



STATUS REPORT

INSURANCE INSTITUTE
FOR HIGHWAY SAFETY

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RIDING IS RISKY FUN

Eight out of 10 motorcycle crashes result in injury or death compared with 2 out of 10 car crashes. More people are taking up riding, and more are dying in crashes. The upswing in motorcyclist deaths comes amid record lows for fatalities in car crashes, prompting the Institute and others to look harder for measures to stem the deaths among bikers. One answer might be to

equip more motorcycles with antilock brakes (see p.6). Insurance claims analyses by the Highway Loss Data Institute, an affiliate of the Insurance Institute for Highway Safety, underscore the real-world benefits of helmet laws that apply to all riders (see p.5) and raise questions about the safety benefits of state-mandated training for young riders (see p.7). First up, though, are the results of a new Institute survey that puts a fresh face on who's riding today.

Rider deaths topped 5,000 in 2008. This is more than in any year since the federal government began collecting fatal crash data in 1975. In contrast, fewer passenger vehicle occupants died in 2008 crashes than in any year since 1975 (national counts for 2009 aren't available yet). Motorcycle registrations increased to 7.7 million in 2008, up from 4.3 million in 2000, according to data provided by R. L. Polk and Company.

"It's a troubling trend," says Anne McCartt, Institute senior vice president for research. "No one wants to begrudge motorcyclists the opportunity to ride for fun or to get around town on a bike. As the number of new riders continues to increase, though, it's becoming more important than ever to lower the crash risk."

The Institute surveyed 1,818 riders by phone in 2009 to get a picture of nationwide trends in motorcycling, including respondents' views of helmets, helmet laws, and antilock brakes. Researchers also asked about travel patterns.

Helmet use: The National Highway Traffic Safety Administration estimates that 67 percent of motorcyclists in 2009 wore helmets that comply with federal safety standards. Seventy-three percent of riders the Institute surveyed said they always wear a helmet, and 9 percent said they often wear one. Five percent said they never do.

Riders of sport, supersport, and sport touring bikes were most likely to say they always wear a helmet. Riders 18-29 and those 50 and older were more likely to say they always ride helmeted, compared with motorcyclists in their 30s and 40s.

What would encourage more bikers to don helmets? Laws mandating them. Fifty-seven percent of respondents who don't always wear helmets said this would convince them.

Twenty states and the District of Columbia require helmets for all motorcyclists, 27 target helmet laws at younger riders, and 3 states (Illinois, Iowa, and New Hampshire) have no helmet laws at all. For a run-down, go to iihs.org/laws.

About half of the motorcyclists surveyed said they don't favor universal helmet laws, mainly because they want to choose for themselves. Still, 76 percent said helmets make riders safer. Those 18-29 years old were most likely to say they'd support universal laws, with 54 percent in this group favoring the mandate. Riders 18-29 also agreed very strongly that helmets enhance safety.

Universal helmet laws aren't popular, but they're effective. Nearly



all motorcyclists always wear helmets in states where the laws apply to all riders, but only about half do in states with no laws or laws that apply to some riders, usually younger ones.

“It’s encouraging that the youngest riders in our survey were the most likely to recognize the benefits of helmets and express support for universal laws because these riders typically are the biggest risk takers,” McCartt points out. “Baby boomers appear to be the hardest to reach, which is worrisome because they’re the biggest group of riders today.”

Baby boomers outnumbered Gen Y motorcycle owners 2 to 1 in 2008, according to the Motorcycle Industry Council, a non-profit trade group based in Irvine, California. The typical motorcycle owner is 43 years old, older than in 1998 when the age was 38 and a leap from the typical 24-year-old owner in the 1980s. As a result, the average age of fatally injured motorcycle riders climbed to 40 in 2008 from 37 in 2000 and 30 in 1990.

Antilock brakes: More than half of riders the Institute surveyed said they believe antilocks on motorcycles enhance braking safety, compared with conventional brakes. Fifty-four percent of respondents said they’d get antilocks on their next bikes.

