

**American Association of Neurological Surgeons
Congress of Neurological Surgeons
AANS/CNS Section on Neurotrauma and Critical Care
ThinkFirst National Injury Prevention Foundation**

Position Statement

on

MOTORCYCLE HELMET LAWS

Position Statement

The American Association of Neurological Surgeons (AANS), Congress of Neurological Surgeons (CNS), AANS/CNS Section on Neurotrauma and Critical Care and the ThinkFirst National Injury Prevention Foundation have a core mission to prevent and mitigate traumatic brain and spine injury. We thereby endorse universal motorcycle helmet laws for all motorcyclists in all states and oppose efforts of any state to repeal any universal motorcycle law currently in effect. Further, we urge states that have either repealed their universal helmet laws or have modified their laws to cover only a subgroup of riders with a partial motorcycle helmet requirement, to reinstate universal motorcycle helmet laws.

Background

As neurosurgeons caring for individuals involved in motorcycle crashes, we are acutely aware of the dangers these devastating accidents pose. As a specialty, we support the evidence that helmet use can prevent some of the severe morbidity and costs caused by motorcycle crashes. It is clear that helmets save lives. In the most recent National Highway Traffic Safety Administration (NHTSA) fatality data for 2015, total motorcycle fatalities increased by 8.3 percent (382 people). In states without universal helmet laws, 58 percent of motorcyclists killed in 2015 were not wearing helmets, as compared to 8 percent in states with universal helmet laws. The World Health Organization (WHO) describes a growing global trend toward enacting universal helmet laws. **Table 1** provides a historical timeline on the status of helmet laws in the United States.

Based on the available literature, the following statements have been substantiated:

- On public roadways, persons have the legal obligation to obey rules and regulations.
- Motorcycle helmets significantly lower the risk of death and serious injury for motorcyclists involved in a crash.
- Helmets are the only safety measure proven to save lives, and universal helmet laws have been proven to be the best way to ensure helmet use.
- In states with universal motorcycle helmet laws most, but not all, motorcyclists wear Department of Transportation-approved helmets.
- A NHTSA study found that when universal helmet laws were repealed, helmet use rates decreased from 99 percent to 50 percent. In states where the universal law was reinstated, helmet use rates again increased to above 95 percent.
- The risk of severe traumatic brain injury was 37 percent higher among young riders after a crash in states with partial helmet laws (applicable only to a population subgroup, most commonly younger riders and minors) than those states with universal helmet laws.

Compliance with helmet use is lower in partial law states and comparable to states with no helmet laws.

- The median age of motorcycle owners, now greater than 40 years, indicates that partial helmet laws aimed at younger individuals do not protect the majority of riders.
- Severe and fatal traumatic brain injury is far more common in non-helmeted than helmeted motorcyclists.
- There is little or no scientific evidence to support claims that motorcycle helmets increase the risk of cervical spine injury or other spine injury. Two recent publications that examined an extensive trauma database, as well as more detailed individual review, showed that there was no increased risk of cervical spine injury. Indeed there was a trend toward fewer cervical spine injuries in the helmeted riders.
- There is little or no scientific evidence to support claims that motorcycle helmets significantly decrease the peripheral vision of riders.
- There is little or no scientific evidence to support claims that motorcycle helmets impair a rider's ability to hear critical traffic sounds.
- The United States Supreme Court has found that state laws enforcing universal helmet laws do not infringe on motorcyclists' constitutional liberties. (*Simon v Sargent*, 346 F. Supp. 277)
- In 2010, motorcycle accidents in the U.S. cost an estimated \$16 billion in direct costs, including emergency and rehabilitation medical treatment, property damage, lost wages and insurance costs.
- Hospitalized un-helmeted motorcyclists incur higher health care costs than helmeted riders.
- Unhelmeted motorcyclists are less likely to have health insurance and more likely to have their medical expenses paid by government-funded health care (e.g. Medicaid).
- The public bears a portion of the burden of the additional costs incurred by injured unhelmeted motorcyclists.
- Unhelmeted motorcyclists are twice as likely to suffer traumatic brain injuries from crashes, and those motorcyclists hospitalized with severe traumatic brain injuries had median hospital charges that were 13 times greater than those without a traumatic brain injury.
- Motorcycle helmet use saved the U.S. an estimated \$3 billion in 2010.
- In states with universal helmet laws, the economic cost saving is nearly four times greater per registered motorcycle than in states without universal helmet laws. In the 30 months following the repeal of the Florida state universal helmet law in 2000, the estimated costs of treating brain injuries from motorcycle accidents more than doubled to \$44 million.

