

## Which safety seat is "the best" for my child?

The short answer: The "best" seat is the one that fits your child, fits your car, and fits your family's needs in terms of comfort and convenience, so that you'll use it on every single ride. Try before you buy! For the long answer — read on.

Consider both the age and the size of your child. Follow these general rules:

- Keep babies rear facing as long as possible.
- Keep small children in a seat with a harness as long as possible.
- Keep older children in a belt-positioning booster as long as possible.
- All children ride in the back seat.

**Newborns** may ride in an infant-only seat (certified for rear-facing use only from birth or 3-5 lbs. up to 22-35 lbs., depending on the model) or in a rear-facing convertible seat. Convertibles are certified for rear-facing use up to 30-45 pounds and forward-facing use up to 40-80 pounds. It may be more economical to use a convertible seat from birth, but not all models fit tiny babies. Look for a model that has at least four shoulder strap slots and a choice of two or three crotch strap positions. Whether an infant-only seat or convertible is used, the seat is tilted about halfway back (check angle indicator on the side of the seat) and the straps are in slots at or slightly below shoulder level.

**Babies** should ride rear facing as long as possible to protect the spine and prevent possible death or lifelong disability. Babies have heavy heads and weak necks with soft bones and stretchy ligaments. In a frontal collision, which is the type most likely to cause death or severe injury, a forward-facing baby's neck may stretch up to two inches, but the spinal cord ruptures if it stretches more than one-fourth of an inch. At about one year, the bones start to harden, and the baby gradually becomes less vulnerable. SafetyBeltSafe U.S.A. recommends rear facing until at least age two, since a recent study shows that children between age one and two are five times safer in a crash when they ride facing the back of the car.

As the baby grows, check the maximum rear-facing weight shown in the instructions. Make sure there is at least one inch of space between the top of her head and the top of the safety seat (the hard plastic, not the puffy fabric). Otherwise, the baby's head may not be fully contained within the seat for best protection in a crash.

Most convertible seats have a 5-point harness, which has several advantages for a child of any age or size. The straps are placed on the child's shoulders and low on the hips, so that crash forces are absorbed by the strongest parts of the child's body instead of the soft abdomen. A harness system with a shield is not appropriate for a baby, since the shield lies in front of the face or neck and holds the harness straps away from the baby's body. If the child is husky, a tray-shield may squeeze the tummy. T-shield seats are no longer made; if you have one, it is probably too old to be used safely. In smaller cars, it may be hard to remove the child if the tray-shield cannot be raised completely.

Safety experts have concerns about safety seats with shields. Tray-shields usually are not covered with energy-absorbing padding to protect the head if it hits the shield. This contact is more likely with a shorter child and a loose harness. In a test series with a 12-month-sized

dummy<sup>1</sup>, peak head acceleration was 35% higher for tray-shield restraints than for 5-point harnesses. At least one child (19 pounds) is known to have received a fatal head injury from contact with a tray shield. Today, there are very few models of safety seats with shields.

### **Children over age two**

For best protection, children should ride rear facing as long as possible, based on the weight limit shown in the instructions. Current convertible seats may be used rear facing up to 30-45 pounds. Most children are comfortable sitting with their legs bent outward until at least age two. The head must be at least one inch from the top edge of the plastic shell.

When it is time to turn a convertible safety seat to face forward, based on the child's age and size, it is important to re-read the manufacturer's instruction booklet. In general, the safety seat should be adjusted to the upright position, the shoulder straps moved to slots at or slightly above shoulder level (check instructions), and the vehicle belt or LATCH attachments moved to a different part of the safety seat. It is essential that these adjustments be made according to the manufacturer's instructions to prevent possible serious injuries to the child.

Another type of seat for a child who is at least two years old and weighs about 30 pounds, depending on the model, is a forward-facing-only seat with a harness. This type of seat fits up to 40-80 lbs. Most of these seats come with a removable harness and are called combination seats or child seat/boosters. (Some manufacturers call these seats highback boosters, which is confusing, because the term “booster” generally is used to describe a seat for older children that has no harness.) A tall, thin, child may fit in a seat with a harness longer by using a combination seat, which may be taller than a convertible seat and may have higher strap slots. For best protection, use the built-in harness until the child outgrows it. A few child seats cannot be used without the harness.

Some vehicles can be ordered with built-in child safety seats. Many of them may be used with a harness up to 60 pounds. Built-in seats must meet the same standards as comparable products that are not integrated into the vehicles. Others can be modified for use with the vehicle lap and shoulder belt when the child reaches “booster” age and size.

### **Older children**

If a child is ready to stay properly seated without being held in place by a 5-point harness, a belt-positioning booster seat is the next step.<sup>2</sup> The most flexible choice is a booster with a removable, adjustable back that positions the shoulder belt properly. The belt hooks or “arms” keep the lap belt from sliding up on the abdomen. If the child rides in a vehicle with a low seatback and no head restraint, a backrest is needed to prevent possible whiplash in a rear-end collision. A few highback boosters also require vehicle seat support for the child's head and are unsuitable for use with low back seats. Current boosters are certified for use up 80-120 pounds, but many children are too tall or too wide in the hips to use a booster after 65-70 pounds. Look for a wide or adjustable base if the child is short and chunky.

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<sup>1</sup> Conducted by Kathleen Weber, University of Michigan, Child Passenger Protection Program

<sup>2</sup> Refer to #627 for a list of booster seats and how to choose them

If the child has a combination seat (a safety seat with a removable harness), it may be used as a booster with the vehicle lap and shoulder belt when he or she outgrows the harness (see instructions for maximum weight). However, many combination seats and highback boosters hold the lap belt up too high and/or push the shoulder belt out of the proper position. The shoulder belt should cross the center of the shoulder and lie on the child's chest; the lap belt should touch the thighs.

The belt-positioning clip on the side of a highback booster should only be used if necessary to prevent the shoulder belt from rubbing against the child's neck. Caution: do not use the clip if it grips the shoulder belt so it will not retract if there is slack in the belt caused by the child leaning forward. In most cars, the safety belt can be locked by "switching" the retractor at the top of the shoulder section of the belt. This adjustment helps children to sit up straight and helps keep the shoulder belt tight.

Most children need to use a belt-positioning booster until they are 10 to 12 years old, depending on the child's seated height, the depth of the vehicle seat, and where the safety belt is attached to the car. The child should continue using a booster until he or she can sit all the way back against the vehicle seat with the knees bending comfortably at the edge of the seat cushion. Otherwise, the child may slouch or slide forward to the edge of the seat, which is very dangerous. The lap belt should touch the top of the thighs, and the shoulder belt should touch the center of the shoulder and chest. Finally, the child must be able to sit like this for the whole trip.<sup>3</sup>

There are now many safety seats with an internal harness and travel vests that provide upper body restraint for children up to 50-80 pounds. Children who are not at least three or four years old or who are very active may not stay put without a 5-point harness system to hold them in place. Booster seats do not work well for these children, because the vehicle shoulder belt does not prevent them from leaning forward or placing the shoulder belt behind the back or under the arm. Older children who ride in cars without shoulder belts in the back seat (pre-1990) also need to use a safety seat with a harness, since booster seats cannot be used with just a lap belt.

Booster seats with a plastic shield in front of the child are not recommended and no longer made.

<p><b>SafetyBeltSafe U.S.A.</b> P.O. Box 553, Altadena, CA 91003      <a href="http://www.carseat.org">www.carseat.org</a> 310/222-6860, 800/745-SAFE (English)      310/222-6862, 800/747-SANO (Spanish)</p>
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<sup>3</sup> Refer to #630 for the 5-Step Test