When it comes to crashes, 43 percent said they’d been in at least one. Among riders who’d taken a spill, about half reported it to police, and just under half said they notified their insurer. Sixty-four percent said they didn’t require medical treatment. Nearly all riders said their bikes are registered and insured.

Often motorcycle crashes are blamed on other vehicles, not riders, so it’s noteworthy that almost two-thirds of the reported crashes involved a single vehicle, and it was the motorcycle.

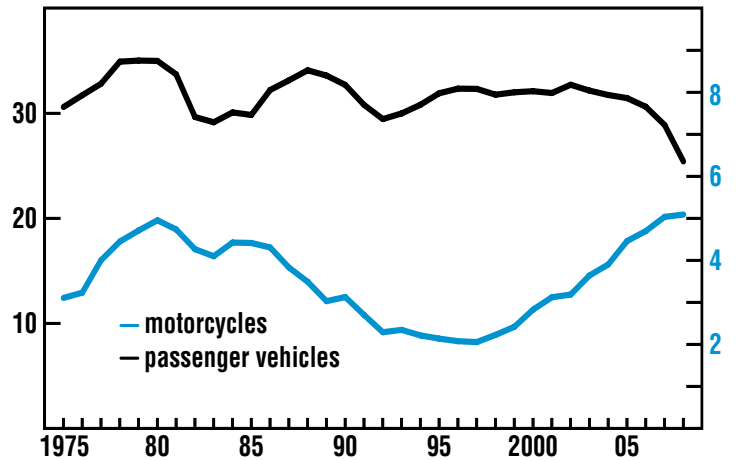
Patterns of motorcycle riding: Recreation is the top reason people cite for riding, according to the Motorcycle Industry Council. However, this group says many riders now use motorcycles for everyday transportation, not just weekend fun.

“This may be because of high fuel costs, environmental concerns, convenience, or a combination of factors,” McCartt says.

The Institute’s survey noted the same trends. On average, 55 percent of riding is on weekends. Twenty-three percent of respondents said a motorcycle is the vehicle they drive the most. Fifty-seven percent said they often or sometimes ride motorcycles to work or school. The percentage is higher among 18-29 year-olds, and these riders were more likely than older motorcyclists to say they ride after dark. On the other hand, a higher proportion of older riders than younger ones said they take more overnight trips. Older riders also reported driving more total miles.

Looking at travel patterns by bike type, the survey found that sport touring riders are the most likely to ride for basic transportation. Touring and sport touring riders more often take long trips, possibly because these motorcycles are built for comfort and cruising long distances. Riders of touring, sport, and super-sport bikes said they frequently ride after dark, and it’s worth noting that the supersports are about average in terms of miles driven even though they have very high fatal crash rates.

PASSENGER VEHICLE OCCUPANT DEATHS VERSUS MOTORCYCLIST DEATHS (THOUSANDS), 1975-2008



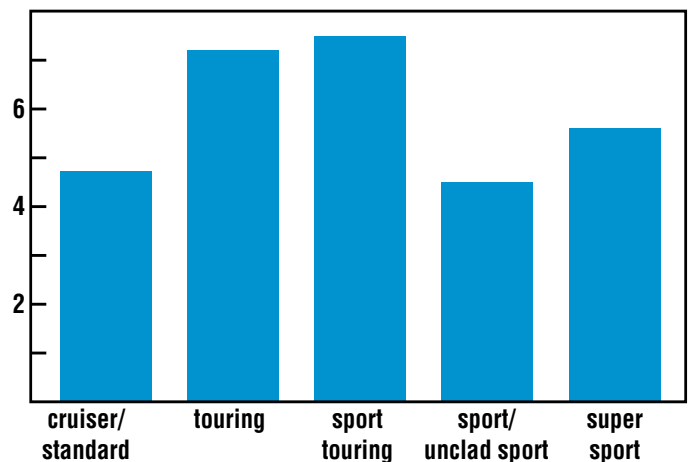
HOW OFTEN DO YOU WEAR A HELMET?