Conclusion

Advocating for motorcycle helmet laws can be compared to advocating for universal vehicle seatbelt laws and the inclusion of airbags, which have clearly prevented or mitigated fatalities and injuries in all 50 states. Regardless of the circumstances that cause motorcycle crashes, the consequences of injuries related to these accidents can be catastrophic. Un-helmeted individuals who have crashed risk death or permanent disability and lose valuable time and productivity to rehabilitation; this results in significant individual and societal costs. Universal helmet laws reinforce the WHO initiative begun in 1991 to promote motorcycle helmet use worldwide and align with the growing adoption of helmet laws globally. We firmly believe that universal helmet laws provide significant improvements in safety for all motorcycle riders.

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Table 1. Events in the History of Motorcycle Helmet Laws¹

Date	Event	Significance
1904	First motorcycles in America	
1924	American Motorcycle Association founded as a hobby group	
1935	Lawrence of Arabia (T.E. Lawrence) suffers fatal head injury in a motorcycle crash	
1940's	World War II – neurosurgeon Hugh Cairns advocates for helmets to be worn by dispatchers on motorcycles carrying communications to the front lines	
1965	Ralph Nader critiques the US auto industry's vehicle safety standards	In the beginning, helmet laws were an add-on to a larger initiative to improve highway safety.
1967	Congress passes the Highway Safety Act (HSA) that includes a provision that the federal government withhold funds to states without helmet laws. States without helmet laws could lose 10% of their highway construction funds, amounting to millions of dollars per state.	<ul style="list-style-type: none"> • The HSA initiated the adoption of helmet laws by many states. • By 1968, 38 states had passed motorcycle helmet laws.
1968-1972	Motorcycle proponents challenge helmet laws in the courts on the grounds they are unconstitutional and violate an individual's right to freedom of choice	
1970's	American Motorcycle Association organized a lobbying group espousing helmet laws as unconstitutional and discriminatory	
1972	ABATE (A Brotherhood Against Totalitarian Enactments) forms	This group became a very prominent voice for motorcycle proponents.
1972	Supreme Court rejected constitutional challenges to helmet laws in <i>Simon v. Sargent</i> , 346 F. Supp. 277	The ruling of the Supreme Court upholding the Constitutionality of helmet laws and State's power to enact and enforce helmet laws ended constitutional and freedom of choice legal challenges to helmet laws. Motorcycle proponents moved these arguments to government and the legislative arena where they continued to be heard.
1974	The Department of Transportation issued Federal Motor Vehicle Safety Standards for motorcycle helmets	It became illegal to sell motorcycle helmets that did not meet these standards.

Date	Event	Significance
1975	Universal helmet laws in 47 states and the District of Columbia	All but three states had universal helmet laws (IL, IA, CA).
1976	Congress removed the financial penalties on federal funds that were contingent upon states' enactment of helmet laws. \$17.5 Billion in federal highway funds to the states was no longer linked to states' compliance with helmet laws.	This catalyzed a widespread repeal of helmet laws.
1976-1983	<p>Repeal of Universal Helmet Laws in 28 states²</p> <p>1976-Alaska, Arizona, Connecticut, Iowa, Kansas, Louisiana, Oklahoma, Rhode Island</p> <p>1977-Colorado, Hawaii, Indiana, Maine, Minnesota, Montana, Nebraska, New Hampshire, North Dakota, Oregon, South Dakota, Texas, Utah, Washington</p> <p>1978-Delaware, Idaho, New Mexico, Ohio, Wisconsin</p> <p>1979-Maryland</p> <p>1980-South Carolina</p> <p>1983-Wyoming</p>	<ul style="list-style-type: none"> • States that fully repealed helmet laws: Connecticut, Colorado, Indiana, Iowa, Maine, Nebraska, Rhode Island <ul style="list-style-type: none"> – Later reinstated partial laws – Connecticut 1990, Colorado 2007, Indiana 1984, Maine 1980, Nebraska 1989, Rhode Island 1992, Washington 1987 • States with helmet law restricted to riders: <ul style="list-style-type: none"> – < 16 years – Kansas (1979 increased to < 18 years) – < 18 years - Arizona, Hawaii, Idaho, Louisiana, Maryland, Montana, New Hampshire, New Mexico, North Dakota, Oklahoma, Oregon, South Dakota, Texas, Utah – <18 years and instructional permit holders – Alaska, Minnesota, Ohio (& licensees < 1 year), Wisconsin – < 19 years –Delaware, Wyoming (1993 reduced to < 18 years) – < 21 years –South Carolina • Later reinstated universal helmet laws – Louisiana 1982 (revised again 1999 and 2004), Maryland 1992, Oregon (1988), Texas 1989 (in 1997 reduced again to partial helmet law), Washington 1990.
1989	Mandatory seat belt laws enacted in 34 states	
1990	Congress approved The Intermodal Surface Transportation Efficiency Act, which provided additional federal funds as an incentive to states with helmet and seat belt laws. A 3% penalty on federal funding was applied to states without these safety laws.	<ul style="list-style-type: none"> • The initial bill proposed a withholding of 10% of federal highway funds. • Helmet laws piggy-backed alongside seat belt laws.

