INSURANCE INSTITUTE
FOR HIGHWAY SAFETY

NEWS RELEASE

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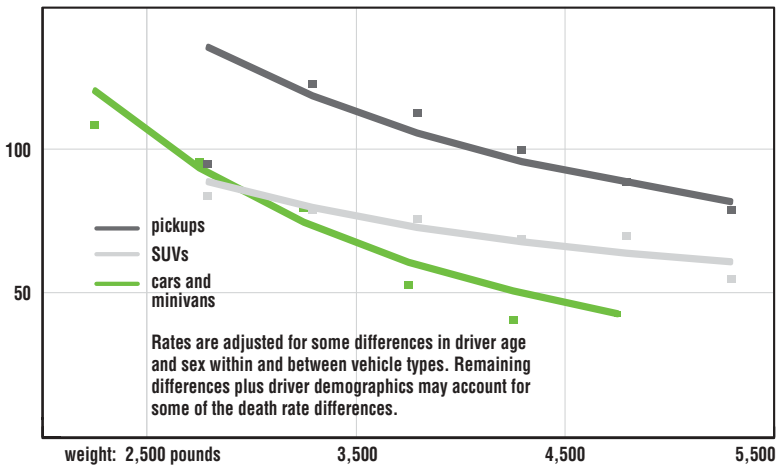
FIRST CRASH TESTS OF MINICARS

NISSAN VERSA EARNS THE HIGHEST OVERALL RATINGS; THREE MINICARS EARN POOR RATINGS IN SIDE TESTS

ARLINGTON, VA — For the first time, the Insurance Institute for Highway Safety has tested the smallest vehicles sold in the US market, which gain popularity as fuel prices rise. Now these cars are rated for comparison of occupant protection in front, side, and rear crashes. The Nissan Versa earns good ratings in all three tests. Two other cars earn good ratings in front and side but not rear tests (see attached ratings, which include the previously tested Mini Cooper; this car is being redesigned, and the Institute will test the new model when it's available in 2007).

Crash test results indicate which vehicles in each weight category afford the best protection in real-world crashes, and this round of tests reveals big differences among the smallest cars. But results of real crashes show that any car that's very small and light isn't the best choice in terms of safety. Driver death rates in minicars are higher than in any other vehicle category. They're more than double the death rates in midsize and large cars.

DRIVER DEATHS PER MILLION REGISTERED VEHICLES, BY VEHICLE WEIGHT, 2000-04 MODELS DURING 2001-05



"People traveling in small, light cars are at a disad-

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vantage, especially when they collide with bigger, heavier vehicles. The laws of physics dictate this," says Institute president Adrian Lund. Death rates in single-vehicle crashes also are higher in smaller vehicles than in bigger ones.

Minicars weigh about 2,500 pounds or less. A typical small car weighs about 300 additional pounds, and midsize cars weigh about 800 pounds more than a minicar. A midsize SUV weighs 4,000 pounds or more, exceeding the weight of a minicar by at least 60 percent. In every vehicle category (car, SUV, or pickup truck), the risk of crash death is higher in the smaller, lighter models.

"Despite the safety trade-off, more consumers are buying minicars," Lund says. "This is why we tested them. We want consumers to use the ratings to choose the most crash-worthy designs among the smallest cars."

Versa is best: Bigger than the other cars the Institute tested this time around, the Nissan Versa is classified a small car, the next size class up from minis. But this car is marketed to compete with minicars, so the Institute is releasing its ratings along with those of competing models.

The Versa is the only car in this round to earn the highest rating of good in all three tests. In the frontal test, its structure held up well, minimizing intrusion into the space around the driver dummy. Most injury measures were low. In the side test, the standard curtain-style airbags prevented contact between the striking barrier and the heads of the crash test dummies (Nissan is modifying the side air-bags in cars built after November 2006 to improve protection in side impacts).

The Institute's side test is especially challenging for small cars because the barrier that strikes the test vehicle represents the front end of a pickup truck or SUV. Side airbags designed for head protection are crucial because the barrier crashes into the side of the car right at the head level of the two dummies that are positioned in the driver seat and in the rear seat behind the driver.