	Always	Often	Sometimes	Rarely/never
State law requires all riders to wear helmet	94%	4%	2%	—
State law requires some riders to wear helmet	57%	12%	11%	20%
State with no helmet requirement	53%	15%	11%	21%

WHAT WOULD ENCOURAGE RIDERS TO WEAR HELMETS ALL THE TIME?

If law required helmet	57%
Nothing would encourage	27%
If helmet were more comfortable	9%
If believed that helmet would reduce head injury in a crash	8%

AVERAGE MILES (THOUSANDS) ON MOTORCYCLES DURING THE PAST YEAR, BY MOTORCYCLE TYPE



NEW JERSEY LEADS WAY WITH STRONG TEEN LICENSING LAWS

Teenagers in New Jersey have to wait until they're 17 to get their licenses, and then they have to adhere to tough restrictions designed to help improve their driving while minimizing risks. These policies are paying off. A new AAA Foundation for Traffic Safety study reveals significant reductions in the crash rates of 17 and 18 year-olds plus elimination of most crashes of 16 year-olds.

Most states license at 16, 16-1/2, or somewhere in between, and a few license even younger. Only New Jersey has had a law in place for decades that puts off licensure until 17, which is more in line with policies in countries other than the United States.

New Jersey's graduated licensing program, begun in 2001, puts this state among 34 with laws that meet or exceed most Institute benchmarks for an optimal program except that it notably lacks a nighttime driving provision that begins at 9 or 10 pm instead of later. States with such programs experience both lower fatal crash rates among teen drivers and lower rates of insurance claims, compared with states with weaker laws.

Only New Jersey applies all of its graduated licensing provisions to beginners younger than 21. Teens who enter the licensing systems in nearly every other state before they're 18 graduate from the restrictions once they turn 18, and the laws in most states don't apply at all to older beginners.

Beginners in New Jersey spend at least 6 months in the learner's stage and must be 17 to get provisional licenses. Nighttime and passenger restrictions apply for a year, effectively making 18 the minimum age for an unrestricted license. For people 17-20, both the learner and provisional stages have nighttime driving restrictions and passenger limits. Cellphones and other electronic devices are banned for beginners of all ages, and all occupants must use safety belts.

"New Jersey shows that licensing later and then restricting driving by beginners pro-

duces safer drivers who are less prone to crashing," says Allan Williams, former Institute chief scientist and lead author of the AAA report. "Teenagers accrue an extra year of maturity before getting behind the wheel and accumulate on-the-road experience in more favorable conditions. It's the right combination."

Williams' study is first to take a comprehensive look at the combined effects of delayed licensure and a graduated system that applies to all beginners. His research team compared crash rates among various age groups before and after graduated licensing began in 2001. Data are from the federal Fatality Analysis Reporting System and New Jersey records of police-reported crashes.

Crash rates among drivers 17 years old, the main beneficiaries of graduated licensing, fell 16 percent in New Jersey after the law took effect, relative to crashes of drivers 25-59 years old. Fatal crashes per 100,000 population declined 25 percent, and injury crashes per 1,000 population fell 14 percent. Nighttime crashes of 17 year-olds tumbled 44 percent, compared with drivers 25-59, after the 2001 law banned beginners from driving between midnight and 5 am. Before this law, New Jersey ranked 45th among 51 jurisdictions in terms of 17 year-olds' fatal crash rates. After the law, the ranking improved to 21st. Williams points out that 15 of the 20 states ranking ahead of New Jersey subject some or all of their 17 year-olds to graduated licensing.

While other states except Maryland don't touch 18 year-olds with driving restrictions, New Jersey's law benefits drivers this age. The overall crash rate of 18 year-olds fell 10 percent after the 2001 law. Injury crashes also fell 10 percent, while crashes among 16-year-old drivers were largely eliminated.

