EVOLUTION OF IIHS RATINGS

IIHS launched its vehicle rating program in 1995 to fill gaps in government testing. Tests are chosen and developed based on research identifying the types of crashes that cause the most injuries and fatalities. The program has spurred remarkable improvements in vehicle safety, with progress accelerating following the introduction of our *TOP SAFETY PICK* and *TOP SAFETY PICK+* awards in 2005.

CRASHWORTHINESS

DISCONTINUED
Original moderate overlap front
1995-2024

Updated moderate overlap front
2022-present

DISCONTINUED
Head restraints and seats
1995-2022

DISCONTINUED
Original side
2003-22

Updated side
2021-present

DISCONTINUED
Roof strength
2009-22

Driver-side small overlap front
2012-present

Passenger-side small overlap front
2017-present

CRASH AVOIDANCE

DISCONTINUED
Original front crash prevention vehicle-to-vehicle
2013-22

Updated front crash prevention vehicle-to-vehicle
2024-present

Headlights
2016-present

Rear crash prevention
2018-present

Daytime pedestrian crash prevention
2019-23

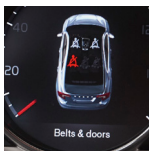
Nighttime pedestrian crash prevention
2022-23

Combined pedestrian crash prevention
2024-present

RESTRAINT USE

Booster ratings
2008-24

LATCH
2015-present



Seat belt reminder evaluation
2022-present

CRASHWORTHINESS

THE FIRST IIHS CRASH TESTS

The program began with the original moderate overlap front crash test. A frontal offset crash was chosen because frontal crashes are the most common type of crash to result in fatalities and because offset crashes challenge vehicles in different ways than full-width crashes. The National Highway Traffic Safety Administration was already conducting full-width frontal tests, which put more stress on seat belts and airbags. In contrast, offset crashes are more demanding of a vehicle's structure.

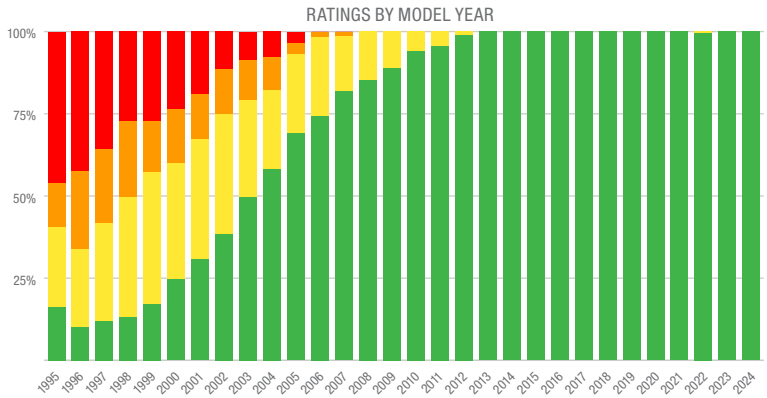
Moderate overlap front • 1995-present

Original, 1995-2024

The original moderate overlap test used a single dummy in the driver seat to gauge injury risk.

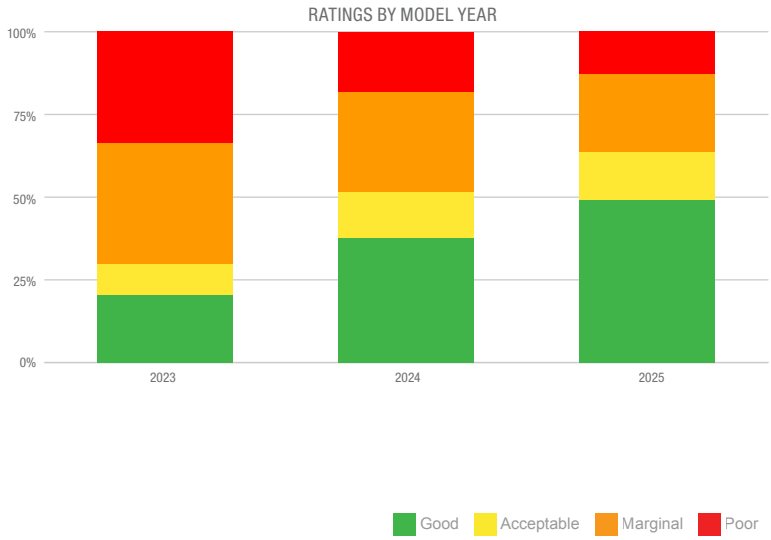
It drove developments like:

- Stronger vehicle structures
- Dedicated crush zones
- Advancements in front airbags
- More advanced seat belts



Updated, 2022-present

In 2022, we added a dummy representing a small woman in the second row behind the driver to encourage similar progress in back-seat safety.



