

A stylized, minimalist illustration of a car's interior. The steering wheel is white with a green center. The dashboard and center console are depicted with white outlines and some green accents. The background is a solid light green color.

AIR BAG

deactivation

What you need to know
to make an informed decision

INTRODUCTION

Air bags are proven, effective safety devices. Between 1990 and 2000, inclusively, air bags saved approximately 313 lives in Canada, a number that increases each year as air bag installation becomes more common in the vehicles on our roads.

However, the number of lives saved does not tell the whole story. Air bags offer particularly effective protection against potentially fatal head or chest injuries and injuries that could leave the accident victim disabled. A study of actual crashes conducted in the United States by the National Highway Traffic Safety Administration (NHTSA) shows that the combination of seat belts and air bags reduces the risk of serious head injuries by 75% and serious chest injuries by 66%. That means that a number of severe injuries were avoided because the motorists were wearing their seat belt and their vehicle was equipped with air bags.

For some people, the advantages of air bags come at the cost of less severe injuries caused by the deployment of the air bag itself. Most air bag injuries are minor cuts, bruises or abrasions and are far less serious than the skull fractures and brain injuries that air bags prevent. However, since 2001, seven people have been killed by air bags in Canada. These deaths are tragic but rare events. In 2005, for example, 151,731 collisions occurred in Canada resulting in 210,629 injured persons and 2,923 deaths.

The sole factor common to all who died IS NOT their height, weight, sex or age, but rather the fact that they were too close to the air bag when it started to deploy.

By making simple changes to their habits, most people can avoid being too close to the air bag and can reduce the risk of serious injury when the air bag deploys. Short drivers can adjust their seating position. Front seat adult passengers can make sure that they are a sufficient distance from their air bag. Infants and children age 12 and under should always sit in the rear seat.

Everyone must wear a seat belt or be properly restrained by another safety device. All provinces and territories have legislation that has made it mandatory for all vehicle occupants to wear a seat belt and for children to be seated in appropriate seats. In Québec, the **Highway Safety Code** provides that all children whose sitting height is less than 63 cm must be secured in an appropriate seat. Only a small number of people who are not able to follow these recommendations may benefit from turning off their air bag.

Consumers can choose to have their vehicle's air bags deactivated if they or another user of their vehicle are in a risk group described below. In most cases, air bags will be deactivated using an on-off switch installed by the dealer or another service technician. However, there are other deactivation methods.

Several types of air bags are available: front, side, side curtain and knee. This guide addresses deactivation of front air bags. There are no major problems with the other types of air bags. Simply follow the manufacturer's instructions and assume a normal sitting position, without leaning your head against the air bag cover.

The following information should help you make an informed decision.

? **Who should consider having their air bag deactivated?**

- Persons who **have no choice** but to transport an infant in a rear-facing infant seat in the front passenger seat.
- Persons who **have no choice** but to transport children age 12 and under in the front passenger seat.
- Drivers who **cannot** change their customary driving position and maintain a distance of 25 cm between the centre of the steering wheel, where the air bag is stored, and the middle of their breastbone.
- Persons who have received a notice from a physician, explaining that, due to health problems, the air bag poses **a risk that is greater** than the risk of hitting their head, neck or chest in a crash if the air bag is turned off.

If you or anyone else who uses your vehicle does not fall into one of the above categories, **you have no reason to consider turning off your air bags**. Deactivating any of your vehicle's air bags will not benefit you or other passengers in any way. Instead, it would increase the risk of sustaining a head, neck or chest injury by violently striking the steering wheel or dashboard in a crash, regardless of the severity of the accident.

? **What is an on-off switch?**

It is a device that allows an air bag to be turned on and off. It can be installed on the driver's side, on the passenger's side or on both sides. To prevent misuse of the switch, a key must be used to operate it. When the air bag is turned off, a light comes on, with a message.

The air bag remains off until the key is used to turn it back on. The on-off switch is preferable to permanent deactivation.