A concern about postponing licensure until 17 has been that this just delays the risk associated with beginners, offsetting any safety benefits of later licensing by elevat-

ing 17 year-olds' crash rates, but this hasn't been the case in New Jersey.

Now the state's legislators are strengthening restrictions on nighttime driving and passengers. Beginning May 1, the nighttime restriction will start at 11 pm instead of midnight, and beginners won't be allowed to drive with passengers other than their dependents. Another new restriction involves reflective decals on the license plates, both front and rear, of vehicles driven by people who are younger than 21. The idea is to help police enforce graduated licensing restrictions by identifying learners and provisional licensees.

"Evaluation of New Jersey's Graduated Licensing Program" by A. F. Williams et al., appears in the Feb. 22, 2010, issue of *Traffic Injury Prevention*.



HELMET USE LAWS THAT APPLY TO ALL RIDERS TRIM LIKELIHOOD OF MOTORCYCLE CRASH INJURY

Motorcyclists in states that require all riders to wear helmets are less likely to file insurance claims for medical treatment after collisions, compared with riders in states without helmet laws or where the laws apply to some but not all riders. This is the main finding of a new study by the Institute-affiliated Highway Loss Data Institute (HLDI).

Twenty states require all motorcyclists to wear helmets, 27 target the laws at younger riders, and 3 states (Illinois, Iowa, and New Hampshire) don't have helmet laws at all. HLDI compared the risk of injury claims, given collision claims, for riders in these groups of states, finding the lowest risk under the universal laws. Injury risk was 3 percent higher in states with laws applying to some riders and 6 percent higher in states without helmet laws. Injury risk was 4 percent higher among riders older than 21 in states where these riders aren't required to wear helmets.

The study includes collision and medical payment claims data associated with 2001-09 model motorcycles involved in crashes in all but a few states during 2002-09. Collision coverage, which insures against damage to a motorcycle, generally applies when a rider is at fault. Medical payment covers the medical costs of injured riders up to policy limits. Overall, more than half of collision claims resulted in associated medical payment claims. HLDI's database doesn't include

HELMET USE IS VIRTUALLY UNIVERSAL IN STATES THAT REQUIRE HELMETS ON ALL RIDERS. THE USE RATE IS ABOUT 50 PERCENT WITHOUT SUCH LAWS.

information about the types of injuries associated with such claims or whether riders were wearing helmets when they crashed.

Helmets are the principal countermeasure for reducing head injuries, the leading cause of death among unhelmeted riders. They reduce the likelihood of death by 37 percent. Without them, motorcyclists are 3 times as likely as helmeted riders to suffer traumatic brain injuries. Yet many motorcyclists refuse to wear a helmet if it's not illegal to ride without one.

Nearly all riders wear helmets in states with universal laws, but requiring helmets on some riders doesn't boost use rates or rider safety nearly as much. Helmet use is about half in states that don't have helmet laws or that apply their laws only to younger riders.

For a copy of "Helmet use laws and medical payment injury risk for motorcyclists with collision claims," write: Publications, Highway Loss Data Institute, 1005 North Glebe Rd., Arlington, VA 22201; or email publications at iihs.org.

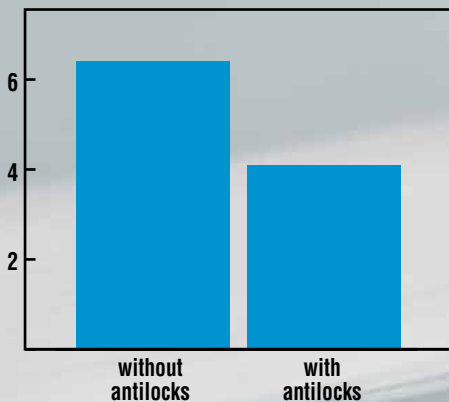


ANTILOCK BRAKES ON MOTORCYCLES PREVENT CRASHES

The best motorcycle crash is the one that never happens. One technology designed to reduce the chance of crashing is antilock braking. The Institute first reported on the effectiveness of motorcycle antilocks in 2008 (see *Status Report*, Oct. 22, 2008; on the web at iihs.org). Now 2 new studies, one by the Institute and one by the affiliated Highway Loss Data Institute (HLDI), provide more evidence that antilocks reduce fatal crash risk and lower insurance losses.