A driver of a model rated good in the original moderate overlap test is 46% less likely to die in a head-on crash with a similar vehicle, compared with a driver of a model rated poor. A good rating in the updated test means more protection for rear passengers as well.

CRASHWORTHINESS

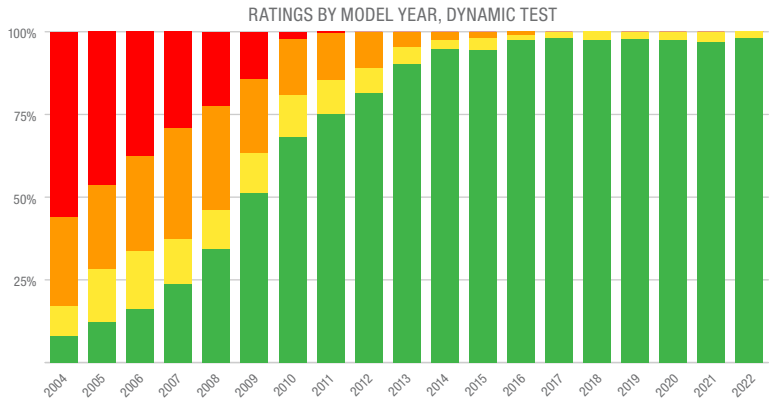
REDUCING THE THREAT OF NECK INJURIES

We began rating head restraints the same year that we started crash testing because neck sprains and strains are the most frequently reported injuries in U.S. auto insurance claims. Good seat design and proper head restraints can prevent neck injuries caused by rear impacts.

Head restraints & seats • 1995-2022

Our early ratings were based solely on the dimensions and location of the head restraint. A simulated rear-impact (dynamic) crash was added in 2004.

In 2010, the federal government adopted standards for the dimensions and location of the head restraint that correspond to our requirements for restraint height and backset.



Rates of neck injuries in rear-impact crashes are 15% lower for vehicles with good head restraint ratings than for those rated poor. Rates for neck injuries requiring three months or more of treatment are 35% lower.

CRASHWORTHINESS

TARGETING T-BONE CRASHES

With the first two tests delivering strong results, IIHS targeted side-impact crashes next, as they account for about a quarter of U.S. passenger vehicle occupant deaths. A looming issue was the growing proportion of the on-road fleet made up of SUVs, which posed a greater risk to people in passenger cars in side crashes.

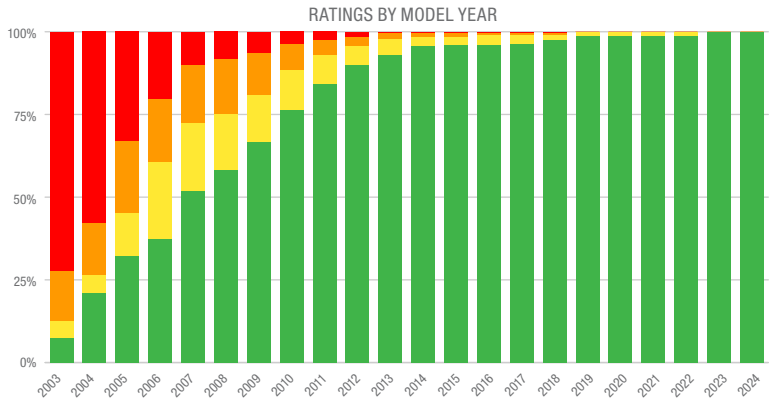
Side • 2003-present

Original, 2003-22

While the striking rig used in government tests had dimensions like a passenger car, the IIHS striking rig matched the approximate size of a typica SUV or pickup of that era.

