preventing brain injuries and that unhelmeted motorcyclists involved in crashes were three times more likely to suffer brain injuries than those wearing helmets.
- From 1984 through 2002, NHTSA estimates that helmets saved the lives of 13,774 motorcyclists. If all motorcycle operators and passengers had worn helmets during that period, NHTSA estimates that 9,508 additional lives would have been saved.
- A study conducted at the University of Southern California, which analyzed 3,600 traffic crash reports covering motorcycle crashes, concluded that wearing helmets was the single most important factor in surviving motorcycle crashes.
- A 1994 study by the National Public Services Research Institute concluded that wearing motorcycle helmets does not restrict a rider's ability to hear auditory signals or see a vehicle in an adjacent lane.
- All motorcycle helmets sold in the United States are required to meet Federal Motor Vehicle Safety Standard 218, which established the minimum level of protection helmets must afford each user.
- Helmet use laws governing all motorcycle riders significantly increase helmet use and are easily enforced because of the riders' high visibility.
- As States begin to repeal helmet laws fewer riders are wearing helmets. According to the National Occupant Protection Survey, from the Fall 2000 to the Summer of 2002, helmet use dropped from 71 percent to 58 percent nationally.
- Data on crashes in States where only minors are required to wear helmets show that fewer than 40 percent of the fatally-injured minors wear helmets even though the law

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requires them to do so. Helmet laws that govern only minors are extremely difficult to enforce.

- According to NHTSA's 1998 Motor Vehicle Occupant Safety Survey, public support for motorcycle helmet use laws in the United States is strong, with four out of five people aged 16 and older, supporting such laws. This support has changed little from earlier occupant protection surveys, in 1996 - (81 percent) and in 1994 (82 percent). Support was more prevalent among women (89 percent) than men (71 percent), and among non-motorcyclists (83 percent) than those who rode motorcycles (47 percent), with this gap seeming to have widened in the past two years. Support also was higher in States requiring all riders to wear helmets (84 percent), compared with States having lesser requirements (75 percent) or no requirement (79 percent).
- In 1976, the Highway Safety Act was amended to remove sanctions against States without motorcycle helmet laws. Between 1976 and 1980, motorcycle fatalities increased 61 percent while motorcycle registrations increased only 15 percent in comparison with 1975, the year before repeals began.
- Caution must be exercised when comparing motorcycle crash statistics between States. This is because States differ significantly on a number of factors, such as weather, length of riding season, population density, and urban versus rural roads. The real issue is what happens within a State after a helmet law is adopted or repealed.
- Reported helmet use rates for fatally injured motorcyclists in 2002 were

53 percent for operators and 41 percent for passengers, unchanged from 2001.

## Legislative Status

- Nineteen States, the District of Columbia, and Puerto Rico require helmet use for all motorcycle operators and passengers. In another 28 States, only those under a certain age, usually 18, are required to wear helmets. Three States do not have laws requiring helmet use.
  - Since 1989, six States (Oregon, Nebraska, Texas, Washington, California, and Maryland) have enacted helmet use laws that govern all motorcycle occupants. In Oregon, there was a 33 percent reduction in motorcycle fatalities the year after its helmet law was restored; Nebraska had a 32 percent reduction in the first year of its law; Texas had a 23 percent reduction; Washington State had a 15 percent reduction; California had a 37 percent reduction; and Maryland had a 20 percent reduction.
  - Since 1997, six States (Arkansas, Texas, Kentucky, Louisiana, Florida, and Pennsylvania) have weakened universal helmet laws to limit coverage to those under the age of 21. These six States were the first States since 1983 to repeal or weaken a universal helmet law.
  - Helmet use decreased following the changes in helmet laws in Arkansas and Texas. In the first full year following repeal of the law, fatalities in Arkansas increased by 21 percent, compared with the fatality rate in the last full year under the law that required all riders to wear a helmet. In Texas, operator fatalities increased by 31 percent compared with the previous year when the helmet law was in place. Arkansas pre-hospital EMS data showed an increase in the number of injured motorcyclists and in the proportion of all injured motorcyclists with head injuries following the change in helmet laws. Texas Trauma Registry data showed that the proportion of motorcyclists treated for traumatic brain injury increased and that treatment costs for traumatic brain injury cases also increased following the law change. Treatment costs for other injury cases did not change to any major extent.
  - Motorcycle crash-related injuries, fatalities, and fatality rates increased in Kentucky (1998) and Louisiana (1999) following the weakening of their helmet laws covering all riders. Kentucky crash data show that in the two full years just prior to the helmet law repeal, there was an average of 573 motorcycle crash related injuries, while in the two post repeal years, there was an average of 785 injury crashes, a 37 percent increase. Louisiana crash data show injuries increased by more than 48 percent, from an average of 741 motorcyclist injuries in last two years of the all-rider helmet law to 1,101 in 2000. Fatality numbers increased in Kentucky from an average of 23 per year prior to repeal to an average of 36 following the repeal. In Louisiana, the average number of fatalities jumped from 26 to 55. In Kentucky motorcyclists killed per 10,000 registered motorcycles averaged 6.4 in the two years prior to repeal and jumped to 8.8 in the two years following repeal. Similarly, in Louisiana, the average fatality rate went from 4.5 in the two years before repeal to 7.9 in the year following repeal.
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■ Observed helmet use dropped in both Kentucky and Louisiana. In Kentucky, observed helmet use dropped from 96 percent in 1997 to 56 percent in 2001. Louisiana's observed helmet use dropped from 100 percent in 1997 to 52 percent in 2001.