Date	Event	Significance
1992	California adopted universal helmet law	<ul style="list-style-type: none"> CA long resisted helmet laws, and it wasn't until 1985 that CA adopted partial helmet laws for riders < 15 and ½ years of age. In the first year following institution of universal laws, compliance wearing helmets increased from approximately 33% to > 85%, the incidence of brain injury in riders decreased from 38% to 25%, and helmeted riders sustained less severe head injuries than un-helmeted riders.³ Motorcycle fatalities decreased by 26% following the law change.⁴
1995	The 3% penalty on federal funds for states without seat belt and motorcycle helmet safety laws, under the Intermodal Surface Transportation Efficiency Act, was abolished.	<ul style="list-style-type: none"> Motorcycle proponents were instrumental in lobbying to remove this government incentive to helmet laws. Removal of this financial incentive catapulted a round of repeals of helmet laws in numerous states. NH became helmet free with IL, IA, CO.
1995	New Hampshire – becomes a state with no helmet laws	In 1977, New Hampshire reduced its helmet law to a partial law for riders < 18 years until the federal government no longer required a helmet law as a condition for federal funding. Upon repeal of the federal penalty in 1995, NH became a state with no helmet law.
1997-2003	Round of repeals of helmet laws in numerous states ²	
1997	Arkansas reduced helmet law to riders age < 21 years	<ul style="list-style-type: none"> First state in 14 years to repeal its universal helmet law. Helmet use decreased from 97% to 52% within the first year of the law change; the number and percentage of motorcyclists who incurred a head injury increased following the law change; in 1998, 12% of helmeted versus 35% of un-helmeted riders sustained a head injury.⁵
1997	Texas reduced its universal helmet law to those <21 years and those 21 and older without \$10,000 in medical insurance and completion of a motorcycle education course	Helmet use decreased from 97% to 66% within the first year following the law change; in the first four months following repeal of universal helmet laws, brain injury increased from 18% to 25% of injured riders. ⁵
1998	Kentucky reduced helmet law to <21 years and to instructional permit holders and those licensed less than 1 year	Helmet use decreased from 96% before the repeal to 65% in 1999; the number of un-helmeted cyclists with head injury doubled following the law change. ⁶
1999-2004	Louisiana reduced helmet law to riders <18 years and those over 18 without \$10,000 in medical insurance <ul style="list-style-type: none"> In 2004, Louisiana again reinstated universal helmet law 	In 1982, Louisiana had reinstated universal helmet law.