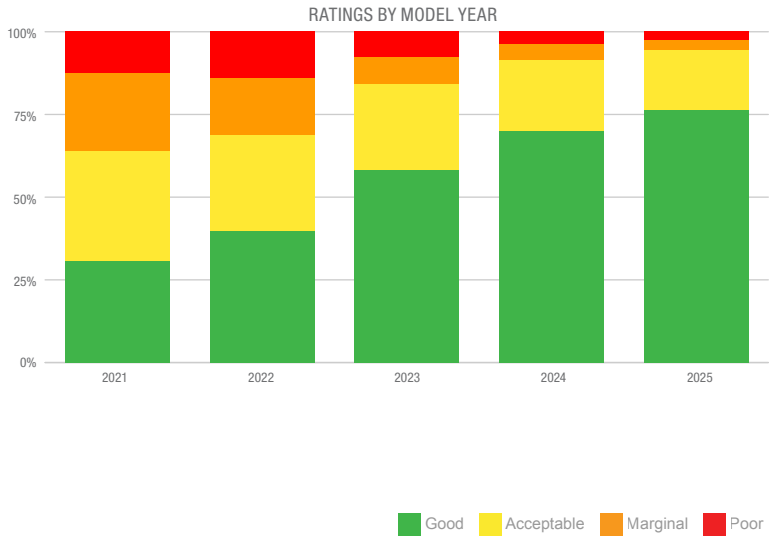
Innovations that resulted:

- Standard side-curtain airbags
- Stronger B-pillar designs



Updated, 2021-present

We updated the test after research showed that people were still dying in more severe side crashes. With a heavier, more realistic striking rig and faster test speed, the new test delivers 82% more crash energy.



A driver of a vehicle rated good in the original side test is 70% less likely to die in a left-side crash than a driver of a poor-rated vehicle. Vehicles with a good rating in the updated test provide an even higher level of protection.

CRASHWORTHINESS

ROLLOVERS

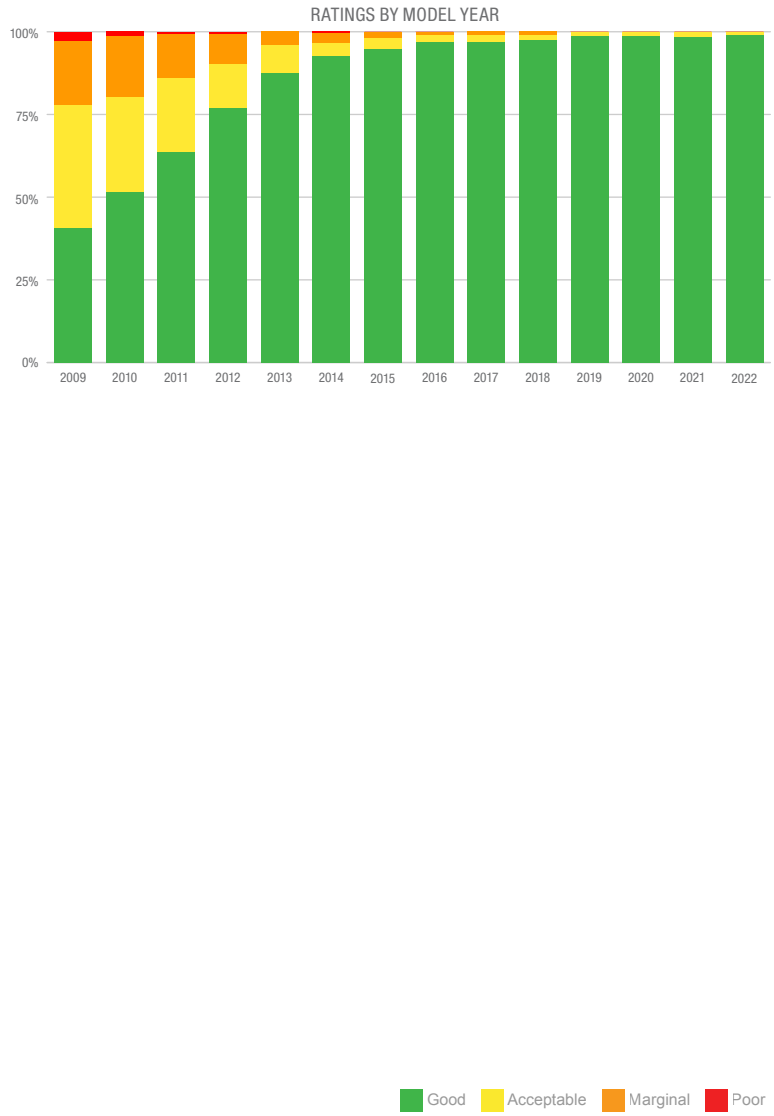
Our next crashworthiness evaluation targeted rollover crashes, which were much more common prior to the introduction of electronic stability control and often resulted in fatalities. Becausethe government already gauged how likely vehicles were to roll over, we focused on roof strength.

