

# INSURANCE INSTITUTE FOR HIGHWAY SAFETY

## NEWS RELEASE

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### MINIVAN BUMPER TEST RESULTS: NISSAN QUEST IS BY FAR THE WORST PERFORMER

ARLINGTON, VA — None of 6 minivans, all 2008 models, is designed to resist vehicle damage in many low-speed collisions. The front and rear bumper systems on these minivans allowed \$5,000 or more damage in a series of 4 crash tests conducted at 3 and 6 mph. The Nissan Quest was the worst, sustaining damage that cost more

than \$8,000 to repair. These are the results of recent crash tests conducted by the Insurance Institute for Highway Safety to assess and compare how well vehicle bumper systems resist damage in the kinds of low-speed collisions that frequently occur in commuter traffic and parking lots.

**Bumper performance in low-speed crash tests:  
VEHICLE REPAIR COSTS**

	Front full width	Front corner	Rear full width	Rear corner	TOTAL DAMAGE
Honda Odyssey	\$1,538	\$1,446	\$1,531	\$743	<b>\$5,258</b>
Dodge Grand Caravan	\$1,347	\$1,581	\$2,084	\$483	<b>\$5,495</b>
Toyota Sienna	\$840	\$767	\$2,890	\$1,229	<b>\$5,726</b>
Chevrolet Uplander	\$1,631	\$1,227	\$1,896	\$1,045	<b>\$5,799</b>
Kia Sedona	\$1,176	\$1,854	\$2,369	\$1,126	<b>\$6,525</b>
Nissan Quest	\$1,603	\$1,955	\$3,549	\$995	<b>\$8,102</b>

"These minivans don't have the worst bumpers we've tested, but they still allow way too much damage in minor impacts. It's damage that consumers shouldn't have to pay for or put up with the aggravation of having to get their vehicles repaired," says Institute senior vice president Joe Nolan.

In the Institute's bumper tests, each vehicle is run into a barrier designed to mimic the design of a car bumper. The steel barrier's plastic absorber and flexible cover simulate cars' energy absorbers and plastic bumper covers. The series

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of 4 tests includes front and rear full-width impacts at 6 mph and front and rear corner impacts at 3 mph. The bottom of the barrier is 18 inches off the ground in the full-width tests and 16 inches from the ground in the corner impacts. These heights are designed to drive bumper improvements and lead to better protection from damage in a range of real-world crashes.

**Minivan designs help in bumper tests:** The minivans performed somewhat better in the 4 bumper tests than the midsize cars the Institute tested earlier this year. This is in part because the minivans' front bumpers are an inch or so higher off the ground, compared with car bumpers (about 17 inches versus 16). The extra height means the minivans' front bumpers usually didn't underide the test barrier, which exacerbates the damage.

Another important design aspect is that most of the minivans the Institute tested have third-row seats that fold into the floor, which requires pushing the vehicles' frame rails out wider. Because the bumper systems attach to the ends of the rails, the rear bumpers (but not the front ones) also are wider. This means they do a better job of protecting the rear corners of the minivans from damage in low-speed collisions. For example, the taillights on the minivans weren't damaged in any of the rear corner tests while the headlights were damaged in 4 of the 6 corresponding front corner tests.

**Nissan Quest failed 'miserably:'** The worst performer overall, the Nissan Quest, "miserably failed the rear full-width test, sustaining more than twice as much damage as the best performer, the Honda Odyssey," Nolan points out. "This is disappointing because full-width tests are the easiest ones. They spread the energy of an impact across a vehicle's whole back or front. But the Quest's rear bumper system failed when its reinforcement bar cracked and was driven into the rear body of the vehicle, resulting in expensive repairs. The tailgate was so badly damaged that it had to be replaced."

The tailgates on 5 of the 6 minivans the Institute tested — all but the Chevrolet Uplander — sustained damage in the rear full-width test. Only the Quest and

Toyota Sienna required tailgate replacement. Those on the other minivans could be repaired at less cost.

The Quest's performance wasn't much better in the two frontal tests. It was the worst performer in the corner test and second to worst in the front full-width test, during which it slid under the bumper barrier and sustained damage to the hood and grille. This was the only minivan with hood damage in the front full-width test.

"Quest owners can expect huge damage repair bills after all kinds of low-speed collisions. This isn't a good vehicle choice for consumers looking for a minivan with reasonable repair costs," Nolan says. Nor are a couple of other Nissans. The Maxima racked up more damage in an earlier series of the same bumper tests than 16 other moderately priced midsize cars, and the Infiniti G35 was worst among 11 luxury midsize cars.

**Honda Odyssey performs best overall:** Damage to the Odyssey in the two frontal tests, full-width and corner, was in line with damage to the other minivans, but this vehicle performed better in the rear tests. It was the best performer in the rear full-width configuration, sustaining damage costing half as much to repair as the damage to the Quest. In the rear corner test, the Odyssey was the second best performer. Damage was largely confined to the bumper system — the plastic cover, reinforcement bar, and the energy-absorbing foam. The Dodge Grand Caravan was the best performer in this test, sustaining the least amount of damage (\$483) in any of the 24 individual tests in this round of bumper evaluations. Damage to the Grand Caravan, as well as the Odyssey and Sienna, was limited to the bumpers.

The Toyota Sienna sustained the least amount of damage in the front corner test. But if the crash configuration had differed slightly, the outcome could have been very different because there's little underneath the Sienna's bumper cover to absorb crash energy. The Sienna and Chevrolet Uplander were the only minivans to withstand the front corner test without headlight damage.

"There are good examples in these results," Nolan says. "Although neither the Odyssey nor the Grand Caravan performed particularly well in the frontal tests

and the Sienna didn't do particularly well in the rear tests, all three of these vehicles did turn in good performances in one or two tests apiece. What we want is for all passenger vehicles to perform as well or better than the best mini-van examples in each test."

**All parts don't cost the same:** Besides the amount of damage sustained in a low-speed impact, repair costs are influenced by both the price of replacement parts and the complexity of the necessary repairs. For example, the one-piece plastic radiator supports on both the Quest and the Grand Caravan had to be replaced after the front corner impact. Although the repairs were essentially the same, the price of the jobs differed a lot — \$347 for the Grand Caravan compared with almost twice as much (\$674) for the Quest.

"Because minivans and other passenger vehicles allow so much damage in low-speed collisions, we have to pay attention to comparative repair and replacement costs," Nolan concludes. "The best way to avoid these costs is for automakers to equip their vehicles with bumper systems that resist damage in the first place. Until manufacturers do this, consumers will have to study our crash test results and shop accordingly."

**End of 4-page news release on bumper performance in low-speed tests  
VNR on 12/20/2007 at 10:30-11 am EST (C) Galaxy 25/Trans. 14 (d13980H)  
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