

Front air bag safety technology *made simple*

By Allan Lamb and Bob McHugh

They've been in cars since the early nineties and at last count, more than 22,000 people are alive today because of frontal airbags, according to US National Highway Traffic Safety Administration (NHTSA).

Air bags have changed over the years. They've shrunk in size and they're smarter! While there's no denying the effectiveness of these supplementary safety devices, there's still a danger when a large bag suddenly pops out of the steering wheel or the dashboard – and fully inflates in less than 1/20th of a second (the blink of an eye), with a bang!



Air bags are smaller today and while they're "smarter," use of a seat belt is still required to ensure maximum benefit in a crash.



Front air bags work together with side air bags and other new safety technologies to protect drivers and passengers.

These days, it's easy to forget that your new car even has front air bags. The passenger side bag is almost completely concealed in the dashboard and the steering wheel bag is no bigger than an old-fashioned horn-push, and it likely is one.

If you drive a '90s vintage car it probably has first-generation air bags – the most aggressive type. By the late nineties auto manufacturers had switched to bags that deployed with less force and today, third-generation advanced dual-stage or multiple-stage deployment air bags are used.

Regardless of what type of air bags are in your car, they should be respected! So heed those sun visor warnings. To reduce the risk of being injured by an air bag, Transport Canada recommends the following precautions:

- 1) Always wear your seat belt.
- 2) Adjust the seat belt properly. Place the lap belt as low as possible over the hips – not over the abdomen. Ensure the shoulder belt lies on the chest and over the shoulder. Do not leave any slack in the belt.
- 3) Adjust the vehicle's front seats as far to the rear as possible to give the air bags as much room as possible in which to inflate.

Front air bags are only designed to deploy in a "moderate to severe" frontal or near-frontal crash. The force required is generally equivalent to striking a similar-size parked car at about 25 km/hour or higher. If you hit a fixed object or another speeding vehicle, however, it can deploy at a lower speed threshold.

Which brings me to the most important injury concern with front air bags – children! Simply put, air bags and kids do not mix. Rear-facing infant restraints should never be used in front seats with active frontal airbags. And all children under 12 (regardless of size or weight) are safer seated in the back, away from a front air bag.

Even a belted child can be at risk if they wiggle out of position or sit on the edge of the seat to fiddle with radio dials, for example. If a front seat

Drive to Save Lives

Adjust the front seats in your vehicle to give the air bags as much room as possible in which to inflate.

A safety tip from the BCAA Traffic Safety Foundation



is the only seat available it should be all the way back and the child should be sitting back, belted or in an appropriate child restraint seat.

Most two-passenger vehicles have a front passenger air bag deactivation switch. Check the owner's manual on how this functions.



Wearing a seat belt reduces the risk of injury caused by the rapid deployment of an air bag, which fully inflates in less than 1/20th of a second.

Airbag technology is under continuous development. A study by NHTSA in 2006 reported that redesigned airbags have reduced fatality risk to child passengers by 45 percent, without changing the beneficial effects for adults.

Thankfully, most of the injuries caused by air bags are minor scrapes and abrasions. The inflation gas inside an air bag is harmless, typically nitrogen or argon. That "smoke" you see in demo videos is just cornstarch or talcum powder, which is used to aid air bag deployment.

Adjusting your driving habits will also reduce the risk of an air bag injury. For instance, driving with one hand on the top of the steering wheel is not

a good practice. If the air bag should suddenly inflate, you'd probably give yourself a punch in the face or fracture an arm, or both.

We'll be looking at side and other types of air bag technology in future columns. If, however, you've got an urgent question about air bags you can also call Transport Canada's toll-free Road Safety Information Centre at: 1-800-333-0371.

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