? **What steps can I take to reduce the risks associated with air bag deployment if I do not have an on-off switch?**

- **Always place an infant in a rear-facing infant seat in the rear seat (in the centre, if possible).**
- **Always place children age 12 and under in seats that are appropriate for their weight and height and are secured to the rear seat.**
- **Always wear your seat belt. It is the law in Québec and other provinces.**
- **Keep a distance of 25 cm between the centre of the air bag cover and the middle of your breastbone.**

Most people do not need to turn off their air bag. Almost everyone age 13 and over is safer with air bags. This applies to short people, tall people, older people, pregnant women... in fact, to everyone, male or female, who buckles their seat belts and who can sit far enough back from their air bag. Ideally, you should sit with at least 25 cm between the middle of your breastbone and the centre of the air bag cover. The greater this distance, the lower your risk of being injured by the air bag and the higher your chances of survival because of it. If you can maintain a distance of around 25 cm, the air bag will protect you in a crash.

WHY SOME PEOPLE ARE AT RISK



? *How can air bags lead to loss of life?*

To fulfill its role properly, an air bag must deploy quickly. The force is greatest in the first 8 cm of travel, when the bag begins to inflate. Those 8 cm are the "risk zone." The force of deployment decreases beyond this zone.

Occupants who are very close to or in contact with the air bag cover when the air bag deploys can be hit with enough force to be seriously injured or killed. However, people who wear their seat belt and sit 25 cm away from the air bag cover will make contact with the air bag after it has completely or almost completely inflated. The air bag will then absorb the kinetic energy of the occupants and prevent them from hitting the hard surfaces in the vehicle.

The way an air bag works is presented later in the brochure.

? *Do children and adults face the same risks?*

Yes, both children and adults face the same risks if they are too close to the air bag or if they are not properly restrained. Adults and children have died from injuries resulting from the deployment of air bags.

REDUCE THE RISKS



? *What is the safest way to be seated in front of an air bag?*

First, slide your seat back and buckle your seat belt each time you enter the vehicle. The lap belt must be positioned over your hips, not your abdomen. The shoulder strap must rest on your chest and your shoulder. Tighten your belt so that there is no slack. In a crash, seat belts tighten and slow your movement toward the steering wheel or dashboard. By taking these last few precautions, you give the air bag time to deploy before reaching it.

? *How can I best protect my children?*

Never install a rear-facing infant seat on the front passenger seat if the vehicle is equipped with a passenger-side air bag. **Always** place this type of carrier on the rear seat (in the centre, if possible). All children age 12 and under should be seated on the rear seat.

On occasion, children must sit in front because:

- the vehicle has no rear seat,
- there are more children than there are places on the rear seat, **or**
- a child suffers from a medical condition that requires that he or she be monitored.

When a group of children must be transported, it is best to use a second vehicle to avoid having a child sitting in the front seat. **Move the vehicle seat back.**

If children must sit in the front seat, they must wear a seat belt and/or be placed in a child restraint appropriate for their height and weight (see the table at the end of this document) and sit against the back of the vehicle seat. The vehicle seat must be moved as far back from the air bag as possible. Make sure that the child's shoulder belt remains in place. If adult seat belts do not fit properly on the hips and over the shoulder, use a booster seat. Children must never ride on the lap of another passenger.

The brochure entitled ***Child Safety Seats—Secure Them for Life*** contains more detailed information on this subject. You can obtain a copy from the Société de l'assurance automobile du Québec (SAAQ), your local CLSC or from CAA-Québec.

? What should teenagers and adults do to be safer on the passenger side?

All passengers must wear their seat belts. The seat belt reduces the distance that the passenger can move forward during a crash. Move the seat back. The distance between the passenger's chest and the dashboard where the air bag is stored is usually more than 25 cm, even if the passenger seat has been moved all the way forward. An even greater distance is that much safer.