## Cost Savings

■ Analysis of linked data from the Crash Outcome Data Evaluation System (CODES) in three States with universal helmet laws showed that without the helmet law, the total extra inpatient charges due to brain injury would have almost doubled from \$2,325,000 to \$4,095,000.

■ A number of studies have compared hospital costs for helmeted and unhelmeted motorcyclists involved in traffic crashes. These studies have revealed that unhelmeted riders involved in crashes are less likely to have insurance and more likely to have higher hospital costs than helmeted riders involved in similar crashes.

■ The CODES study, mentioned earlier, also found that brain injury cases were more than twice as costly as non-brain injury cases for the one-year period studied. Among the un-helmeted motorcycle in-patients, charges for those suffering brain injuries were 2.25 times higher than for those without brain injuries. Long-term costs were not included.

■ NHTSA estimates that motorcycle helmet use saved \$1.3 billion in 2002 alone. An additional \$853 million would have been saved if all motorcyclists had worn helmets.

■ NHTSA estimates that motorcycle helmet use saved \$19.5 billion in economic costs from 1984 through

2002. An additional \$14.8 billion would have been saved if all motorcyclists had worn helmets during the same period.

## Who Supports Universal Motorcycle Helmet Laws?

- AAA
  - Advocates for Highway and Auto Safety
  - Allstate Insurance Company
  - American Academy of Family Physicians
  - American Academy of Orthopedic Surgeons
  - American Association of State Highway and Transportation Officials
  - American Academy of Pediatrics
  - American Coalition for Traffic Safety, Inc.
  - American College of Emergency Physicians
  - American College of Preventive Medicine
  - American College of Surgeons
  - American Driver and Traffic Safety Education Association
  - American Insurance Association
  - American Medical Association
  - American Nurses Association
  - American Public Health Association
  - American Trauma Society
  - Association of Women's Health, Obstetrics, and Neonatal Nurses
  - Association for the Advancement of Automotive Medicine
  - Brain Injury Association
  - Center for Rural Emergency Medicine
  - Emergency Nurses Association
  - Emergency Nurses CARE
  - Epilepsy Foundation of America
  - GEICO
  - General Federation of Women's Clubs
  - Indian Health Service
  - Motorcycle Industry Council
  - National Association of County and City Health Officials
  - National Association of Orthopedic Nurses
  - National Association of Public Hospitals
  - National Association of Emergency Medical Technicians
  - National Association of State EMS Directors
  - National Association of State Head Injury Administrators
  - National Center for Injury Prevention and Control
  - National Conference of Black Mayors
  - National Flight Nurses Association
  - National Safety Council
  - National Sheriffs Association
  - Nationwide Insurance
  - Native American Injury Prevention Coalition
  - Prudential Insurance
  - State and Territorial Injury Prevention Directors Association
  - Students Against Destructive Decisions
  - State Farm Insurance
  - Think First Foundation
  - Wellness Councils of America
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## Information Sources

*Evaluation of the Repeal of Motorcycle Helmet Laws in Kentucky and Louisiana.* U.S. Department of Transportation, October 2003 (DOT HS 809 530). This report examines data from Kentucky and Louisiana to assess the effects of their helmet law changes on helmet use and motorcycle fatalities and injuries. Based on statewide observational surveys, motorcycle helmet use decreased substantially following repeal of the universal helmet laws.

*Evaluation of Motorcycle Helmet Law Repeal in Arkansas and Texas.* U.S. Department of Transportation, June 2000 (DOT HS 809 112). This report examined what happened in Arkansas and Texas when these States weakened motorcycle helmet use laws to cover only a segment of the riding population. The study reports declines in observed helmet use in both States, increases in injuries and fatalities resulting from motorcycle crashes, and increases in costs to treat traumatic brain injury cases resulting from motorcycle crashes.

