
a d v i s o r y

a d v i s o r y

a d v i s o r y

ADDRESSING THE RISKS FROM AIRBAG INFLATION FOR INFANTS, CHILDREN, AND SHORT DRIVERS

Recent news coverage of deaths, including children and short women, caused by airbags focuses attention on the problem of inflation injuries. This is a serious problem that must be addressed. At the same time, it's important to keep airbag benefits and risks in perspective.

Driver Airbags

Through 1995, airbags had inflated about 780,000 times. More than 1,100 lives had been saved. Driver airbags reduce deaths by about 14 percent in all kinds of crashes — about 20 percent in frontal crashes, the kind in which airbags are designed to work. Deaths are being reduced for both males and females. They're lower among drivers with and without safety belts. But inflating driver airbags also have been implicated in as many as 18 driver deaths, mainly short women.

Why is this happening? What can be done to prevent it? To protect people in serious crashes, the bags have to inflate rapidly to create an energy-absorbing buffer between the upper body and the steering wheel, instrument panel, and windshield. Ideally, an airbag is fully inflated before a motorist moves into it. But if someone does contact an airbag while it's still inflating, injury can result. Forces are so high just after an inflating airbag emerges from its cover that serious injury is possible. Contact nearer the end of inflation usually results in nothing more than abrasions.

People at risk of serious injuries from inflating airbags are mainly drivers who sit with their faces or chests very close to the steering wheel. With or without airbags, this position is risky because hitting the steering wheel can cause serious head and chest injuries in crashes. Now it's particularly risky because of the possibility of airbag inflation injuries. Drivers can do several things to reduce the risk. The first is to use a safety belt because most airbag inflation deaths have involved unbelted people. Also, sit as far away from the steering wheel as possible while still reaching the pedals. Some cars have steering wheels with telescoping adjusters that allow drivers to move the wheel away. People who sit close to the wheel just to see over it may be able to raise their seats or tilt the wheel down instead of sitting so close.

Number 20
November 1996

INSURANCE
INSTITUTE
FOR
HIGHWAY
SAFETY

HIGHWAY
LOSS
DATA
INSTITUTE

1005 N. Glebe Rd.
Arlington, VA 22201
703/247-1500
www.hwysafety.org

The Insurance Institute for Highway Safety and the Highway Loss Data Institute are independent, non-profit scientific and educational organizations dedicated to reducing the losses — deaths, injuries, and property damage — from crashes on the nation's highways. This work is wholly supported by automobile insurers. Editor: Kim Stewart

Another option is pedal extenders available from the National Mobility Equipment Dealers Association (800/833-0427). These allow drivers to sit farther away from the steering wheel. And, because seating positions vary from vehicle to vehicle, shorter motorists might factor this in when shopping for a new model.

What about pregnant women? Are they or their unborn babies at risk? Studies haven't been conducted on airbag effectiveness for pregnant women in crashes, but tests using a dummy designed to represent a shorter female in the third trimester of pregnancy indicate that airbags may provide additional protection to both belted and unbelted drivers. However, late in pregnancy some women may find it impossible to get their abdomens away from the steering wheel. In these cases, airbags do increase the risk of fetal problems, but there's risk even without the airbag because of close proximity to the wheel.

It's important to recognize that as many as 3,400 fetal deaths may occur in motor vehicle crashes each year, and only 1 has been documented to involve an airbag. Pregnant women who wish to drive should move the seat back, making sure there's as much room as possible between their abdomens and the steering wheel (pedal extenders might help). Women who cannot do this should have someone else do the driving.

Passenger Airbags

Until recently, effectiveness has been estimated for driver airbags only. Now there are enough passenger bags to reliably assess their effectiveness, too, and Institute analyses indicate they reduce deaths among right front passengers by 11 percent in all kinds of crashes — 18 percent in frontal crashes. But the same study also found that fatality risk among children riding in the front seat is higher in vehicles with airbags than without them.

As of last month, 9 infants in rear-facing restraints and 22 children are reported to have died from airbag inflation injuries in low-severity crashes. Many of the children are believed to have been unbelted and to have moved forward during braking just before impact so that they were very close to the airbags at the beginning of inflation. Improperly belted children and even some using belts correctly may also be at risk if they don't remain well back in their seats — away from the airbag — or if their seats are too far forward when the airbag deploys.

Whenever possible, children should ride in the back seat, properly restrained. Even children who use belts should avoid riding up front because youngsters don't always sit quietly, and they don't always stay back in their seats. Some vehicles without rear seats or with no room in the rear for rear-facing restraints are equipped with airbag cutoff switches. In these vehicles, infants and children may ride up front if the airbag is deactivated. In other rare instances in which parents have no choice but to allow children to ride in the front seats, the adults must make sure the seat is all the way back and the child stays belted and sitting back in the seat. Never put a rear-facing infant restraint in front of a passenger airbag that hasn't been deactivated.

By following these guidelines, motorists can eliminate the risk of life-threatening inflation injuries. Only when it's impossible to move away from the airbag should people even consider having their airbags disconnected (federal approval is needed before repair shops can do this). In the longer term, technology will step in. Smart airbags will detect occupant characteristics and crash severity, tailoring deployment for optimal protection. But it will be some years before these are in new cars.

Institute analyses indicate that passenger airbags reduce deaths among right front passengers by 11 percent in all kinds of crashes — 18 percent in frontal crashes.