Roof strength • 2009-22

In a rollover crash, stronger roofs prevent passengers from being crushed, help ensure the airbags and seat belts do their jobs and help prevent occupants from being ejected from the vehicle. An updated federal standard similar to the IIHS requirements for a good rating was phased in between 2013 and 2017.

Manufacturers responded to our test by:

- Adopting high-strength materials for A- and B-pillars
- Reinforcing common roof failure points
- Strengthening roof cross-members



A driver of a vehicle rated good in the roof strength test has a 34% lower risk of fatality or serious injury in a rollover crash than a driver of a poor-rated vehicle.

CRASHWORTHINESS

A NEW TYPE OF FRONTAL CRASH

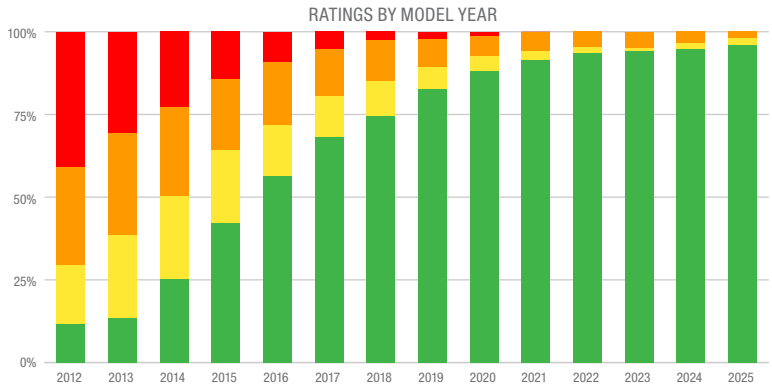
In 2012, IIHS added a new frontal offset crash in which the test vehicle hits the barrier with only 25% of its width, compared with 40% in the moderate overlap evaluation, after research showed this type of crash remained deadly for drivers of vehicles with good moderate overlap ratings.

Small overlap front • 2012-present

Driver-side, 2012-present

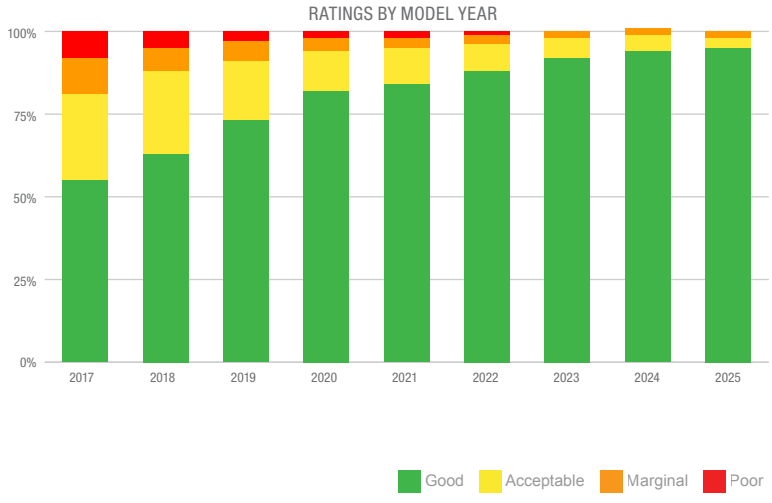
The small overlap crash presents a different challenge for seat belts and airbags because occupants are propelled both forward and toward the side of the vehicle. Crash forces go directly into the front wheel, suspension system and firewall. Design changes that resulted:

- Reinforcements to footwell and safety cage
- Stronger occupant compartments
- Adjustments to occupant restraints
- Deployment of side-curtain airbags



Passenger-side, 2017-present

A passenger-side test was added after research showed that manufacturers didn't always make those improvements on both sides of the vehicle.



