

Status Report

Insurance Institute for Highway Safety | Highway Loss Data Institute

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64 vehicles earn safety awards

More vehicles come with standard autobrake

Good headlights are still mostly optional

What's behind pedestrian deaths on freeways?



Sixty-four cars and SUVs qualify for an award from the Insurance Institute for Highway Safety under new criteria that prioritize the protection of pedestrians in addition to vehicle occupants.

To qualify for a 2020 *TOP SAFETY PICK* or *TOP SAFETY PICK+* award, vehicles must have good ratings in each of the Institute's six crashworthiness evaluations. They must also have good or acceptable headlights and available front crash prevention that earns advanced or superior ratings in both vehicle-to-vehicle and vehicle-to-pedestrian evaluations.

The "plus" is awarded to models that come exclusively with good or acceptable headlights, making it easier for consumers to find properly equipped vehicles. Of the 64 award winners, 23 qualify for *TOP SAFETY PICK+*.

No minivans or pickups qualify for either award so far this year. That could change if automakers make midyear production changes and nominate the vehicle for testing.

"The headlight ratings that have been part of our awards criteria in recent years have pushed automakers to pay more attention to this essential equipment," says IIHS President David Harkey. "However, finding vehicles

with the right headlights can be a challenge for consumers. We wanted to reward automakers that have removed this obstacle."

Six of the "plus" winners — the Genesis G70, Honda Insight, Hyundai Nexo, Lexus NX, Subaru Crosstrek Hybrid and Tesla Model 3 — aren't sold with anything other than good-rated headlights. A good rating means headlights provide the best balance of visibility and lack of excessive glare for drivers of oncoming vehicles.

Good visibility is key to avoiding crashes in the dark. In the time it takes a driver to react to an obstacle under ideal conditions — 1½ seconds — a car traveling 55 mph covers about 120 feet. Headlights need to illuminate obstacles well before that. The difference between good-rated headlights and poor ones can be the difference between seeing an obstacle in time to stop and crashing into it.

Front crash prevention

Although consumers who buy a *TOP SAFETY PICK+* can be assured that any trim line they choose will be equipped with adequate headlights, they'll still need to make sure their particular vehicle is equipped with front crash prevention. Vehicles can meet

the front crash prevention requirements for either award with optional equipment.

However, 20 *TOP SAFETY PICK+* winners and 26 *TOP SAFETY PICK* winners come with standard systems, as automakers move to meet their voluntary commitment on automatic emergency braking (AEB). The commitment calls for front AEB to be standard on all but the heaviest passenger vehicles by 2022 (see p. 4).

The voluntary commitment calls only for systems that avoid crashes with other vehicles, but many automakers are incorporating vehicle-to-pedestrian functionality.

IIHS launched pedestrian crash prevention ratings about a year ago (See "New ratings address pedestrian crashes," Feb. 21, 2019) and is incorporating them into the *TOP SAFETY PICK* and *TOP SAFETY PICK+* awards for the first time.

Vehicles are evaluated in three scenarios: an adult pedestrian stepping into the street in the path of the oncoming vehicle with an unobstructed view, a child darting into the street from behind two parked cars, and an adult pedestrian near the side of the road in the travel lane, facing away from traffic. Each test is conducted at two different speeds. »


2020 TOP SAFETY PICK+

These models have **standard** good or acceptable headlights.

Small cars	Honda Insight Mazda 3 hatchback Mazda 3 sedan Subaru Crosstrek Hybrid
Midsized cars	Mazda 6 Nissan Maxima Subaru Legacy Subaru Outback built after October 2019 Toyota Camry
Midsized luxury cars	Lexus ES Mercedes-Benz C-Class sedan; with optional front crash prevention Tesla Model 3
Large luxury cars	Audi A6 Genesis G70 built after December 2019 Genesis G80
Small SUVs	Mazda CX-3 Mazda CX-5 with optional front crash prevention Subaru Forester
Midsized luxury SUVs	Acura RDX Cadillac XT6 built after October 2019 Hyundai Nexo Lexus NX Mercedes-Benz GLE-Class built after July 2019; with optional front crash prevention

All 2020 award winners have:

G Good ratings in the driver-side and passenger-side small overlap front, moderate overlap front, side, roof strength and head restraint tests

 Advanced or superior rating for front crash prevention in both vehicle-to-vehicle and vehicle-to-pedestrian tests

For details on these and other vehicles go to [iihs.org/ratings](https://www.iihs.org/ratings).

2020 TOP SAFETY PICK

Good or acceptable headlights are **available** on these models, but not standard. The vehicles qualify for the award only when equipped with those headlights.