"The Versa is bigger than the other cars we tested, so it has size and weight on its side as well as good test results," Lund says.

The Honda Fit with standard side airbags and the Toyota Yaris equipped with optional side airbags also earn good ratings in front and side tests. However, rear protection isn't rated good. The Yaris is rated marginal for occupant protection in rear impacts, and the Fit's rear rating is poor.

The Institute conducted two frontal tests of the Fit. In the first test the frontal airbag deployed too early, allowing high forces on the driver dummy's head. Honda is modifying the airbags in cars built after November 2006 and says it will recall cars built earlier. In the second test of a Fit with the design change, the frontal airbag deployed properly, and injury measures recorded on the dummy's head were low. The published rating (see attached ratings) is for vehicles with the design change.

Side tests trip up four cars: The Hyundai Accent, Scion xB, and the Toyota Yaris without its optional side airbags earn poor ratings in the side test. The Chevrolet Aveo is marginal. The Accent and Aveo didn't perform well even though they have standard side airbags. The Aveo's front seat-mounted side airbags did a good job of protecting the driver dummy's head, but this car's structural performance was marginal. Intrusion into the occupant compartment led to high forces on the driver dummy's pelvis. There's no side airbag protection for rear-seat passengers, and the barrier struck the dummy's head.

The Accent's structural performance in the side test also was marginal. Curtain-style airbags in front and rear seats provided good head protection, but measures recorded elsewhere on the driver dummy indicate a motorist in a similar real-world crash would be likely to sustain internal organ injuries, broken ribs, and a fractured pelvis.

Overall the Accent is the lowest rated car in this group. The rank order takes into account all three ratings (front, side, and rear).

Another poor performer in the side test is the Scion xB. Side airbags aren't available, and the xB's side structure didn't do a good job of resisting intrusion during the impact. The barrier intruded into the car and struck the driver dummy's head. Measures indicate the likelihood of brain injuries, serious neck injuries, and a fractured pelvis in a real-world crash of similar severity.

"The Scion's poor side rating and marginal rating in the rear test are especially disappointing because this car is marketed to young drivers, who have the highest crash rates and thus the greatest need for crashworthy vehicles," Lund says. "Toyota says it will replace the current xB design later in the 2007 model year, and hopefully the new version will be a better performer."

FUEL ECONOMY

Miles per gallon: minicars versus small and midsize cars

	Miles per gallon	
Minicars	**city**	**highway**
Toyota Yaris	34	39
Honda Fit	31	37
Scion xB	30	34
Hyundai Accent	28	37
Chevrolet Aveo	26	34
Mini Cooper	26	34
Small cars		
Toyota Prius (hybrid)	60	51
Honda Civic (hybrid)	49	51
Honda Civic	30	40
Toyota Corolla	30	38
Nissan Versa	30	36
Nissan Sentra	29	36
Hyundai Elantra	28	36
Chevrolet Cobalt	24	32
Midsize cars		
Honda Accord	24	34
Hyundai Sonata	24	33
Toyota Camry	24	33

Notes: Miles per gallon are for cars with automatic or continuously variable transmissions. Midsize cars have 4-cylinder engines.

People often choose to buy very light cars for fuel economy but "you don't have to buy the smallest, lightest car to get one that's easy on fuel consumption," Lund points out. "Models including the Honda Civic, not even the hybrid version, and Toyota Corolla are bigger than the minicars we tested and weigh more, so we would expect better occupant protection in serious crashes. At the same time, these and other small car models get nearly as good fuel economy as minicars."

Rear protection isn't keeping pace: Cars have been earning good ratings in frontal crash tests for several years, and now improvements in side crash protection are accelerating. But the seat/head restraints in many cars still don't provide adequate protection for most people in rear-end crashes. This is the case among the cars the Institute recently tested. Every model except the Versa, classified a small car, earns a low rating of marginal or poor.

"When a vehicle's seat/head restraint design isn't good, people are more likely to suffer neck injuries in rear impacts," Lund points out. This is the most common crash type in

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commuter traffic. More than 2 million insurance claims are filed for whiplash each year, costing more than $8 billion. About 1 in 10 of these injuries results in long-term pain and/or disability.