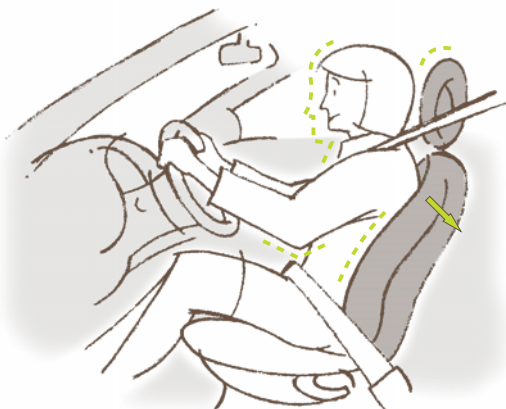
? How can I stay safe when I am driving?

Since the risk zone for the air bag is the first 8 cm of its deployment, placing yourself 25 cm from the air bag gives you a sufficient safety margin. If your current driving position leaves you with less than 25 cm, you can change it in a number of ways:

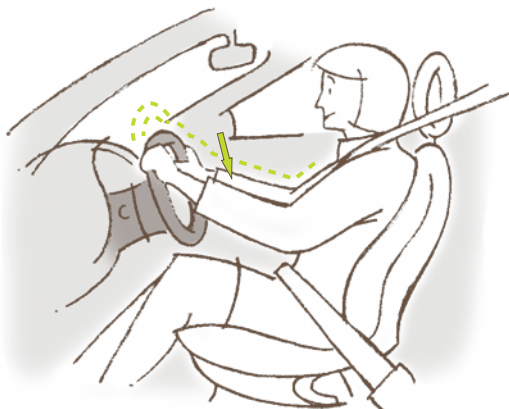
- 1 Move your seat as far back as possible while still being able to easily reach the pedals.
- 2 Slightly recline the back of your seat. Though vehicle designs vary, a number of drivers can achieve the 25-cm distance by slightly reclining the back of the seat, even with the driver seat all the way forward. If you have trouble seeing the road after reclining the back of your seat, raise your driving position by using a firm, non-slip cushion or raise the seat, if possible.
- 3 If your steering wheel is adjustable, tilt it downward. This directs the air bag toward your chest instead of your head or neck.



Move the vehicle seat back.



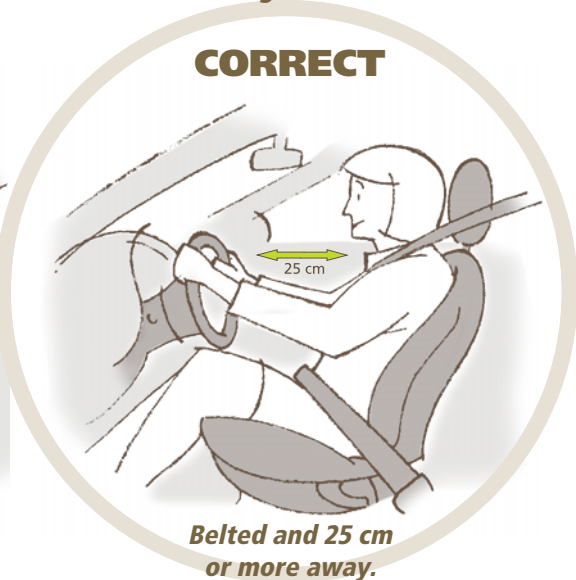
Recline the back of the seat.



Tilt the steering wheel downward.



Buckle up.



***Belted and 25 cm
or more away.***

? Will these tips guarantee that I will be safe in a crash?

There is no guarantee of safety in a crash, with or without an air bag. However, most of the people killed by air bags would still be alive had they followed the above tips.

? Are air bags the reason why the rear seat of a vehicle is the safest place for children?

No. The rear seat has always been the safest, even before the introduction of air bags. In a study of children who were killed in crashes and who were seated in the front and rear seats of vehicles, very few of which had side air bags, it was concluded that placing a child in the rear seat reduces by 27% the risk of death in a crash. By riding in the rear seat, they are farthest away from the point of impact in the event of a front-end collision.

