

# INSURANCE INSTITUTE FOR HIGHWAY SAFETY


## NEWS RELEASE

April 24, 2005

### NEW CRASH TEST RESULTS: VOLKSWAGEN NEW JETTA ACES SIDE IMPACT TEST; ALSO EARNS GOOD RATING IN THE FRONTAL TEST

ARLINGTON, VA — The 2005 Volkswagen new Jetta earned good ratings in both frontal offset and side impact crash tests conducted by the Insurance Institute for Highway Safety. Plus the Jetta is the first vehicle to earn the top rating of good in every individual measurement category (injury measures, head protection, and structural design) of the Institute's side impact test. This car is designated a "best pick" for side crash protection, and it's a good performer for frontal crash protection. The performance of the Jetta in these tests plus its acceptable rating for seat/head restraint design in rear impact tests make it the top-rated car overall in the inexpensive midsize class. The redesigned Jetta, which is larger than its predecessor model, was introduced in the 2005 model year, and these results apply to the new larger Jetta.

"The new Jetta was the first vehicle to ace our side impact test," says Institute president Brian O'Neill. "It's the best performer among midsize inexpensive cars. Its structural performance was better than the second- and third-best models, the

	OVERALL SIDE EVALUATION	HEAD PROTECTION	INJURY MEASURES			STRUCTURE/ SAFETY CAGE
			Head/neck	Torso	Pelvis/leg	
 <b>VOLKSWAGEN NEW JETTA</b> Tested with standard side curtain airbags (front and rear) and seat-mounted torso airbags (front)	G	Driver	G	G	G	G
		Rear passenger	G	G	G	
<b>TOYOTA CAMRY</b> Tested with optional side curtain airbags (front and rear) and seat-mounted torso airbags (front)	G	Driver	G	G	A	A
		Rear passenger	G	G	G	
<b>HONDA ACCORD</b> Tested with side curtain airbags (front and rear) and seat-mounted torso airbags (front); optional when tested, now standard	G	Driver	G	G	G	M
		Rear passenger	G	G	G	

— MORE —

Toyota Camry and Honda Accord. This new Jetta design shows what manufacturers can do to improve occupant protection in serious side impacts when cars are hit by taller and heavier SUVs and pickup trucks.”

Volkswagen requested the front and side tests of the new Jetta early in the model year, and the Institute’s policy is to grant such requests if a manufacturer provides reimbursement for the cost of the vehicles.

**Frontal offset test performance is good:** In the frontal test, vehicles strike a deformable barrier at 40 mph. The vehicle being tested is offset, so only 40 percent of its front end strikes the barrier on the driver side. This means that a smaller area of the front end must manage the crash energy, compared with full-width tests. Injury measures are recorded on a dummy representing an average-size (50th percentile) man positioned in the driver seat.

The Jetta’s structure held up well in this crash test, and most injury measures were low. However, forces recorded on the driver dummy’s right leg indicate that a person in a crash of the same severity could suffer a fractured tibia.

“The new Jetta is a good performer but not a ‘best pick’ in the frontal test,” O’Neill says.

**Side airbags with head protection are standard:** In the Institute’s side impact test, a moving deformable barrier strikes the driver side of a passenger vehicle at 31 mph. The barrier weighs 3,300 pounds and has a front end shaped to simulate the front end of a typical pickup or SUV. In each side-struck vehicle are two instrumented dummies the size of a small (5th percentile) woman, one positioned in the driver seat and one in the rear seat behind the driver.

The Jetta is one of an increasing number of inexpensive cars with standard front and rear curtain-style side airbags designed to protect occupants’ heads. Seat-mounted side airbags designed to protect the chest and abdomen also are standard in the front and optional in the rear (the Jetta that was tested didn’t

have the optional rear airbags). In the Institute's test, the heads of the dummies in the front and rear seats were protected from hitting any hard structures, including the test barrier.

"This is a challenging test, especially for a car," O'Neill says. "The top of the barrier strikes the car at the height of an occupant's head, simulating the kind of side impact crash that is becoming more common in the real world when an SUV or pickup collides with a car in the side."

The new Jetta's results "show you don't have to spend a lot of money to get a vehicle that offers good protection in front and side crashes," O'Neill adds. "We want more manufacturers to do what Volkswagen has done and make side airbags with head protection standard in all of their vehicles."

The strength of the side structure of a vehicle also is important in this test. The Jetta's structure is rated good because intrusion or collapse was reduced by the good structural design around the pillar between the doors. This is only the second car to earn a good rating for structure in the Institute's side impact test program.