A driver of a vehicle rated good in the driver-side small overlap front test is 12% less likely to be killed in any type of frontal crash than a driver of a vehicle with a poor rating.

CRASH AVOIDANCE

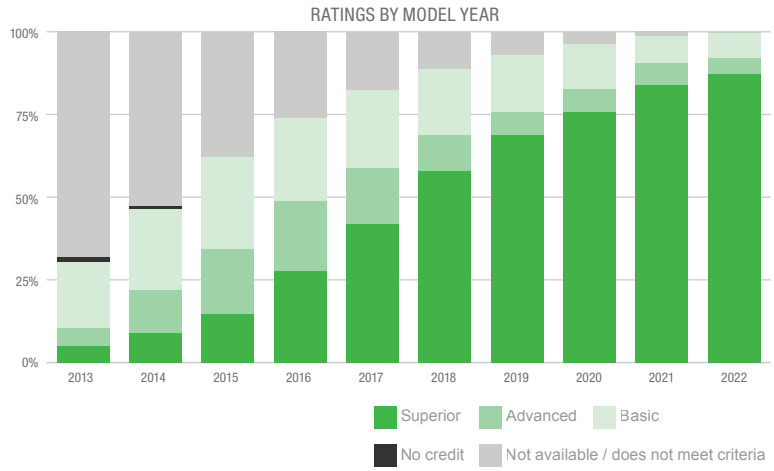
THE LAUNCH OF CRASH AVOIDANCE TESTING

Just as important as protecting people from being killed and injured when a crash occurs is working to prevent those crashes from happening in the first place. IIHS launched its first crash avoidance test because insurance data showed that forward collision warning and automatic emergency braking (AEB) systems reduced front-to-rear crash rates.

Front crash prevention: vehicle-to-vehicle • 2013-present

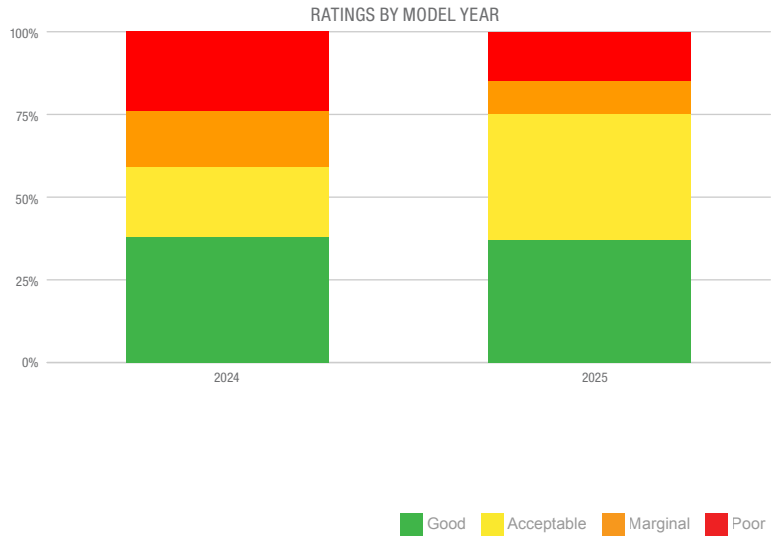
Original, 2013-22

Initially, a superior/advanced/basic rating scale was used because front crash prevention was a relatively rare, optional feature. Thanks to a voluntary agreement that IIHS helped broker, the feature is now standard on virtually all passenger vehicles.



Updated, 2024-present

The new test addresses crashes that occur at higher speeds and those that involve motorcycles and large trucks as well as passenger cars. Today we use our standard good/acceptable/marginal/poor rating scale, as the feature is now considered essential.



AEB reduces police-reported front-to-rear crashes by 50%. The real-world value of a good rating has yet to be documented.