AIR BAG DEACTIVATION: MAKING THE RIGHT DECISION



Vehicle owners and lessees can have one or both of their air bags deactivated. However, they must be aware of the consequences of this decision if neither they nor any of their passengers are in one of the four risk groups listed below.

Air bag deactivation is **definitely justified** for:

- **Infants in rear-facing infant seats.** Such a seat must never be placed in the front passenger seat if the air bag is not turned off.
- **Drivers with a specific medical condition.** Some people have been advised by a physician that an air bag poses a special risk for them because of their condition. However, they should not turn off their air bag unless their physician has also advised them that the risk would be greater if they do not have the air bag turned off. In a crash, even people who are wearing their seat belts could hit their head, neck or chest if they are not protected by an air bag.

In the United States, during a national conference, physicians examined all medical conditions commonly cited to justify turning off air bags. Generally, the physicians **recommended that air bags not be turned off** in the following cases:

- use of a pacemaker, supplemental oxygen, eyeglasses
- median sternotomy
- angina
- chronic obstructive pulmonary disease (COPD)
- emphysema
- asthma
- breast reconstruction
- scoliosis (if the person can be properly positioned)
- previous back or neck surgery
- previous facial reconstructive surgery or facial injury
- hyperacousis, tinnitus
- advanced age
- osteogenesis imperfecta, osteoporosis and arthritis (if the person can sit a safe distance from the air bag)
- previous ophthalmologic surgery
- Down syndrome and atlantoaxial instability (if the person can remain in the proper position in the seat)
- pregnancy

The physicians **recommended turning off an air bag if a safe sitting distance or position cannot be maintained** by a **driver** suffering from:

- scoliosis or
- achondroplasia

or by a **passenger** suffering from:

- scoliosis or
- Down syndrome and atlantoaxial instability

The physicians also noted that a passenger-side air bag might have to be turned off if an infant or a child with a medical condition must ride in front to be monitored by the driver.

The Canadian Medical Association received the report from the U.S. National Conference on Medical Indications for Air Bag Disconnection.

Deactivation **may** also be recommended for two other groups:

- **Children age 12 and under.** Children in this age group should always be secured with a safety device appropriate for their weight and height, installed in compliance with the manufacturer's instructions. They should never ride in the front seat of a vehicle, particularly if it is equipped with a passenger-side air bag. The reason is very simple: children in this age group are likely to put themselves in danger. Children sometimes sit or lean far forward and may slip out of their shoulder belts, putting themselves at risk. The simple act of leaning far forward to change the radio station can momentarily place the child at risk, even if the child is belted or secured in a booster seat. When the owner or lessee of a vehicle has no choice but to carry a child age 12 or under in the front seat, the vehicle owner or lessee may consider having the passenger-side air bag turned off. Since air bag features differ among vehicle models, the vehicle owner or lessee should consult the vehicle manufacturer for further information.

CAUTION: If you allow children to ride in the front seat without being properly restrained, particularly if you sit with a child on your lap, you are putting them at serious risk, with or without an air bag. Turning off the air bag is not the appropriate solution. It will eliminate the risks associated with an air bag but will not prevent an unrestrained child from striking the dashboard or windshield, or from being crushed by your body.

- **Drivers who cannot position their seat so as to be at least 25 cm from the air bag.** Very few drivers are unable to keep a distance of 25 cm between their breastbone and the air bag. If, despite everything, you cannot maintain a distance of 25 cm, **consult the manufacturer of your vehicle for information on what can be done to help you move back from the air bag.**

You can use this brochure to measure the distance between you and the air bag, since it is 25 cm long. It is important to not count the thickness of a heavy coat or any other thick garment when measuring this distance.

Since the risk zone is the first 8 cm from the air bag cover, sitting back 25 cm ensures an adequate margin of safety. Though the ideal distance is at least 25 cm, if it is not quite, the air bag is unlikely to seriously injure you in a crash and you probably do not need to turn off the air bag. Since air bag features differ among vehicle models, consult the manufacturer of your vehicle for any further information.