Small cars	Honda Civic coupe Honda Civic hatchback; does not apply to Type R variant Honda Civic sedan Hyundai Elantra with optional front crash prevention Hyundai Elantra GT with optional front crash prevention Hyundai Veloster with optional front crash prevention Kia Forte with optional front crash prevention Kia Soul with optional front crash prevention Subaru Crosstrek with optional front crash prevention Subaru Impreza sedan; with optional front crash prevention Subaru Impreza wagon; with optional front crash prevention Subaru WRX with optional front crash prevention Toyota Corolla hatchback Toyota Corolla sedan
Midsized cars	Honda Accord Hyundai Sonata Nissan Altima with optional front crash prevention
Midsized luxury cars	BMW 3 series Volvo S60
Large car	Kia Stinger with optional front crash prevention
Large luxury car	Audi A7
Small SUVs	Chevrolet Equinox Ford Escape Honda CR-V Hyundai Kona with optional front crash prevention Hyundai Tucson with optional front crash prevention Kia Sportage Lexus UX Lincoln Corsair Toyota RAV4 Volvo XC40
Midsized SUVs	Ford Edge Hyundai Palisade Hyundai Santa Fe Kia Sorento with optional front crash prevention Kia Telluride Mazda CX-9 with optional front crash prevention Subaru Ascent Volkswagen Tiguan
Midsized luxury SUV	Lexus RX
Large SUV	Audi Q8

(« from p. 2) Pedestrian detection technology is one solution that could help address rising pedestrian deaths. Annual pedestrian fatalities have increased 53 percent since reaching a low point in 2009, and more than 6,000 pedestrians were killed in crashes in 2018.

“Rewarding vehicle technology that protects other road users is new territory for the *TOP SAFETY PICK* awards, but we believe vehicle manufacturers have an important role to play in protecting vulnerable road users,” Harkey says.

Good protection for passengers

This is the first year that a good passenger-side small overlap front rating is required for both awards. Last year, a good or acceptable rating was required for *TOP SAFETY PICK*, while a good rating was needed to achieve the “plus.”

The passenger-side small overlap evaluation is the newest of the IIHS crashworthiness tests. The Institute launched this test after it became clear that some manufacturers were ignoring the passenger side as they made changes to improve performance in the IIHS driver-side small overlap test.

The small overlap tests are designed to replicate what happens when just the front corner of the vehicle collides with another vehicle or an object like a tree or pole. These crashes present a challenge for some seat belt and airbag designs because occupants move both forward and to the side of the vehicle. Also, crash forces can bypass the vehicle’s main crush-zone structures.

Mazda, Hyundai are standouts

Among automakers, Mazda has the most *TOP SAFETY PICK+* awards with five — for the Mazda 3 sedan, Mazda 3 hatchback, Mazda 6, CX-3 and CX-5. The company earns a *TOP SAFETY PICK* for the CX-9.

Hyundai Motor Group — which includes the Genesis and Kia brands in addition to Hyundai — has the most winners overall, 14 earning a *TOP SAFETY PICK* award and three earning *TOP SAFETY PICK+*.

No vehicles from Fiat Chrysler or Mitsubishi earn either award this year. Ford/Lincoln, Volvo and BMW haven’t picked up any *TOP SAFETY PICK+* awards, while General Motors and Nissan each earn only one *TOP SAFETY PICK* and one *TOP SAFETY PICK+* award. ■

Automakers make progress on standard autobrake

Four automakers equipped virtually all the light vehicles they produced for the U.S. market between Sept. 1, 2018, and Aug. 31, 2019, with automatic emergency braking (AEB), three years ahead of a 2022 target.

Audi and Volvo joined Mercedes-Benz and Tesla, which hit the target last year, in outfitting all their light passenger vehicles with the crash avoidance technology, according to manufacturer reports.

front crash prevention. Pedestrian crash prevention isn’t part of the voluntary commitment, but many automakers have been adding it to their standard autobrake systems anyway.

Of the 64 *TOP SAFETY PICK* and *TOP SAFETY PICK+* winners, 46 have standard vehicle-to-vehicle and vehicle-to-pedestrian AEB that meet the award criteria.

In addition to the four automakers that reached 100 percent, seven more



In total, several million more vehicles were produced with AEB, compared with the previous year.

The reports are submitted annually as part of a voluntary commitment by 20 manufacturers to equip all but the heaviest passenger vehicles with the crash avoidance technology by Sept. 1, 2022. The commitment was brokered in 2015 by IIHS and the National Highway Traffic Safety Administration (NHTSA).

The performance requirements under the agreement correspond to an advanced rating in the IIHS vehicle-to-vehicle front crash prevention test. An advanced or superior rating is needed to qualify for the 2020 *TOP SAFETY PICK* or *TOP SAFETY PICK+* award.