Stopping a motorcycle is trickier than stopping a car. For one thing, the front and rear wheels typically have separate brake controls. In an emergency, a rider faces a split-second choice to either brake hard,

FATAL CRASHES
PER 10,000 MOTORCYCLE REGISTRATIONS,
WITH AND WITHOUT ANTILOCKS, 2003-08



which can lock the wheels and cause an overturn, or hold back on braking and risk running headlong into the emergency. This is when antilocks can help by reducing brake pressure when they detect impending lockup and then increasing the pressure again when traction is restored. Brake pressure is evaluated multiple times per second, so riders may brake fully without fear of locking up.

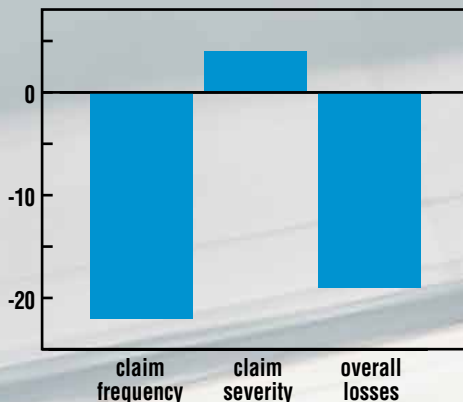
Antilocks won't prevent every motorcycle crash. They won't help a rider who's about to be struck from behind, for exam-

ple. But the new studies indicate that antilocks reduce crashes overall and save lives.

Institute researchers compared the fatal crash experience of antilock-equipped motorcycles against their nonantilock counterparts during 2003-08. The main finding is that motorcycles with antilocks versus without are 37 percent less likely to be in fatal crashes per 10,000 registered vehicle years. Bolstering this finding is a separate HLDI analysis of insurance claims filed for damage to motorcycles. Bike models with antilocks have 22 percent fewer claims for damage per insured vehicle year than the same models without antilocks.

Drivers younger than 25 have the highest estimated claim frequencies. Where motorcyclists ride also affects claims. The frequency of claims for crash damage to bikes is 9 percent higher in urban areas with heavy traffic than in moderately congested

INSURANCE CLAIMS
PERCENT REDUCTIONS IN COLLISION LOSSES
FOR 2003-08 MODELS WITH ANTILOCKS



locales. There were 13 percent fewer claims in the least populated areas than in medium density ones. The effects of antilocks on claims were estimated only after controlling for these and other factors.

Antilocks are gaining traction among motorcycle manufacturers and wider acceptance among riders. More than half of motorcycle owners recently surveyed by the Institute said they'd get antilocks on their next bike. Buyers can find them now on at least 60 new models (go to iihs.org for a list).

