



VEHICLE SAFETY FEATURES STILL NEED SAFE DRIVERS



Traffic Injury Research Foundation
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Do you remember the excitement of buying or leasing the vehicle you currently drive? If you are like most people, safety was an important factor in your choice. Manufacturers have worked to improve or develop new safety features, or advanced driver assistance systems (ADAS), which provide a lot more protection on the road. As manufacturers continue to deploy these technologies, governments around the world are actively evaluating their performance and establishing the groundwork for future regulations that will, over time, make many of these features standard on all vehicles.

But did you know your attentiveness and engagement in the driving task influences how much protection at least some of these safety features provide? There are two types of vehicle safety features. Active safety features actively work to sense and monitor the vehicle's driving dynamics, traffic and/or road conditions and engage to prevent or mitigate crashes. These features support drivers and address unexpected conditions or situations posing an immediate threat. Some features engage with driver input whereas others do so automatically. Passive safety features are designed to protect against death and serious injury in a crash (e.g., crumple zones, airbags and headrests).

While increasingly advanced safety features keep us safe, research shows some drivers may become over-confident and take

more risks, or even rely on these features¹ in situations for which they were not designed. This misconception can result in drivers paying less attention, leaving them unprepared to respond to unexpected events.² We've all encountered construction zones, large trucks turning, cyclists swerving to avoid a pothole, or drivers not signalling lane changes. In these cases, delayed driver reactions mean some active safety features don't engage as quickly and have less time and distance to work.

So, even experienced drivers who drive the same route every day must be attentive and alert so the full benefits of active safety features can be realized. To maximize the protection offered by active safety features, this fact sheet summarizes some important technologies and tips to avoid a costly collision.

Examples of Advanced Driver Assistance Systems (ADAS)

Traction control: When the vehicle senses the wheels slipping, traction control seeks to make the most use of available traction and helps maintain traction when accelerating. It cannot create traction where none exists.³ When it senses one or more wheels beginning to slip, it adjusts wheel braking or delays power delivery to the wheels to help you keep control.

Electronic stability control (ESC): This system, also known as Dynamic Stability Control, Vehicle Stability Control, or Dynamic Stability, monitors vehicle speed, driver steering, and the side-to-side movements (or yaw) of the vehicle. These data determine if the driver is still in control or losing control. When it senses loss of control, ESC stabilizes the vehicle to help the driver regain control by shifting power to other wheels,⁴ and is particularly effective at reducing rollover collisions and/or single-vehicle collisions where drivers skid off the road.⁵ But, it cannot prevent low-speed traffic incidents such as fender-benders or compensate for poor road conditions or high speeds.

Brake assist: Brake assist, also called Emergency Brake Assist and Predictive Brake Assist, helps drivers stop faster during panic braking by boosting the braking power. Research shows 50% of drivers fail to hit their brakes fast enough or hard enough to maximize braking power and brake assist helps you do this. But if the braking input is not sufficiently hard, or is not maintained, the booster may not fully engage or engage at all.⁶

What drivers need to know about active ADAS

- > Advanced driver assistance systems increase safety. They do not replace attentive and alert drivers; they support drivers in taking action to avoid or mitigate negative outcomes.
- > Drivers should familiarize themselves with safety features on their vehicle before a collision occurs; during a collision is the wrong time to figure it out.
- > Always wear your seatbelt. It is still the most effective safety feature. It prevents injuries from contact with the steering wheel, dash and windshield, as well as injury from contact with other occupants in the vehicle and ejection from the vehicle.
- > Safety features prevent or reduce the severity of collisions, but when a collision does occur, repairs can be more costly.

Footnotes 1-6 see <https://tirf.ca/tirf-research/infographic-sources/>

Traffic Injury Research Foundation

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ISBN: 978-1-989766-76-7

This factsheet was made possible by a charitable donation from Consolidated Collision Services in partnership with RSA Canada.

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