? What if I am not in any of the risk groups?

Since the risk of serious injury is very low, you do not need an on-off switch. This applies to short people, tall people, older people, pregnant women, in fact, all people, male or female age 13 and older, who buckle their seat belts and who can keep a distance of 25 cm from the middle of their breastbone to the centre of the air bag cover. You will benefit from the protection offered by your air bag and will reduce the risk of violently striking the steering wheel and dashboard in a crash, whether it is moderate or severe.

? *What is the situation for pregnant women?*

Unless they are a member of a risk group, pregnant women should follow the same recommendations as for other adults: buckle up and stay back from the air bag. The lap belt should be positioned low on the abdomen across the pelvis, with the shoulder belt worn normally. Make sure that there is no slack in the belt. Just as for everyone else, the greatest danger for a pregnant woman is to have her head, neck or chest slammed against the steering wheel in a crash. The fetus can be injured in a crash if it strikes the lower rim of the steering wheel or the dashboard, or if the crash forces are concentrated in the area where the seat belt crosses the mother's abdomen. By limiting upper body movements, the seat belt will keep a pregnant woman as far as possible from the steering wheel and will spread out the crash forces over the more solid parts of her body, specifically, the bony structures of her thorax and pelvis. Since in the large majority of accidents involving a pregnant woman, the death of the mother leads to the death of the fetus, the air bag will protect them both by preventing the mother from sustaining severe injuries.

? *How do I obtain an on-off switch?*

If you or another driver of your vehicle or passenger are at serious risk, you can complete the form entitled **Declaration of Requirement for Air Bag Deactivation**. On the form, you must indicate the air bag for which you want to have an on-off switch installed. If the switch is not installed for you, indicate for whom it is being installed. You must also certify that you have read this brochure and that you or another user of your vehicle belong to one of the previously defined risk groups, indicating which one. Send the completed form to the

SAAQ where it will be checked to ensure that it has been duly completed. The SAAQ will keep the original and send you a stamped copy (incomplete forms will be returned to you without being processed). You can then present the stamped copy to a motor vehicle dealership or service technician in order to have an on-off switch installed.

On-off switches may not be available for all makes or models of vehicles. If this is the case, the manufacturer of your vehicle or other service technicians may be able to provide you with other means of deactivation. Should the deactivation be done by a means other than the installation of an on-off switch, you must make sure the air bag is reactivated before selling the vehicle, or inform the person who takes possession of the vehicle that the air bag or bags have been deactivated.

Once the work is completed on your vehicle, your motor vehicle dealership or other service technician will send the declaration form to the SAAQ.

It should be noted that motor vehicle dealerships or other service technicians are not obligated to install an on-off switch or to turn off any air bag by means other than an on-off switch. **Any work done on the vehicle will be done at the expense of the owner or lessee.** You may also be required to sign a waiver of liability.

CAUTION: If you are the lessee of the vehicle or if there is a property reservation for it, you must obtain the owner's permission before going ahead with the installation of an on-off switch or the deactivation of an air bag.

ON-OFF SWITCH PRECAUTIONS



? *If I turn off an air bag for someone at risk, what precautions should I take for the other passengers?*

It is important to understand that the deactivation of an air bag is a **temporary measure** taken for **a person** who belongs to one of the risk groups described above. When someone else is sitting in that seat, you must remember to turn the air bag back on. For example:

- An air bag should be turned off when a child age 12 or under must ride in the front seat. When the child is older, there is no longer any need to keep the air bag turned off.
- In the case of someone with a medical condition, an on-off switch for the passenger-side air bag should be installed only when the person with the condition rides in the front passenger seat.

Since the air bag will not automatically turn itself back on after you turn it off, you must remember to turn it on when someone who is not at risk is sitting in that seat. The on-off switch has a light to remind you that the air bag is turned off.

? *If I turn off an air bag, will the seat belt provide enough protection?*

Air bags increase the protection you can get from seat belts. If the air bag is turned off, you lose that additional protection.