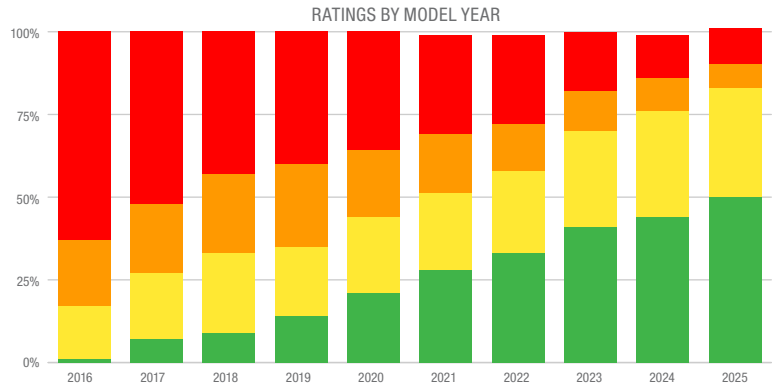
CRASH AVOIDANCE

BRINGING BRIGHTER HEADLIGHTS INTO FOCUS

We started rating this fundamental equipment after research showed many headlights that met government standards provided inadequate illumination on the road. About half of all traffic deaths happen after dark or at dawn or dusk. But automakers often treated headlights as an afterthought and only offered their most effective ones as expensive options.

Headlights • 2016-present

Our technology-neutral ratings are based on how well headlight systems illuminate the road ahead, with a penalty for excessive glare that can temporarily blind oncoming drivers.



Vehicles with good ratings for visibility in the IIHS headlight test have 19% fewer nighttime single-vehicle crashes and 23% fewer nighttime pedestrian crashes than vehicles with poor-rated headlights.

CRASH AVOIDANCE

LOWERING THE COST OF BACKING CRASHES

Parking crashes don't often result in serious injuries, but low-speed backing crashes are among the most common insurance claims. IIHS began rating rear crash prevention systems after Highway Loss Data Institute analyses showed that parking sensors, rear cross-traffic alert and rear AEB were associated with large reductions in the frequency of insurance claims for backing crashes.

Rear crash prevention • 2018-present

Because our primary mission is saving lives, the Institute conducts rear crash prevention tests as time permits, rather than evaluating every vehicle that comes through our facility. Vehicles with rear crash prevention technologies can be rated basic, advanced or superior.

RATED VEHICLES

Superior	Advanced	Basic
2023-24 Ford Escape Optional	2023-24 Mazda CX-5 Optional	2023-24 Hyundai Tucson Standard rear automatic braking; other functions optional
2023-24 Honda CR-V Optional	2023-24 Toyota RAV4 Optional	
2023-24 Mitsubishi Outlander STANDARD	2023-24 Volkswagen Taos Optional	
2023-24 Subaru Forester Optional	2017-19 BMW 5 series sedan Optional	
2017-19 Cadillac XT5 Optional	2017-19 Infiniti QX60 Optional	
2019 Subaru Ascent Optional	2017-19 Jeep Cherokee Optional	
2018-19 Subaru Crosstrek Optional	2019 RAM 1500 Optional	
2018-19 Subaru Impreza sedan & wagon Optional	2017-18 Toyota Prius Optional	
2018-19 Subaru Legacy Optional		
2017-19 Subaru Outback Optional		
2018-19 Subaru WRX Optional		

Parking sensors and rear AEB combined reduce the incidence of police-reported backing crashes by 78%, while rear cross-traffic alert alone reduces such collisions by 22%. The real-world benefits of a good rating haven't been documented.

CRASH AVOIDANCE

PREVENTING PEDESTRIAN CRASHES

We introduced our first pedestrian crash avoidance tests in 2019 to address a disturbing rise in pedestrian fatalities over the preceding decade.

