

# HIGHWAY LOSS DATA INSTITUTE

## NEWS RELEASE

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VNR: Thurs. 11/17/2011 10:30-11 a.m. EST (C) GALAXY 19/Trans. 8 (dl3860H)  
repeat 1:30-2 p.m. EST (C) GALAXY 19/Trans. 8 (dl3860H); dedicated

### HYBRID MODELS HAVE LOWER INJURY ODDS THAN THEIR CONVENTIONAL COUNTERPARTS

ARLINGTON, VA — Hybrids have a safety edge over their conventional twins when it comes to shielding their occupants from injuries in crashes, new research by the Highway Loss Data Institute (HLDI), an affiliate of the Insurance Institute for Highway Safety, shows. On average, the odds of being injured in a crash are 25 percent lower for people in hybrids than people traveling in nonhybrid models.

"Weight is a big factor," says Matt Moore, HLDI vice president and an author of the report. "Hybrids on average are 10 percent heavier than their standard counterparts. This extra mass gives them an advantage in crashes that their conventional twins don't have." He notes that other factors, such as how, when, and by whom hybrids are driven, also may contribute. Researchers included controls to reduce the impact these differences may have had on the results.

The new finding is more good news for green-minded drivers who don't want to trade safety for fuel economy. Not so long ago, car buyers had to choose between the two because fuel-efficient cars tended to be smaller and lighter. Now, consumers have more options than ever when it comes to picking an environmentally friendly — and crashworthy — vehicle.

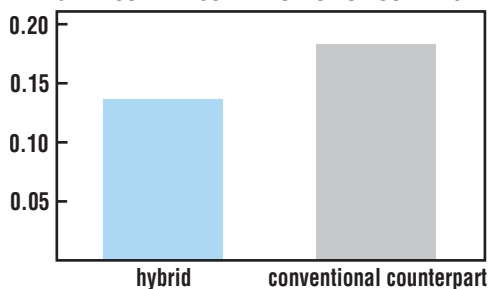
"Saving at the pump no longer means you have to skimp on crash protection," Moore says.

In the study, HLDI estimated the odds that a crash would result in injuries if people were riding in a hybrid versus the conventional version of the same vehicle. The analysis included more than 25 hybrid-conventional vehicle pairs, all 2003-11 models, with at least 1 collision claim and at least 1 related injury claim filed under personal injury protection or medical payment coverage in 2002-10.

— MORE —

Collision coverage pays to repair or replace an at-fault driver's vehicle after a crash with an object or another vehicle. Personal injury protection, or PIP, pays medical expenses for injuries insured drivers and other people in their vehicles sustain in a crash, no matter who is at fault in the collision. Medical

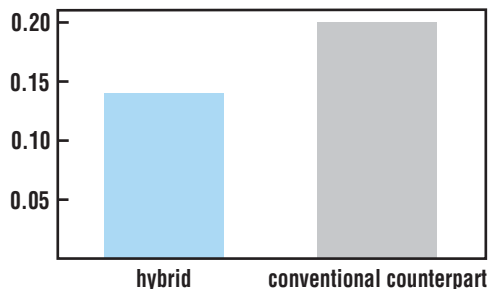
**ESTIMATED INJURY ODDS UNDER COLLISION & PERSONAL INJURY PROTECTION COVERAGE**



payment, or MedPay, covers treatment costs when insured drivers or their passengers are hurt in crashes when the driver is at fault. PIP coverage is sold in states with no-fault insurance systems, and MedPay coverage is sold in tort states.

Hybrids' injury odds were 27 percent lower than their standard counterparts for collision claims with a related PIP claim and 25 percent lower than their twins for collision claims with a related MedPay claim.

**ESTIMATED INJURY ODDS UNDER COLLISION & MEDICAL PAYMENT COVERAGE**



**Crash physics:** It's well known that size and weight influence injury likelihood. In a collision involving two vehicles that differ in size and weight, the people in the smaller, lighter vehicle will be at a disadvantage. The bigger, heavier vehicle will push the smaller, lighter one backward on impact. This means less force on people in the heavier vehicle and more on the people in the lighter one. Greater force

means greater risk, so people in the smaller, lighter vehicle are more likely to be injured. Even in single-vehicle crashes, heavier vehicles have an advantage because they are more likely to move, bend, or deform objects they hit.

Even with advances in occupant protection, larger vehicles still are safer choices than smaller ones. That's why downsizing vehicles to improve fuel efficiency has traditionally resulted in safety trade-offs. The trend among automakers nowadays is to boost fuel economy by designing more efficient internal combustion engines and by adding hybrids to their fleets.

Although hybrids share the same footprint and structure as their conventional counterparts, they outweigh them because of the added heft of battery packs and other components used in dual-power systems. At about 3,600 pounds, a hybrid Honda Accord midsize sedan, for example, can weigh as much as 480 pounds more than a conventional Accord. A hybrid Toyota Highlander, a midsize SUV, weighs about 4,500 pounds, compared with about 4,170 pounds for the conventional Highlander.

The Toyota Prius and Honda Insight were excluded from the study because they are only sold as hybrids. The analysis controlled for calendar year, rated driver age and gender, marital status, vehicle density (number of registered vehicles per square mile), garaging state, vehicle series, and vehicle age.

**Hybrids and pedestrians:** A separate analysis by HLDI shows that hybrids may be as much as 20 percent more likely to be involved in pedestrian crashes with injuries than their conventional twins.

Analysts examined how frequently injury claims were filed for 17 hybrids and their nonhybrid counterparts when there was no related collision or property damage. Studied vehicles included 2002-10 full hybrid models and their standard twins during 2004-2010 calendar years, totaling 25,382 bodily injury liability claims and 2.9 million years of exposure.

Bodily injury liability coverage insures against medical, hospital, and other expenses for injuries that at-fault drivers inflict on occupants of other vehicles or others on the road.

Claim frequencies were defined as claims per 1,000 insured vehicle years (an insured vehicle year is 1 vehicle insured for 1 year or 2 for 6 months each, etc.). The analysis controlled for calendar year, rated driver age, rated driver gender, marital status, risk, registered vehicle density, garaging state, vehicle series, and vehicle age.

"When hybrids operate in electric-only mode pedestrians can't hear them approaching," says Moore, "so they might step out into the roadway without checking first to see what's coming."

It's a problem that's cropped up as hybrids have become more common, and it's one the National Highway Traffic Safety Administration is working to

address. Earlier this year Congress gave the agency three years to come up with a requirement for equipping hybrids and electric models with sounds to alert unsuspecting pedestrians.

Moore points out that HLDI can't definitively tell from the claims data that a crash involved a pedestrian. Likewise, some pedestrian crashes may have been unintentionally excluded. For example, a crash in which a person was struck and injured and the vehicle also was damaged would have been omitted because a collision claim would have been filed for the damaged vehicle. However, a sample of the claims studied suggests that these are mostly pedestrian injury claims.

### **End 4-page news release on hybrid vehicles**

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