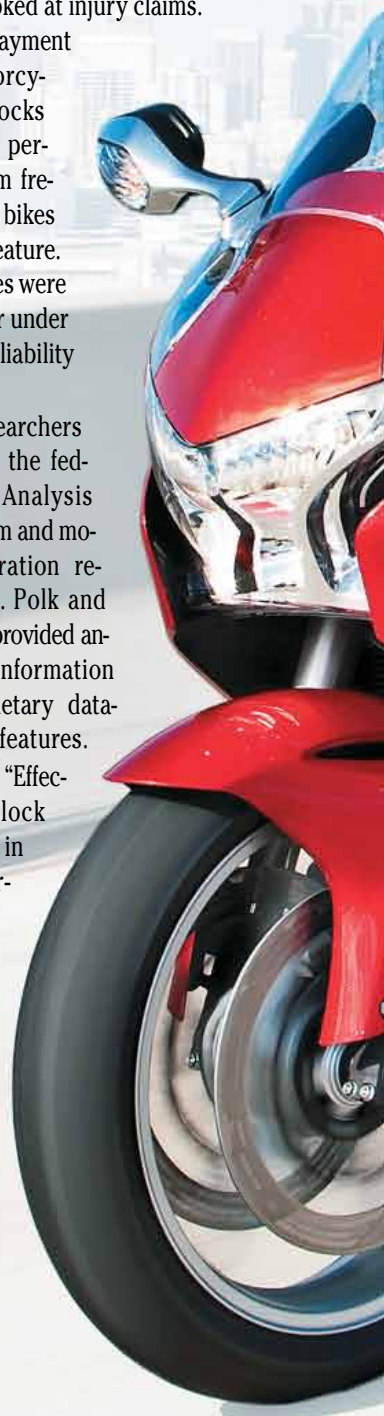
"Motorcycle antilocks do make a difference," says Institute president Adrian Lund, who also is president of HLDI. "They help make traveling on 2 wheels less risky by reducing the chance of overturning a bike and crashing. Passenger vehicles still are safer, but if you're going to ride we'd recommend getting a motorcycle with antilocks."

HLDI also looked at injury claims.

Under medical payment coverage, motorcycles with antilocks registered 30 percent lower claim frequencies than bikes without this feature. Claim frequencies were 33 percent lower under bodily injury liability coverage.

Institute researchers used data from the federal Fatality Analysis Reporting System and motorcycle registration records from R. L. Polk and Company. HLDI provided antilock feature information from its proprietary database of vehicle features.

For a copy of "Effectiveness of antilock braking systems in reducing motorcycle fatal crash rates" by E.R. Teoh or a HLDI special report on motorcycle antilock braking systems, write: Publications, Insurance Institute for Highway Safety, 1005 North Glebe Rd., Arlington, VA 22201; or email publications@iihs.org.



TRAINING FAILS TO REDUCE CRASH RISK OF YOUNG RIDERS

In many US states, young beginners have to take a training course before they become eligible for a license to drive a motorcycle.

“Motorcycling requires unique skills, and training probably is the right way for most riders to learn them,” says Adrian Lund, president of both HLDI and the affiliated Insurance Institute for Highway Safety. “Just don’t count on it to reduce crashes or substitute for laws requiring helmet use.”

The analysis looks at collision losses in 4 states (California, Florida, Idaho, and Oregon) that require rider education for license applicants younger than 21, compared with losses in 28 states without training requirements. The study doesn’t include data from 13 states that require training for riders younger than 18 plus 1 state that mandates it for riders younger than 16 because sample sizes are too small.

For a copy of “Motorcycle collision coverage claims in states with required motorcycle rider training,” write: Publications, Highway Loss Data Institute, 1005 North Glebe Rd., Arlington, VA 22201; or email publications at iihhs.org.

***DON'T COUNT ON
MOTORCYCLE
TRAINING COURSES
TO REDUCE CRASHES
OR TO SUBSTITUTE FOR
LAWS REQUIRING ALL
RIDERS TO WEAR HELMETS.
INSURANCE CLAIMS FOR
MOTORCYCLE CRASH DAMAGE
ARE FILED MORE FREQUENTLY
IN STATES THAT REQUIRE
COMPLETION OF TRAINING
COURSES BEFORE BECOMING
ELIGIBLE FOR A LICENSE TO
DRIVE A MOTORCYCLE.***

The intent is to reduce crashes, but a new analysis of insurance claims indicates the opposite may be true. Researchers at the Highway Loss Data Institute (HLDI) analyzed motorcycle claims under collision coverage to see if crash risk is lower in states that require training for riders younger than 21, compared with states that don’t require any training. The main finding is that the frequency of insurance collision claims for riders this age is 10 percent higher, not lower, where training is required. Although this difference isn’t statistically significant, it contradicts the notion that motorcycle training courses reduce crashes. A potential explanation is that riders in some states are fully licensed once they finish training. This might shorten the permit period so that riders end up with full licenses earlier than if training weren’t mandated.



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