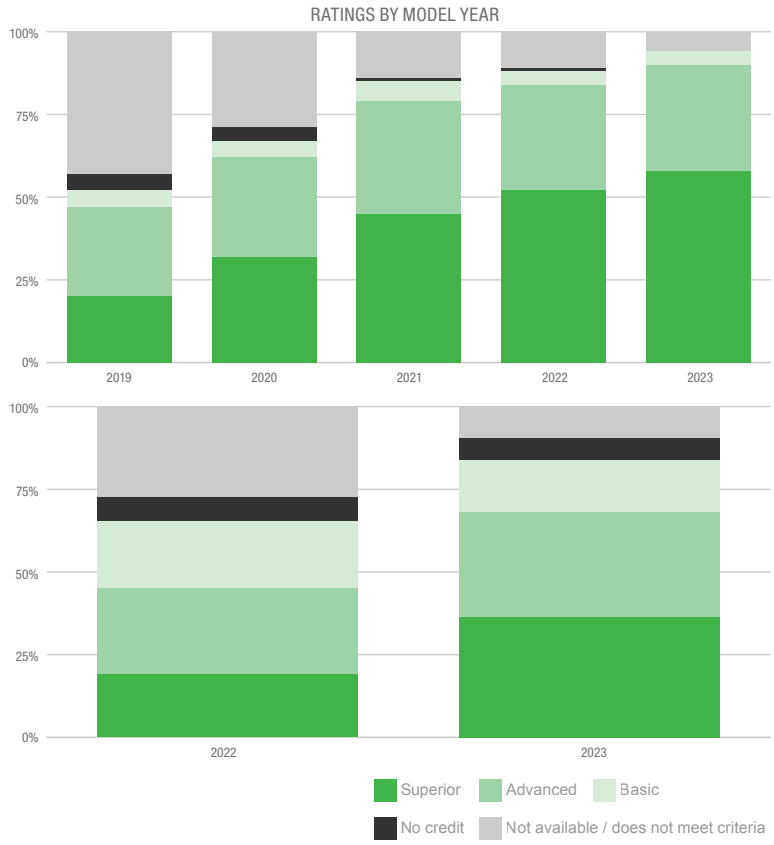
Pedestrian crash prevention • 2019-present

Daytime, 2019-23

Initially, all tests were conducted in daylight conditions, and systems were rated superior, advanced or basic.

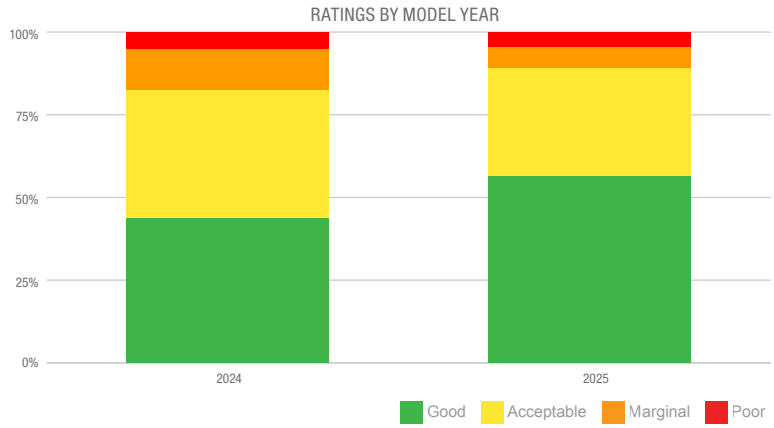
Nighttime, 2022-23

A nighttime test was added in 2022 after an IIHS study showed that most available systems didn't work well in the dark — which is when most fatal pedestrian crashes occur.



Combined, 2024-present

In 2024, the two tests were combined to create the current front crash prevention: pedestrian evaluation and the good/acceptable/marginal/poor scale was adopted.



Research shows that pedestrian AEB reduces pedestrian crash rates by a quarter. The value of a good-rated system compared with a poor one has yet to be established.

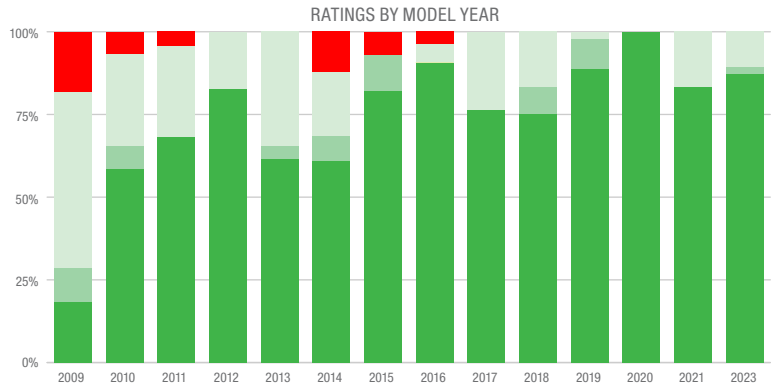
RESTRAINT USE

GIVING SAFETY-MINDED PARENTS A BOOST

Beginning in 2008, IIHS began looking for ways to increase the likelihood that child seats would be used consistently and correctly. First we targeted boosters, which are important safety devices for children who have outgrown child restraints with built-in harnesses

Booster seats • 2008-24

Boosters are supposed to make adult seat belts fit children better and are for kids who have outgrown their forward-facing restraints. Our ratings identified boosters most likely to provide good lap and shoulder belt fit. In 2017, we introduced a new dummy designed to make it easier for booster manufacturers to check their designs. In 2024, we retired this test because a majority of the boosters on the market earned the highest rating of BEST BET.