The awards also require an advanced or superior rating for vehicle-to-pedestrian

manufacturers — Toyota, Volkswagen, BMW, Nissan, Honda, Subaru and Mazda — equipped more than 8 out of 10 new vehicles with AEB in 2019.

The data reported by automakers shows that more than 9 million vehicles were equipped with AEB during this reporting period. That’s about 30 percent more than the previous year.

The 2022 target date applies to light-duty cars and trucks with a gross vehicle weight of 8,500 pounds or less. Automakers also committed to installing AEB on vehicles in the 8,501-10,000-pound range by September 2025.

IIHS estimates that the commitment will prevent 42,000 crashes and 20,000 injuries by 2025. Front crash prevention systems with AEB reduce rear-end crashes by half, IIHS research indicates. ■

Despite new award criteria, headlights are still an afterthought on many vehicles

Many more vehicles are available with headlights that illuminate an acceptable distance ahead without blinding oncoming drivers in 2020 than in previous years. Yet base models with good-rated headlights remain rare.

headlights across the board. On another 31 models, acceptable headlights are the lowest-rated ones that are offered. That marks a 7 percent increase over the number of 2019 models available exclusively with good or acceptable headlights. The 2020

When good-rated headlights have been offered as an option, manufacturers haven't always produced vehicles equipped with them in large numbers, however.

"We try to rate all the headlights offered by each manufacturer, but sometimes it's a



The Lexus NX, pictured here, is one of only six model year 2020 vehicles IIHS has evaluated so far that come equipped with good-rated headlights across all trim levels. For many others, good-rated headlights are expensive options, and 30 models are available exclusively with headlights rated poor.

"Many carmakers still treat high-quality headlights as extras, rather than essential safety features," says David Aylor, manager of active safety testing at IIHS. "Leather seats and sunroofs are nice, but you need high-quality headlights to avoid hazards."

About half of all fatal crashes in the U.S. occur in the dark, and more than a quarter occur on unlit roads. Nevertheless, manufacturers have historically sold many models with several different headlight systems of varying quality.

For the first time in 2020, headlights that earn at least an acceptable rating must be installed across all the variants for sale, rather than merely available as options, for a vehicle to qualify for the highest IIHS award, *TOP SAFETY PICK+*.

Only 6 of the 156 models that IIHS has rated so far come with good-rated

results could change as the Institute evaluates additional models and manufacturers implement midyear changes.

Out of the 37 models with standard good or acceptable headlights, 23 earn the *TOP SAFETY PICK+* award. The other 14 fall short on other crashworthiness or collision avoidance criteria.

On the other side of the spectrum, 30 of the 2020 models tested can only be purchased with poor headlights, compared with 36 in 2019.

Manufacturers have also continued their more rapid progress in offering good headlights as options. When IIHS began rating headlights in 2016, the best-available headlights on only two of the 95 models IIHS tested earned a good rating. In 2020, good-rated headlights are available on 55 out of 156 models evaluated.

struggle to find some of the optional, high-end systems at local dealerships," says Aylor. "If we have trouble finding them to test, how can consumers be expected to find them to purchase?"

IIHS rates headlights on the distance that they illuminate the road as the vehicle travels straight and on curves. The tests evaluate both low beams and high beams. On a straightaway, good-rated low beams illuminate the right side of the road ahead to at least 325 feet. Poor ones might light up 220 feet or even less.

IIHS engineers also deduct points for headlights that produce glare that can momentarily blind oncoming drivers. Extra credit is awarded for systems that automatically switch between high beams and low beams, since research shows that most drivers don't use their high beams enough. ■



Land use plays a role in pedestrian freeway fatalities

After a fifth pedestrian was killed this year crossing Interstate 35 in Austin, Texas, a local headline expressed the city's frustration. "Why does it keep happening?" the local ABC affiliate asked. Since then, the death toll has reached 13.

Austin is not alone in wondering why this happens and what can be done. In recent years, more than 800 pedestrians annually have been killed on U.S. interstates and other freeways. The largest number of them were hit attempting to cross in urban areas, a new study from the Insurance Institute for Highway Safety finds.

The researchers zoomed in on California for a more detailed analysis and found that most of the fatal crossing crashes there

occur where the freeway separates residential areas from commercial and other non-residential areas.

Many U.S. cities have interstates or other major highways cutting through them and separating neighborhoods. Planning decisions made decades ago are difficult to undo, but communities can take practical steps to keep pedestrians safe.

"Our findings suggest that localities with residential communities across the freeway from shopping centers, bus stations or entertainment districts should consider physical barriers that prevent pedestrians from crossing — especially if the commercial centers include bars or liquor stores," says Jessica Cicchino, IIHS vice president for research.