Date	Event	Significance
2000	Florida reduced its universal law, in place since 1967, to require helmets in riders less than 21 and those 21 and older without \$10,000 in medical insurance	<ul style="list-style-type: none"> • Within two years following the law change, compliance with use of approved helmets dropped from nearly 100% to 47%. • Comparison of the two years before and after the 2000 Florida law demonstrated a 21% increase in fatalities per 10,000 registered motorcycles • Un-helmeted riders who sustained fatal injury increased from 9%, during full helmet compliance, to 66% following the law change and hospital admissions for head injured riders increased by 82%.⁷
2003	Pennsylvania required helmets for riders less than 21 years, instructional permit holders, and riders licensed less than 2 years who have not completed an approved safety course	A universal helmet law had been in place since 1968.
2004	Louisiana reinstated universal helmet laws to cover all riders	
2004	<ul style="list-style-type: none"> • Universal helmet laws in 20 states and the District of Columbia; • Partial helmet laws in 26 states; • No helmet law in 4 states (CO, IL, IA, NH). 	
2007	Colorado reinstated partial helmet law for riders aged 17 and under	A universal helmet law had been in place since 1977.
2009	Maine increased age limits on its partial helmet law to riders age <18 years	Since 1980, helmet laws in Maine had applied to riders < 15 years, to instructional permit holders and those licensed < 1 year.
2012	Michigan repealed its universal helmet law and adopted a partial law that required helmets in riders < 21 years; in addition, helmets required in riders 21 and older without \$20,000 in medical insurance and those without a motorcycle endorsement on their license for 2 or more years; successful completion of an approved motorcycle safety course exempts the 2-year endorsement requirement	A universal helmet law had been in place since 1969.
2015	New York State proposal to repeal universal helmet law that has been in effect since 1967	Senate Bill S2381 to reduce required helmets to motorcyclists < 21 years; as of February 2017, Senate Bill S2381 is in Senate Committee. ⁸

Date	Event	Significance
2016	Tennessee Senate Bill 0925 failed March 2016. It was the latest in a series of proposals to repeal the universal helmet law, in effect since 1967.	<ul style="list-style-type: none"> Senate Bill 0925, introduced February 2015, proposed to both exempt motorcyclists 21 years and older from required helmet use if they possessed health insurance other than TennCare and to prevent an un-helmeted rider from being cited solely for violation of this insurance requirement.⁹ Several earlier attempts to repeal the TN universal helmet law had included the “Motorcyclist Liberty Restoration Act” in 2012, which sought to exempt riders 21 and older without any prerequisites on the helmet exemption.¹⁰ Further proposals in 2012 and 2013 conditioned the exemption, requiring the rider to hold \$15,000 health insurance coverage in one bill,¹¹ and \$100,000 liability insurance and \$200,000 medical insurance in another.¹²
January 1, 2017	<p>Status of Helmet Laws</p> <ul style="list-style-type: none"> Universal helmet laws are applicable to all riders in 19 states & the District of Columbia Partial helmet laws apply to specific groups of riders in 28 states No helmet law in 3 states (Illinois, Iowa, and New Hampshire) 	<p>Required all riders:</p> <ul style="list-style-type: none"> Alabama, California, District of Columbia, Georgia, Louisiana, Maryland, Massachusetts, Mississippi, Missouri, Nebraska, Nevada, New Jersey, New York, North Carolina, Oregon, Tennessee, Vermont, Virginia, Washington, West Virginia <p>Required for riders 17-20 years (age limit varies by state):</p> <ul style="list-style-type: none"> Alaska, Arizona, Arkansas, Colorado, Connecticut, Delaware, Florida, Hawaii, Idaho, Indiana, Kansas, Kentucky, Maine, Michigan, Minnesota, Montana, New Mexico, North Dakota, Ohio, Oklahoma, Pennsylvania, Rhode Island, South Carolina, South Dakota, Texas, Utah, Wisconsin, Wyoming <p>Required for new riders with instructional permits or riding in their first 1-2 years of licensure:</p> <ul style="list-style-type: none"> Alaska, Kentucky, Maine, Michigan, Minnesota, Ohio, Pennsylvania, Rhode Island, Wisconsin (successful completion of an approved motorcycle safety course may exempt new licensees from wearing a helmet in Michigan and Pennsylvania). <p>Required to hold medical insurance policy:</p> <ul style="list-style-type: none"> Florida, Michigan, Texas (TX exempt if pass motorcycle safety course).

Endnotes

- ¹ Sources, in addition to those specifically referenced: Insurance Institute for Highway Safety, Highway Loss Data Institute www.iihs.org (accessed February 2017); Jones MM, Bayer R. Paternalism & its discontents. Motorcycle helmet laws, libertarian values, and public health. *Am. J. Public Health* 97: 208-17 (2007); Neiman M. Motorcycle helmet laws: The facts, what can be done to jump-start helmet use, and ways to cap the damages. Available at SSRN: <https://ssrn.com/abstract=1006024>.
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