

Car Safety Seats 2011

McKenzie Pediatrics

Motor vehicle collisions are the leading cause of death and disability in children in America. On average, across the country 5 children are killed and 568 injured every day in motor vehicle accidents.

The use of a car safety seat reduces the risk of fatal injury by three-fourths in infants, and by half in young children ages one to four years. Use of a booster seat reduces injury risk by more than half in children ages four to seven years.

Yet nonuse and misuse of car safety seats are very common. In 2006, nearly HALF of all children killed in motor vehicle collisions were unrestrained. Clearly far too many parents are still not getting the message about the importance of car safety seats for young children.

Car seat misuse rates are as high as 80%. Classic misuse errors include:

- the safety belt not holding the seat tightly
- the harness straps not being snug
- the harness straps not routed correctly
- the harness clip not at the level of the axilla (underarms)
- the car safety belt not in lock mode
- the car seat having been recalled, and
- graduating children prematurely to a lap-shoulder belt when they are too small, putting them at risk for blunt abdominal, vertebral, neck, or facial injuries in collisions due to poor positioning of the belt.

Infant-only car safety seats are used for infants weighing from 4-5 pounds to 22-30 pounds, whose maximum height is 27-30 inches. The variability in weight and height is related to differences between individual products. After purchasing a car safety seat, parents should become quickly familiar with the product's weight and height limits.

Infant safety seats should be placed rear-facing only. Shoulder harnesses should be placed in the slots at, or just below, the infant's shoulders. The retainer clip should be placed at the level of the axilla (underarms), and NOT at the level of the neck or abdomen.

Children 0 to 3 years should be seated in the rear-center position in order to have the lowest risk of injury, lower by 40% compared to either the right or left outboard positions.

Convertible car seats are built to accommodate the infant or toddler who weighs up to 40-65 pounds, depending on the product. Convertible car seats are so-called because they can be situated in either a forward- or rear-facing direction.

Infants who've graduated out of an infant-only car safety seat and into a convertible car seat MUST remain REAR-FACING until at least their FIRST BIRTHDAY. According to Oregon law, children must also reach the benchmark of 20 pounds before they can ride forward facing.

Also according to Oregon law, children over one year and between 20 and 40 pounds must be properly secured in a forward-facing child safety seat up to a minimum of 40 pounds. Once the child has reached 40 pounds, they must be properly secured in a booster seat until they are EIGHT YEARS OLD or taller than four feet nine inches.

Convertible car seats should be used as long as the child fits well:

- the top of the infant's head more than 1 inch below the top of the car seat
- the top of the car seat above the child's ears if more than 1 year of age, and
- until the child reaches the upper weight limit of the device.

While not current law, parents should be aware that recent data have demonstrated that children from 12 to 23 months of age are FIVE TIMES SAFER in a collision when sitting rear-facing compared with forward-facing.

Combination car seats are only used forward-facing, and generally can hold children weighing between 20 and 100 pounds. These seats have the capability of changing from a five-point harness arrangement to a belt-positioning booster seat.

Three primary designs of harness restraints are used to secure children into a car safety seat:

- Most common is the five-point harness, which buckles between the legs, with two straps across the infant or child at the shoulders, and two straps across the hips.
- Overhead shield harnesses use a padded bar that swings over the head and buckles between the child's legs.
- The T-shield harness is the least common variety of harness, and involves a "T" or triangular plastic piece permanently attached to the shoulder straps that latches in between the child's legs.

Belt-positioning booster seats are recommended for children from the time they have outgrown their convertible seat and until they are (according to Oregon law) either EIGHT YEARS OLD or four feet nine inches in height.

The purpose of a booster seat is to raise the child up in the seat to provide appropriate positioning of the vehicles' seat belt across the shoulder and lap. The shoulder belt should rest ACROSS THE CHEST without touching the neck or face, and the lap belt should lie OVER THE UPPER THIGHS and not over the abdomen.

The high-back booster seat is preferred, as these have been proven to reduce the risk of injury from lateral collision by 70 percent when compared to a no-back booster.

Before installing a car safety seat, parents should read the instructions that accompany the device, as well as the section on child safety restraints in their vehicle's manual.

The car safety seat and base must be positioned on a flat surface to be secured safely. Once in place, the vehicle's seat belt should be threaded through the appropriate slots on the safety seat, and fastened. When

safely secured, the safety seat should not be able to move 1 inch to either side or forward from its secured position.

The LATCH system (Lower Anchors and Tethers For Children) has been developed to ease installation of the car safety seat without using the vehicle's seat belt. In most vehicles, the LATCH system can only be used up to a child weight of 48 pounds.

Hooks on the car safety seat base attach to anchors located in the crease of the rear seats of the vehicle. Forward-facing safety seats have an additional top-tether point that attaches to a higher car anchor or onto the cargo floor in station wagons and vans. All new car safety seats and vehicles made after September 2002 are equipped for the LATCH system.

Sitting in the rear seat results in a 40 percent reduction in serious injury for children younger than age 16 years, when compared to sitting in the front seat. The minimum recommended age for children to sit in the front seat is 12 years.

However, if the child weighs less than 100 pounds AND the passenger-side airbag cannot be manually or automatically disengaged, it is still best that the child older than age 12 years ride in the back seat. Rapid expansion of air bags can cause severe head and cervical spine trauma to a child whose height and weight is less than that of an adult.

Too often, parents relax back seat rules because of social pressures, perceptions of the trip as being short, and the practice of allowing the child to sit in the front seat as a treat. Parents who relax their usual car safety rules on seemingly short, local trips experience a false sense of comfort. Most collisions occur during "usual" driving circumstances (close to home, on local roads familiar to the driver, and in areas of low speed limits).

A final note: an estimated 44,000 car seat-related injuries NOT involving a vehicle were treated in the U.S. emergency departments from 2003 to 2007. The average age of these children was 4 to 6 months. Half of these injuries occurred at home, 8 in 10 were head injuries, and 1 in 12 required hospitalization.

The usual cause of car seat-related injury away from a vehicle involves car seats falling from elevated surfaces, such as:

- Countertops
- Tables
- Shopping carts
- Car roof or trunk, or an
- Engaged washing machine

Bottom line, NEVER place an infant in his or her car safety seat (no matter if the infant is restrained) anywhere except inside the vehicle or on a floor. If there is a risk to placing the infant and his car seat on the floor (such a rambunctious pet or older child), take the infant out before whatever you do next.

Thanks for reading!