In some newer vehicles, turning off an air bag may have other consequences. These vehicles have seat belts that are specially designed to work with the air bag. If the crash forces become too great, these new seat belts yield to avoid concentrating too much force on your chest. The air bag prevents you from moving too far forward. Without the air bags, the chance of the occupants hitting the vehicle interior is increased.

Ask your vehicle manufacturer whether your seat belts were specially designed to be used with air bags.

HOW AIR BAGS WORK



Air bags are designed to prevent the occupants of a vehicle from hitting their head, neck or chest violently against the dashboard, steering wheel or windshield in a front-end collision. They are not designed to deploy in rear-end or rollover crashes or in most side collisions. Generally, air bags are designed to deploy in crashes that are equivalent to a vehicle hitting a wall at a speed of 13 to 23 km/h, depending on the vehicle. They most often deploy when a vehicle hits another vehicle or a solid object like a tree.



THE AIR BAGS OF TOMORROW

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Air bags inflate when a sensor detects a front-end collision that is severe enough to activate them. The sensor sends an electrical signal to set off a chemical reaction that gives off harmless nitrogen gas and inflates the bag. This process happens faster than the blink of an eye. Air bags have vents so that they deflate as soon as they have absorbed the energy of the occupant. They cannot suffocate you and do not restrict your movements. The "smoke" that you may have noticed in a vehicle during an air bag demonstration is starch or talc used to prevent the folds of the bag from sticking together and is not toxic.

? Are all air bags the same?

No. Their design and performance vary, notably with respect to the crash speed required to trigger their deployment, their size and shape and how they are deployed. For these reasons, you should contact your vehicle's manufacturer if you would like additional information on the air bags in your car or truck.

? Will on-off switches one day be obsolete?

Vehicle manufacturers are actively working on perfecting "smart" or "advanced" air bags, with self-adjusting deployment based on criteria such as crash force, occupant size and position or seat belt use. These air bags should eliminate the risks associated with current air bags. Some vehicles are already equipped with these air bags. However, you should consult your vehicle manufacturer for information about any specific points related to the air bags and other safety systems, about how they work and the pertinence of deactivating them at some point.

WHICH RESTRAINT IS BEST FOR YOUR CHILD?



ALWAYS PUT YOUR CHILD IN THE REAR SEAT

Weight and height of your child

Proper type of restraint

Children under 9 kg and under 66 cm *

Rear-facing infant seat **



Children about 9 to 30 kg and 66 cm to 102 cm *

Rear-facing child seat until the child is one year old (*the child must be able to stand on his or her own*) A forward-facing child seat after the child is one year old.



Children over 18 kg *

Booster seat with lap and shoulder belt (only the lap belt is used with certain booster seats equipped with an abdominal shield)



Children whose sitting height is 63 cm or more, measured from the seat to the top of the head, **if**:

Lap **and** shoulder belt



- 1) they are tall enough to be able to wear the shoulder belt over their shoulder and the lap belt across their pelvis, without the aid of a booster seat, **and**
- 2) their legs are long enough for them to be able to bend their knees at the front edge of the seat, with their backs resting against the back of the seat.

Note: If the child does not meet these requirements, continue using a booster seat

* To determine whether a given restraint is suitable for your child, consult the manufacturer's recommendations concerning the weight and height of children who can safely use the restraint device.

** Late model vehicles are equipped with hooks called a lower universal anchorage system (UAS, or LATCH in the U.S.A.) that makes it possible to solidly secure the seat using a special belt, without using one of the vehicle's seat belts. If your seat does not have an appropriate belt, there may be one (not original part) for your car on the market.

For further information, please contact:

Société de l'assurance automobile du Québec

In Québec (city and vicinity):	418 643-7620
In Montréal:	514 873-7620
From elsewhere, toll free:	1 800 361-7620
	(Québec, Canada, U.S.A.)
Web site:	www.saaq.gouv.qc.ca

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automobile

Québec

