

INSURANCE INSTITUTE FOR HIGHWAY SAFETY

NEWS RELEASE

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Contact: David Zuby at 434/985-4600 (office) or at 434/227-9028 (cell)

Russ Rader at 703/247-1500 (office) or at 202/257-3591 (cell)

VNR: Thurs. 5/26/2011 10:30-11 am EDT (C) GALAXY 19/Trans. 15 (dl4000V)
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NEW CRASH TESTS: SMALL CARS IMPROVE AND THE TOP PERFORMERS ALSO ARE FUEL SIPPERS

ARLINGTON, VA — Six of 13 small cars recently evaluated by the Insurance Institute for Highway Safety earn the *TOP SAFETY PICK* award, and none earns a poor rating in any of 4 tests. This is a turnaround from a few years ago when small cars struggled to earn top safety ratings. The new tests include hybrids and gasoline-only models that are among the most fuel-efficient vehicles available in the U.S. market.

The ratings are based on performance in front, side, rollover, and rear impact evaluations. Cars that earn the top rating of good in each test and have available elec-

tronic stability control (ESC) qualify for *TOP SAFETY PICK*. Winners are the 2012 Ford Focus and Honda Civic, along with the 2011 Hyundai Elantra, Lexus CT 200h hybrid, Nissan Juke, and Toyota Prius hybrid. The Civic, CT 200h, Elantra, Focus, and Prius have at least one version with a government fuel economy rating of at least 40 miles per gallon on the high-

SIX NEW SMALL CAR WINNERS

Ford Focus (2012)
Honda Civic 4-door (2012)
Hyundai Elantra
Lexus CT 200h
Nissan Juke
Toyota Prius



way. The Dodge Caliber, Honda CR-Z and Insight hybrids, Nissan Sentra and Versa, Scion xD, and Suzuki SX4 also were rated but didn't earn *TOP SAFETY PICK*.

"The list of cars with the best fuel economy now includes those with the highest crash test ratings in their class, too," says David Zuby, the Institute's chief research officer. "At a time of high gasoline prices, consumers have never had a bigger selection of small cars that earn *TOP SAFETY PICK*."

— MORE —

WINNERS THAT GET AT LEAST 40 MPG ON THE HIGHWAY

Small cars

Chevrolet Cruze Eco, 42 mpg
Ford Focus SFE, 40 mpg
Honda Civic HF 41 mpg; hybrid, 44 mpg
Hyundai Elantra, 40 mpg
Lexus CT 200h, 40 mpg
Toyota Prius, 48 mpg
Volkswagen Golf TDI, 42 mpg

Minicar

Ford Fiesta SFE, 40 mpg

Plug-in electrics

Chevrolet Volt, 90 mpg equivalent
Nissan Leaf, 92 mpg equivalent

More safety in smaller packages: The Institute began awarding *TOP SAFETY PICK* for the 2006 model year with less stringent criteria than today. Then only 3 small cars earned the designation (Honda Civic, Saab 9-2X, and Subaru Impreza). Now 22 small models, including those the Institute tested previously, earn the award with tougher requirements including a roof strength test, an ESC requirement to help drivers avoid crashes, and a higher bar for rear impact protection.

Still, Zuby points out that small, lightweight cars "don't protect their occupants as well as bigger, heavier ones. Even though fuel prices sometimes defy gravity, the laws of physics always are in effect for cars. That's why it's im-

portant that the crashworthiness designs of smaller cars be as good as possible. The new ratings demonstrate that small cars are much safer than they used to be."

In the latest group, the Toyota Prius hybrid is a *TOP SAFETY PICK* and also one of the most fuel-efficient cars on the market, with estimates of 51 miles per gallon in the city and 48 mpg on the highway. Altogether, 10 small and minicar models with government fuel economy ratings of at least 40 mpg on the highway also earn *TOP SAFETY PICK*.

New cars safer than old versions: Small cars used to have the least safety equipment. Now all have standard side airbags, and in this group all but the Caliber, SX4, and Versa have standard ESC for preventing many kinds of crashes. Auto manufacturers moved quickly to put ESC on cars and SUVs after research by the Institute and the National Highway Traffic Safety Administration demonstrated the effectiveness of this feature. An Institute study found that ESC reduces fatal single-vehicle crashes by up to 50 percent. The government will require standard ESC on all new vehicles, starting with 2012 models.

Small cars also are more crashworthy. In 1997, when the Institute first put small cars through its then-new 40 mph frontal offset test, none of the 11 small cars earned the top rating of good, and 3 were poor. The first results for small cars in the Institute's side test in 2005 were no more encouraging — none was good, and 14 of the 16 models evaluated earned the lowest rating of poor.

"Each time we've introduced a new test, automakers have stepped up and improved designs," Zuby says. "Now it's rare for any vehicle to earn less than a good rating in front, side, or rear tests, and automakers are working on rollover protection."

The Hyundai Elantra's results show how vehicle designs have improved. The 2001-03 Elantra was rated poor for frontal crash protection. A late-deploying airbag contributed to high forces on the driver dummy's head and neck. Forces on both lower legs indicated that fractured bones and a foot injury would be possible in a real-world crash of similar severity.

The 2001-06 Elantra also earned a poor side rating, even with standard side airbags. The structure of the older Elantra allowed a lot of intrusion into the occupant compartment, and driver dummy injury measures indicated that rib fractures, internal organ injuries, and a broken left leg would be possible in a real-world crash. ESC wasn't available on this version of the Elantra, even as an option.