Research shows that children ages 4-8 are 45% less likely to sustain injuries in crashes if they are in boosters than if they are using seat belts alone. Presumably, increasing the proportion of boosters that provide good belt fit has improved those odds even further.

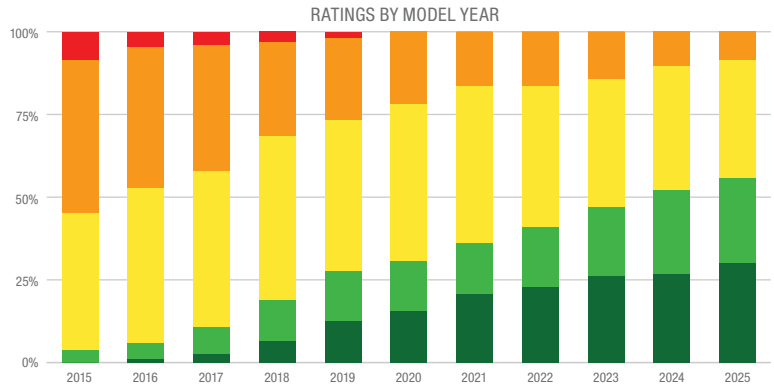
RESTRAINT USE

MAKING SURE SAFE IS ALSO SIMPLE

We zeroed in on the government-mandated Lower Anchors and Tethers for Children (LATCH) system next because a federal study showed more than 46% of children were riding in child safety seats that were being misused in a way likely to reduce protection in a crash. IIHS research has shown that child restraints are more likely to be installed correctly when LATCH is used.

LATCH • 2015-present

LATCH is a system of attachment hardware intended to make it easier to install front- and rear-facing child safety seats. Our ratings reflect how easy it is to achieve a correct, tight installation of a child restraint in the test vehicle when using the LATCH hardware. They're not a measure of the amount of protection the restraints provide.



LATCH systems that meet all the requirements for a good IIHS rating are 64% more likely to result in correct attachment of the lower anchors, while tethers are about 25% more likely to be used when they are easy to find, such as on the rear deck in sedans, and easy to identify with no confusing hardware nearby.

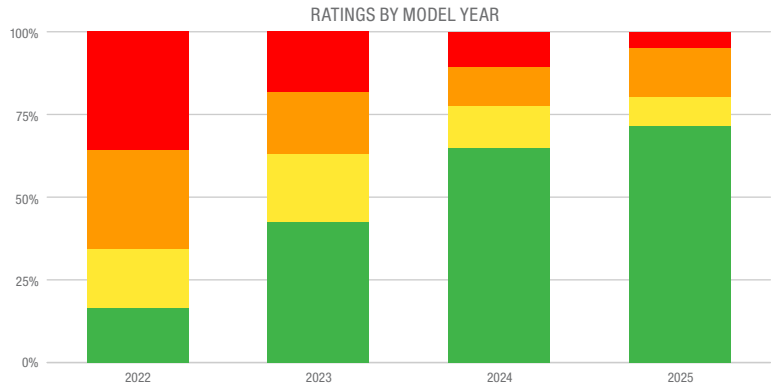
RESTRAINT USE

BELT USE FOR EVERYBODY

Next up, we targeted adults and older children, as about half of front-seat occupants and three-quarters of rear-seat occupants killed in crashes are typically not wearing seat belts.

Seat belt reminders • 2022-present

IIHS launched the seat belt reminder evaluation in 2022, following research that showed that louder and more persistent reminders than those required by law could get inconsistent belt users to buckle up.



For drivers and front-seat passengers, using a lap and shoulder belt reduces the risk of fatal injury by 60% in an SUV, van or pickup and by 45% in a car. IIHS research shows that enhanced reminders can increase belt use by around 30%.