*Without Motorcycle Helmet Law We All Pay the Price.* U.S. Department of Transportation, August 1998 (DOT HS 808 600). Consolidates motorcycle helmet effectiveness information by documenting the life and cost-saving

benefits of motorcycle helmets and the effectiveness of motorcycle helmet laws. The multimedia package discusses NHTSA's comprehensive approach to motorcycle safety and makes three points: (1) motorcycle helmets save lives and reduce head injuries to motorcyclists in crashes; (2) helmet laws for all riders increase helmet usage; and (3) helmet laws reduce the societal costs resulting from injuries and fatalities in motorcycle crashes.

*The Effects of Motorcycle Helmets Upon Seeing and Hearing.* U.S. Department of Transportation, NHTSA, February 1994 (DOT HS 808 399). This study examined the effect of wearing a helmet on the ability of motorcycle riders to: (1) visually detect the presence of vehicles in adjacent lanes before changing lanes; and (2) detect traffic sounds when operating at normal highway speeds. Results indicated that wearing a helmet does not restrict the likelihood of seeing a vehicle in an adjacent lane or the ability to hear auditory signals.

*The Crash Outcome Data Evaluation System (CODES): Technical Report.* U.S. Department of Transportation, NHTSA, January 1996 (DOT HS 808 338). This document presents State-specific results from the CODES project. These results show that safety belts and motorcycle helmets are effective in reducing fatalities and injuries. This re-

port also indicates that safety belt and motorcycle helmet use saves millions of dollars in direct medical costs.

*Report to Congress on The Benefits of Safety Belts and Motorcycle Helmets.* U.S. Department of Transportation, NHTSA, February 1996 (DOT HS 808 347). This study employed methods whereby Statewide data from police crash reports, emergency medical services, hospital emergency departments, hospital discharge files, claims, and other sources were linked so that those people injured in motor vehicle crashes could be followed through the health care system. Information for both the injured and uninjured was then used to determine the benefits of protective devices in motor vehicle crashes.

*Report to Congressional Requesters C Highway Safety: Motorcycle Helmet Laws Save Lives and Reduce Costs to Society.* U.S. General Accounting Office, July 1991 (GAO/RCED-91-170). This report evaluates studies on motorcycle helmet laws. The report summarizes each study's findings on: (1) the effectiveness of helmets in preventing deaths and serious injuries; (2) the effect of helmet laws on helmet use and fatality rates; and (3) the cost that society incurs when un-helmeted motorcyclists are involved in crashes. All studies comparing helmeted riders to un-helmeted riders found that helmeted riders had a lower fatality rate.

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## State Motorcycle Helmet Use Requirements

### April 2004

#### **19 States, D.C. and P.R. Required Use For All Riders**

Alabama  
California  
District of Columbia  
Georgia  
Maryland  
Massachusetts  
Michigan  
Mississippi  
Missouri  
Nebraska  
Nevada  
New Jersey  
New York  
North Carolina  
Oregon  
Puerto Rico  
Tennessee  
Vermont

Virginia  
Washington  
West Virginia

#### **Not Required In 3 States**

Colorado  
Illinois  
Iowa

#### **28 States Require Use For A Specific Segment of Riders (Usually Under 18)**

Alaska  
Arizona  
Arkansas  
Connecticut  
Delaware (1)  
Florida (2)  
Hawaii  
Idaho

Indiana  
Kansas  
Kentucky (3)  
Louisiana (4)  
Maine (5)  
Minnesota  
Montana  
New Hampshire  
New Mexico  
North Dakota  
Ohio (6)  
Oklahoma  
Pennsylvania (9)  
Rhode Island (7)  
South Carolina  
South Dakota  
Texas (8)  
Utah  
Wisconsin  
Wyoming

1. Required for riders under age 19 and helmets must be in the possession of other riders, even though use is not required
  2. Required for riders under age 21 and for those without \$10,000 of medical insurance that will cover injuries resulting from a motorcycle crash.
  3. Required for riders under age 21, riders operating a motorcycle with an instruction permit, riders with less than one year's experience, and/or riders who do not provide proof of health insurance to county clerk. (insurance provision repealed effective July 15, 2000).
  4. Required for riders under age 18 and those who do not have a health insurance policy with medical benefits of at least \$10,000. Proof of policy must be shown to law enforcement officer upon request.
  5. Required for riders under age 15 years of age, novices, and holders of learners permits.
  6. Required for riders under age 18 and first year operators.
  7. Required for riders under 21 and first year operators.
  8. Required for riders age 20 and under and those who have not completed a rider training course or who do not have \$10,000 medical insurance coverage.
  9. Required for riders under 21 and age 21 or older who have had a motorcycle operator's license for less than two years or who have not completed an approved motorcycle safety course.
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This report and additional information are available from your State Highway Safety Office, the NHTSA Regional Office serving your State, or from NHTSA Headquarters, Impaired Driving and Occupant Protection Office, ATTN: NTI-110, 400 Seventh Street, S.W., Washington, DC 20590; 202-366-4913; or NHTSA's web site at [www.nhtsa.dot.gov](http://www.nhtsa.dot.gov)

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