How do the neck injuries occur? When a vehicle is struck in the rear and driven forward, its seats accelerate people's torsos forward. Unsupported, an occupant's head will lag behind the forward movement of the torso. This differential motion causes the neck to bend back and stretch. The higher the torso acceleration, the more sudden the motion, the higher the forces on the neck, and the more likely a neck injury is to occur. Seats and head restraints have to work in concert to support people's necks and heads, accelerating them with the torso as the vehicle is driven forward. The head restraint has to be tall enough and close enough to the back of the head to catch it early in a crash, and the seat has to have some "give" to help keep the head and torso moving together.

"The seat/head restraint combinations in every car except the Versa that we tested this time around wouldn't provide adequate protection against whiplash," Lund says.

How vehicle crashworthiness is evaluated: The Institute's frontal crashworthiness evaluations are based on results of 40 mph frontal offset crash tests. Each vehicle's overall evaluation is based on measurements of intrusion into the occupant compartment, injury measures recorded on a 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.

Side evaluations are 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 two instrumented SID-IIs dummies, assessment of head protection countermeasures, and the vehicle's structural performance during the impact. Injury measures obtained from the two dummies, one in the driver seat and the other in the back seat behind the driver, are used to determine the likelihood that a driver and/or passenger in a real-world crash would have sustained serious injury to various parts of the body.

The movements and contacts of the dummies' heads during the crash also are evaluated. Structural performance is based on measurements indicating the amount of B-pillar intrusion into the occupant compartment.

Rear crash protection is rated according to a two-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. Seats with good or acceptable restraint 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 cannot be positioned to protect many people.

End 6-page news release on crashworthiness ratings of smallest cars
Attachment: front, side, & rear crashworthiness evaluations of 8 cars
VNR on 12/19/2006 at 11-11:30 am EST (C) AMC 3/Trans. 3 (dl3760H)
repeat at 1:30-2 pm EST (C) AMC 3/Trans. 3 (dl3760H); dedicated

For more information go to www.iihs.org

ATTACHMENT: CRASHWORTHINESS EVALUATIONS P.1 OF 1

	FRONT EVALUATION	SIDE EVALUATION	REAR CRASH PROTECTION
NISSAN VERSA **STANDARD SIDE AIRBAGS: CURTAINS FOR HEAD PROTECTION PLUS TORSO BAGS IN FRONT SEATS** front and rear: 2007 models side: 2007 models (mfg. after November 2006)	G	G	G
TOYOTA YARIS **WITH OPTIONAL SIDE AIRBAGS: CURTAINS FOR HEAD PROTECTION PLUS TORSO BAGS IN FRONT SEATS** front, side, and rear: 2007 models	G	G	M
HONDA FIT **STANDARD SIDE AIRBAGS: CURTAINS FOR HEAD PROTECTION PLUS TORSO BAGS IN FRONT SEATS** front, side, and rear: 2007 models	G	G	P
PREVIOUSLY TESTED **MINI COOPER** **STANDARD SIDE AIRBAGS: TUBULAR FOR HEAD PROTECTION PLUS TORSO BAGS IN FRONT SEATS** front and rear: 2002-06 models side: 2006 models (mfg. after December 2005) Note: This car was tested previously. It's being redesigned, and the Institute will test a 2007 model when it's available.	G	A	M
CHEVROLET AVEO **STANDARD SIDE AIRBAGS: COMBINATION HEAD/TORSO BAGS IN FRONT SEATS** front, side, and rear: 2007 models	A	M	P
SCION xB **SIDE AIRBAGS UNAVAILABLE** front, side, and rear: 2004-06 models	G	P	M
TOYOTA YARIS **WITHOUT OPTIONAL SIDE AIRBAGS** front, side, and rear: 2007 models	G	P	M
HYUNDAI ACCENT **KIA RIO** **STANDARD SIDE AIRBAGS: CURTAINS FOR HEAD PROTECTION PLUS TORSO BAGS IN FRONT SEATS** front, side, and rear: 2006-07 models	A	P	P

GOOD	G
ACCEPTABLE	A
MARGINAL	M
POOR	P

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 while frontal ratings cannot.

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.