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Automatic Emergency Stop Assist: Big Brother Tech You Actually Want Watching You Drive

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Audi and other luxury brands are including automatic

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emergency stop assist technology in its cars to monitor drivers and step in if the driver is too distracted or incapacitated. *Audi*

Whether it's texting, talking, or fiddling with the radio, distracted driving is well-documented as a cause of crashes. But unexpected medical emergencies are another hazard that endangers drivers and their passengers, causing them to lose control of the vehicle they're piloting. A new feature baked into new cars may mitigate the impact of these unpredictable—and often fatal—events.

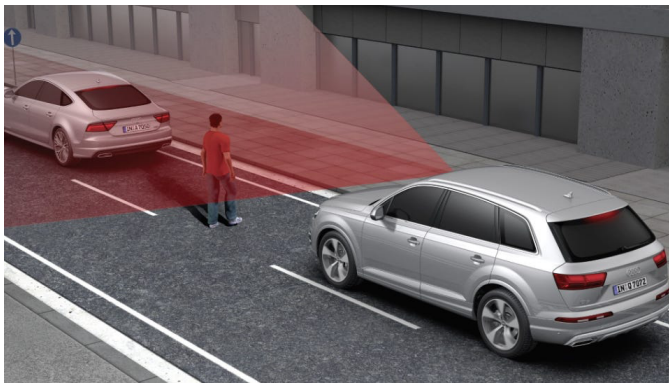
Next-generation advanced driver assistance systems (ADAS) are taking active safety one step further, and are more actively stepping in to prevent these types of crashes. Automatic emergency stop assistance is a new technology that monitors the driver from inside the vehicle, and it leverages on-board highly autonomous driving technology already available to take control of the vehicle in case the driver is incapacitated.

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Traffic collisions precipitated by a medical emergency are relatively rare. The National Highway Traffic Safety Administration found they account for only 1.3% of crashes, based on a 2009 study. More recent data is difficult to find, but as the U.S. population ages, the risk of crashes because of a medical emergency is expected to increase.



Automatic emergency stop assist is more about monitoring the driver inside the car than what's happening outside the car which is deployed with most automatic emergency braking systems. *Audi*

What is Automatic Emergency Stop Assistance?

Despite their similar names, automatic emergency stop assistance is not the same thing as automatic emergency braking.

Automatic emergency braking uses

radars or cameras (or both) to measure the speed and distance between the vehicles ahead of it. If it detects that the vehicle is in imminent danger of a collision with another vehicle or obstacle ahead of it, it may warn the driver to apply the brakes. If the driver fails to apply the appropriate amount of pressure, the system will automatically engage the brakes to prevent or mitigate the severity of a crash.

With automatic emergency stop assistance, it monitors the behavior of the driver inside the vehicle. These driver monitoring systems (DMS) operate in conjunction with adaptive cruise control, lane keeping assistance and other ADAS features that, when activated, can detect whether or not the driver is paying attention. If inattention is detected, the DMS will attempt to alert the driver through a series of warnings that encourages them to re-engage with the vehicle by reverting their eyes to the road or putting hands on the wheel, or both. If the driver fails to react, the DMS begins to take

control of the vehicle and then attempts to bring the vehicle to a controlled stop.

How Does Automatic Emergency Stop Assist Work?

The technology used by automatic emergency stop assist varies by manufacturer and vehicle. Some systems use one or more driver-facing infrared cameras embedded in the vehicle's cabin to track the pilot's eyes and head position.

Software can monitor the pattern of head and eye movement in real time to determine if the driver is beginning to nod off or close their eyes, even when wearing sunglasses, as seen in [General Motors' Super Cruise](#) hands-free driving system. Most DMSs, like [Tesla's Autopilot](#), measure pressure on the steering wheel to determine driver attentiveness.

If the system detects driver inattention, the vehicle may alert the driver through audible alarms, visual

warnings, steering wheel vibrations or brake jolts to bring attention back to the road. If the driver is incapacitated because of a medical emergency or is literally asleep or passed out at the wheel, a takeover sequence will begin.

Depending on the manufacturer's DMS procedures and the vehicle's technology capabilities, the system can automatically bring the vehicle to a controlled stop in its lane or may attempt to pull over to the side of the road if it's equipped with lane-changing capability. Most systems will activate the hazard lights, use its telematics system to contact emergency response services and unlock the doors for easier entry into the vehicle.



Ford's BlueCruise is one of the hands-free driver monitoring systems available in select models that can detect if a driver is paying attention to the road. General Motors' Super Cruise offers a similar assistance

Which Vehicles Have Emergency Auto Stop Assistance?

Automatic emergency auto stop assistance is a relatively new technology, and started as an optional feature for luxury brands, such as [Audi vehicles](#) equipped with available “Emergency Assist.” The soon-to-be-discontinued Audi Q2 and [Q5 SUV](#) have featured the automatic emergency tool for several years.

Labeled as “Active Emergency Stop Assist” in Mercedes-Benz vehicles, it’s now a standard feature in many of the German brand’s products, like the pioneering [S-Class](#), and the safety tech is slowly making its way into more mainstream marques.

Some Cadillac, GMC and Chevrolet models, like the [Chevy Traverse](#), have Enhanced Automatic Emergency Braking available, which works at higher speeds using radar and cameras. But for true driver

monitoring, GM vehicles with the Level 2 driver-assist Super Cruise system (like on the [Cadillac Escalade](#), [GMC Sierra 1500](#) or [Chevy Bolt EUV](#)) watch the driver's eye gaze and head position when the hands-free system is active. Ford and Lincoln vehicles operating with BlueCruise and ActiveGlide, respectively, as in the [Ford Mustang Mach-E](#) and [Lincoln Navigator](#) also have similar driver monitoring technology that can bring vehicles to a stop if it detects the driver not paying attention to the road.

Will Vehicles be Required to have Automatic Emergency Stop Assist?

While the European Union passed a law in 2020 mandating that all-new vehicles made after June 2022—and those refreshed after 2024—have camera-based driver monitoring systems, the U.S. has not made similar requirements for automotive manufacturers. The new regulation is expected to prevent 140,000 serious injuries in the EU.

Although similar legislation targeting distracted driving has been introduced in the U.S., congress has yet to pass it. [The bills](#) would require technology to detect driver impairment and distraction in all new vehicles by 2027.

Until it's required, automatic emergency stop technology may remain a lifesaving feature that only luxury buyers can afford. But if car shopping for older or highly distracted drivers, it can be an important extra to consider while browsing options.

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I'm an automotive technology and lifestyle writer covering alternative powertrains, transportation startups, next-generation infotainment systems, and basically anything could "disrupt" your daily commute. My work has appeared in CNET.com, TheDrive.com, CNN.com, and several print and online publications.

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