**Side airbags reduce risks in real-world crashes:** Institute research shows that side airbags with head protection are reducing deaths by about 45 percent among drivers of cars struck on the driver side. Before the availability of head-protecting airbags, there was virtually nothing to prevent people's heads from being struck by intruding vehicles or rigid objects like trees or poles in serious side impacts. Side airbags that protect the chest and abdomen, but not the head, also are reducing deaths but are less effective (about a 10 percent reduction in deaths). Nearly 10,000 vehicle occupants died in side impact crashes in 2003.

**How vehicles are evaluated:** The Institute's frontal crashworthiness evaluations are based on results of frontal offset crash tests at 40 mph. Each vehicle's overall evaluation is based on three aspects of performance — measurements

of intrusion into the occupant compartment, injury measures from a Hybrid III dummy positioned in the driver seat, and analysis of slow-motion film to assess how well the restraint system controlled dummy movement during the test.

Each vehicle's overall side evaluation is based on injury measures recorded on two instrumented SID-IIIs 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 rear 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 body regions. The movements and contacts of the dummies' heads during the crash also are evaluated. This assessment is more important for seating positions without head-protecting airbags which, assuming they perform as intended, should prevent injurious head contacts. Structural performance is based on measurements indicating the amount of B-pillar intrusion into the occupant compartment. Some intrusion into the compartment is inevitable in serious side impacts, but any intrusion that does occur should be uniform both horizontally and vertically and shouldn't seriously compromise the driver or passenger space.

**End 4-page news release on frontal crash test results  
2-page attachment: ratings of midsize inexpensive cars**

**VNR 4/25/2005 at 10-10:30 am EDT (C) IA 5/Trans. 19  
and 4/25 at 1-1:30 pm EDT (C) IA 5/Trans. 19; in rotation**

**For more information go to [www.iihs.org](http://www.iihs.org)**

ATTACHMENT: CRASHWORTHINESS EVALUATIONS, p.1 of 2

Midsize inexpensive cars	FRONT EVALUATION	SIDE EVALUATION	REAR CRASH PROTECTION
<p><b>VOLKSWAGEN NEW JETTA</b>  <b>SIDE IMPACT TEST CONDUCTED WITH STANDARD FRONT &amp; REAR HEAD CURTAIN AIRBAGS &amp; FRONT SEAT-MOUNTED TORSO AIRBAGS</b>                      front: 2005 models (mfg. after Nov. 2004); test vehicle = 3,214 lbs.                      side: 2005 models (mfg. after Nov. 2004); test vehicle = 3,228 lbs.                      rear: 2005 models (mfg. after Nov. 2004)</p> <p>NEWLY TESTED</p>	G	BEST PICK side G	A
<p><b>TOYOTA CAMRY</b>  <b>SIDE IMPACT TEST CONDUCTED WITH OPTIONAL FRONT &amp; REAR HEAD CURTAIN AIRBAGS &amp; FRONT SEAT-MOUNTED TORSO AIRBAGS</b>                      front: 2002-05 models; test vehicle = 3,276 lbs.                      side: 2004-05 models; test vehicle = 3,203 lbs.                      rear: 2002-04 models; 2005 to be tested later this year</p>	BEST PICK frontal G	G	M
<p><b>HONDA ACCORD</b>  <b>SIDE IMPACT TEST CONDUCTED WITH FRONT &amp; REAR HEAD CURTAIN AIRBAGS &amp; FRONT SEAT-MOUNTED TORSO AIRBAGS (OPTIONAL IN 2004 MODELS, STANDARD IN 2005s)</b>                      front: 2003-05 models; test vehicle = 3,186 lbs.                      side: 2004-05 models; test vehicle = 3,157 lbs.                      rear: 2003-05 models</p>	BEST PICK frontal G	G	P
<p><b>MITSUBISHI GALANT</b>  <b>SIDE IMPACT TEST CONDUCTED WITH STANDARD FRONT SEAT-MOUNTED COMBINATION HEAD &amp; TORSO AIRBAGS</b>                      front: 2004-05 models; test vehicle = 3,395 lbs.                      side: 2005 models; test vehicle = 3,391 lbs.                      rear: 2004-05 models</p>	G	G	P
<p><b>SUBARU LEGACY</b>  <b>SIDE IMPACT TEST CONDUCTED WITH STANDARD FRONT &amp; REAR HEAD CURTAIN AIRBAGS &amp; FRONT SEAT-MOUNTED TORSO AIRBAGS</b>                      front: 2005 models; test vehicle = 3,298 lbs.                      side: 2005 models; test vehicle = 3,322 lbs.                      rear: 2005 models</p>	BEST PICK frontal G	M	A
<p><b>NISSAN ALTIMA</b>  <b>SIDE IMPACT TEST CONDUCTED WITHOUT OPTIONAL FRONT &amp; REAR HEAD CURTAIN AIRBAGS &amp; FRONT SEAT-MOUNTED TORSO AIRBAGS</b>                      front: 2002-05 models; test vehicle = 3,150 lbs.                      side: 2002-05 models; test vehicle = 3,095 lbs.                      rear: 2005 models</p>	G	P	A

G GOOD  
A ACCEPTABLE  
M MARGINAL  
P POOR

ORDER OF VEHICLES REFLECTS RATINGS IN FRONT, SIDE, AND REAR TESTS.