Indeed, a fence along the median to discourage crossers is one of the changes Austin police would like to see on I-35.

Most of those killed crossing I-35 are homeless people, who often live in tents or makeshift dwellings on the roadside, says Austin Police Department Detective

Patrick Oborski. Over the years, he has also seen many fatalities at Capital Plaza near 51st street, where there are low-income hotels and motels on one side of the freeway and a McDonald's and other fast food restaurants on the other.

"That's one of the areas that's consistently been a hot spot for us," Oborski says.

Across the country, pedestrian fatalities increased 53 percent from 2009 to 2018 and now account for 17 percent of traffic deaths (see "Study highlights rising pedestrian deaths, points toward solutions," May 8, 2018). Pedestrian fatalities on interstates and other high-speed, controlled-access roads increased by 60 percent over the same period. From 2015 to 2018 more than 800 pedestrians were killed on such roadways annually.

To get a clearer picture of when, where and why those deaths are happening, researchers analyzed data from the federal database of fatal motor vehicle crashes over 2015-17. They looked at various crash characteristics, such as whether or not the

IIHS RESEARCH

"Fatal pedestrian crashes on interstates and other freeways in the United States"

by J. Wang and, J.B. Cicchino

To request this paper, email researchpapers@iihs.org.

person killed was an “unintended” pedestrian stranded due to a disabled vehicle.

For California, where the largest number of pedestrians were killed crossing interstates and freeways during the study period, the researchers also identified the types of land use on both sides of the roadway at the places people were killed while crossing.

Nationwide, most of the 2,518 pedestrian fatalities on freeways and interstates from 2015 to 2017 occurred in urban areas, at night and in the dark. More than half of fatal crashes were in locations with a speed limit of 65 mph or higher, notes IIHS researcher Jin Wang, the study’s lead author.

“Darkness and speed often come into play in pedestrian crashes, but these factors are exaggerated on interstates and freeways,” says Wang. “That suggests better-lit roadways and better headlights could make a difference.”

IIHS ratings have demonstrated wide differences in how well various headlights illuminate the road (see “Headlights improve, but base models leave drivers in the dark,” Nov. 29, 2018), and past research has shown that drivers do not use their high-beam headlights as often as they should (see “Few drivers use their high beams, study finds,” March 30, 2016).

Speed is perhaps the most important risk factor. On average, 9 out of 10 pedestrians who are hit by a vehicle traveling at 55 mph die as a result of their injuries, and that number increases at higher speeds.

Only 18 percent of the pedestrians killed were on the freeway because of a disabled vehicle. About a third of those killed had a blood alcohol concentration of 0.08 percent or higher, and 42 percent were attempting to cross the freeway.

In the analysis of California, the researchers found that nearly 3 out of 5 people killed while crossing freeways were at points with residential land on one side and commercial, transportation, recreational, institutional or industrial property on the other. Only 13 percent of fatal crossing crashes occurred in spots with residential land on both sides of the road.

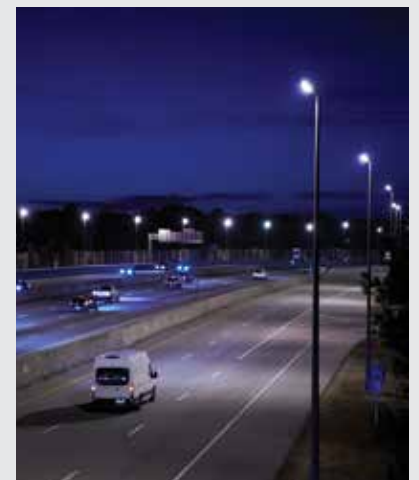
The findings suggest that a combination of better lighting, physical barriers preventing pedestrians from crossing at road level, and correctly designed overpasses and underpasses to allow people to cross safely could greatly reduce the number of fatalities. ■



A chain-link fence is intended to prevent pedestrians from crossing this freeway that cuts through downtown San Diego, but an open gate allows people to ignore the danger for the sake of the shortcut.



A combination of measures is likely needed to address the problem of pedestrian crashes on freeways. Physical barriers, underpasses and overpasses to allow people to safely cross, and better lighting could all help reduce the toll.



IHS is an independent, nonprofit scientific and educational organization dedicated to reducing the losses — deaths, injuries and property damage — from motor vehicle crashes.

HLDI shares and supports this mission through scientific studies of insurance data representing the human and economic losses resulting from the ownership and operation of different types of vehicles and by publishing insurance loss results by vehicle make and model.

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Inquiries/print subscriptions:
StatusReport@iihs.org

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Editor: Sarah Karush

Writer: Jason Overdorf

Art Director: Steve Ewens

Photographers: Steve Ewens,
Craig Garrett, Dan Purdy

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