"The Elantra has gone from one of our lowest rated small cars to a *TOP SAFETY PICK*, and ESC is now a standard feature," says Zuby. "The big things the automakers have done to improve crashworthiness are designing better front crush zones to manage crash energy, stronger occupant compartments to limit intrusion, and stronger roofs to better protect people in rollovers."

Acceptable ratings in one or more evaluations kept 5 of the 13 small cars off the *TOP SAFETY PICK* list. That was the case for the Honda CR-Z and Insight, Nissan Versa and Sentra, and Scion xD. The Suzuki SX4 is rated marginal for rollover and rear protection. The Dodge Caliber is rated marginal for side protection, while it is acceptable in the rollover test. None of the cars recently tested earn a poor rating in any evaluation.

How vehicles are evaluated: The Institute's frontal crashworthiness evaluation is based on results of a 40 mph frontal offset crash test. Each vehicle's overall evaluation is based on measurements of intrusion into the occupant compartment, injury measures recorded on a 50th percentile male Hybrid III dummy in the driver seat, and analysis of slow-motion film to assess how well the restraint system controlled dummy movement during the test.

The side evaluation is based on performance in a crash test in which the side of a vehicle is struck by a barrier moving at 31 mph. The barrier represents the front end of a pickup or SUV. Ratings reflect injury measures recorded on 2 instrumented SID-IIIs dummies representing a 5th percentile woman, assessment of head protection countermeasures, and the vehicle's structural performance during the impact.

In the roof strength test, a metal plate is pushed against one side of a roof at a displacement rate of 0.2 inch per second. To earn a good rating for rollover protection, the roof must withstand a force of 4 times the vehicle's weight before reaching 5 inches of crush. This is called a strength-to-weight ratio.

Rear crash protection is rated according to a 2-step procedure. Starting points for the ratings are measurements of head restraint geometry — the height of a restraint and its horizontal distance behind the back of the head of an average-size man.

Seat/head restraints with good or acceptable geometry are tested dynamically using a dummy that measures forces on the neck. This test simulates a collision in which a stationary vehicle is struck in the rear at 20 mph. Seats without good or acceptable geometry are rated poor overall because they can't be positioned to protect many people.

End 4-page news release on small car crash tests

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ATTACHMENT: CRASHWORTHINESS EVALUATIONS, p.1 of 1

SMALL CARS		FRONT EVALUATION	SIDE EVALUATION	ROLLOVER EVALUATION	REAR CRASH PROTECTION	ELECTRONIC STABILITY CONTROL
	FORD FOCUS front, side, rollover, and rear: 2012 models	G	G	G	G	standard
	HONDA CIVIC 4-door front, side, rollover, and rear: 2012 models	G	G	G	G	standard
	HYUNDAI ELANTRA front, side, and rollover: 2011 models rear: 2011 models mfg. after March 2011	G	G	G	G	standard
	LEXUS CT 200h front, side, rollover, and rear: 2011 models	G	G	G	G	standard
	NISSAN JUKE front, side, rollover, and rear: 2011 models	G	G	G	G	standard
	TOYOTA PRIUS front, side, and rear: 2010-11 models rollover: 2011 models mfg. after December 2010	G	G	G	G	standard
	HONDA CR-Z front, side, rollover, and rear: 2011 models	G	G	A	G	standard
	HONDA INSIGHT front, rollover, and rear: 2010-11 models side: 2011 models	G	G	A	G	standard
	NISSAN VERSA front, rollover, and rear: 2007-11 models side: 2011 models	G	A	A	G	optional
	SCION xD front, side, rollover, and rear: 2008-11 models	A	G	G	G	standard
	NISSAN SENTRA front and rollover: 2007-11 models side: 2011 models rear: 2010-11 models	G	A	A	A	standard
	SUZUKI SX4 front, side, rollover, and rear: 2007-11 models	G	G	M	M	optional
	DODGE CALIBER front, side, and rollover: 2007-11 models rear: 2010-11 models	G	M	A	G	optional
All cars except the Dodge Caliber are equipped with at least standard head-protecting side curtain and front seat-mounted side torso airbags. The Caliber was tested without its optional side torso airbags.						

G	GOOD	M	MARGINAL
A	ACCEPTABLE	P	POOR

FOR MORE DETAILED CRASHWORTHINESS EVALUATIONS, GO TO WWW.IIHS.ORG

FRONTAL RATINGS are based on performance in a 40 mph frontal offset crash test into a deformable barrier. **CAUTION:** Frontal ratings cannot be compared across vehicle type and weight categories because the kinetic energy involved in the frontal test depends on the speed and weight of the test vehicle, and the crash is more severe for heavier vehicles. Given equivalent frontal ratings for heavier and lighter vehicles, the heavier vehicle typically will offer better protection in real-world crashes.

SIDE RATINGS are based on performance in a crash test in which the side of the vehicle is struck by a moving deformable barrier with a front end that represents the front of a typical SUV or pickup. The moving barrier strikes the vehicle at 31 mph in a perpendicular impact. **NOTE:** Side ratings can be compared across vehicle type and weight categories.

ROLLOVER RATINGS are based on a roof strength test, in which a metal plate is pushed against 1 side of a roof at a displacement rate of 0.2 inch per second. To earn a good rating for rollover protection, the roof must withstand a force of 4 times the vehicle's weight before reaching 5 inches of crush. This is called a strength-to-weight ratio. **NOTE:** Rollover ratings can be compared across vehicle type and weight categories.

REAR CRASH PROTECTION RATINGS are based on a two-step evaluation. In the first step restraint geometry is rated. Seats with good or acceptable geometric ratings then are subjected to a dynamic test. Seats with head restraints rated marginal or poor, based on geometry, aren't tested because they cannot protect taller occupants.