FOR MORE DETAILED CRASHWORTHINESS EVALUATIONS OF MIDSIZE INEXPENSIVE CARS AND EVALUATIONS OF OTHER GROUPS OF VEHICLES, GO TO [WWW.IIHS.ORG](http://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 subject to a dynamic test. Seats with head restraints rated marginal or poor, based on geometry, aren't tested because they cannot protect taller occupants.

ATTACHMENT: CRASHWORTHINESS EVALUATIONS, p.2 of 2

Midsize inexpensive cars (continued)	FRONT EVALUATION	SIDE EVALUATION	REAR CRASH PROTECTION
<p><b>CHEVROLET MALIBU</b>  <b>SIDE IMPACT TEST CONDUCTED WITHOUT OPTIONAL FRONT &amp; REAR HEAD CURTAIN AIRBAGS</b>                      front: 2004-05 models; test vehicle = 3,183 lbs.                      side: 2004-05 models; test vehicle = 3,254 lbs.                      rear: 2004-05 models  <u>Note:</u> Optional front seat-mounted torso airbags have been added for the 2005 model year. Later this year the Institute will test the 2005 model with this option.</p>	G	P	A
<p><b>TOYOTA CAMRY</b>  <b>SIDE IMPACT TEST CONDUCTED WITHOUT OPTIONAL FRONT &amp; REAR HEAD CURTAIN AIRBAGS &amp; FRONT SEAT-MOUNTED TORSO AIRBAGS</b>                      front: 2002-05 models; test vehicle = 3,276 lbs.                      side: 2002-05 models; test vehicle = 3,197 lbs.                      rear: 2002-04 models; 2005 to be tested later this year</p>	BEST PICK frontal G	P	M
<p><b>MAZDA 6</b>  <b>SIDE IMPACT TEST CONDUCTED WITHOUT OPTIONAL FRONT &amp; REAR HEAD CURTAIN AIRBAGS &amp; FRONT SEAT-MOUNTED TORSO AIRBAGS</b>                      front: 2003-05 models; test vehicle = 3,086 lbs.                      side: 2003-05 models; test vehicle = 3,137 lbs.                      rear: 2003-05 models</p>	BEST PICK frontal G	P	P
<p><b>DODGE STRATUS/CHRYSLER SEBRING</b>  <b>SIDE IMPACT TEST CONDUCTED WITHOUT OPTIONAL FRONT &amp; REAR HEAD CURTAIN AIRBAGS</b>                      front: 2001-05 models; test vehicle = 3,252 lbs.                      side: 2001-05 models; test vehicle = 3,126 lbs.                      rear: 2003-05 models</p>	A	P	A
<p><b>SATURN L SERIES</b>  <b>SIDE IMPACT TEST CONDUCTED WITH FRONT &amp; REAR HEAD CURTAIN AIRBAGS (OPTIONAL IN 2001 MODELS, STANDARD IN 2002-05s)</b>                      front: 2000-05 models; test vehicle = 3,192 lbs.                      side: 2001-05 models; test vehicle = 3,210 lbs.                      rear: 2001-05 models</p>	A	P	P
<p><b>HYUNDAI SONATA/KIA OPTIMA</b>  <b>SIDE IMPACT TEST CONDUCTED WITH STANDARD FRONT SEAT-MOUNTED COMBINATION HEAD &amp; TORSO AIRBAGS</b>                      front: 1999-2005 models (Sonata); 2001-05 models (Optima) test vehicle = 3,131 lbs.                      side: 1999-2005 models (Sonata); 2001-05 models (Optima) test vehicle = 3,277 lbs.                      rear: 2001-05 models</p>	A	P	P
<p><b>SUZUKI VERONA</b>  <b>SIDE IMPACT TEST CONDUCTED WITHOUT FRONT SEAT-MOUNTED COMBINATION HEAD &amp; TORSO AIRBAGS (NOT AVAILABLE IN 2004 MODELS, STANDARD IN 2005s)</b>                      front: 2004-05 models; test vehicle = 3,385 lbs.                      side: 2004 models; test vehicle = 3,404 lbs.                      rear: 2004-05 models  <u>Note:</u> Later this year the Institute will test a 2005 model with side airbags.</p>	A	P	P

G GOOD  
 A ACCEPTABLE  
 M MARGINAL  
 P POOR