

# WHAT IT MEANS



Five-point harnessed car seats offer a much snugger harness than a shielded seat. In all five-point harness seats, the straps come down over the

shoulders and across the hips to fasten to the buckle that comes up between the legs.

The harness sits snugly against the bony parts of the pelvis (the crotch and hip straps) and across the shoulders and rib cage (the shoulder straps). When a child moves forward in the seat, as they would in a crash, the tightened harness "catches" them almost immediately and restrains them. There is no "impact".

In a shield seat, the straps that go over the child's shoulder and between their legs are either attached to the shield or attached to webbing that attaches to the shield. The shield does not "hug" the child's body, but sits away from it several inches. Those straps are also pulled away from the child's body. When the child moves forward in this seat, there may be several inches of space between the body and the shield - those inches allow the child to gain a great deal of momentum before the "restraint" stops them. Unfortunately, that restraint is not merely composed of soft harness webbing, but of a HARD plastic bar or hard molded rubber. The thin amount of padding material on that bar is not going to make any difference or provide any "cushion" in a 35 mph collision. When you stop suddenly (or run into another car), your child's body will naturally move forward. You can only guess what part of your child will impact the

shield. In a shielded car seat, the child is actually SUPPOSED to impact the shield. Maybe they'll be "close enough" to it that they only end up with bruised ribs or a bumped nose. Maybe they won't be so close and they'll break their jaw, break their ribs, or damage their spleen. ER and trauma nurses can account for the numerous head, chest and abdominal injuries they've seen in children who've "impacted" the shield at a high rate of speed.

Shield seats continue to be heavy sellers, partially because consumer perception is that the shield provides a measure of safety. Consumers also see that the majority of seats on the shelves are shield seats, so they assume shield seats must be "the best". Many people believe they're getting the best seat when they buy a shield, since the word **shield** deceptively implies an added barrier of protection between their child and any danger. Since they sell, retailers continue to stock them. It is known that at least one child has died from a fatal head injury caused when the child struck the shield. There have been many other reported injuries and possibly several deaths (matters under investigation or litigation).

Remember, no car seat is safest unless it fits your child, fits your car correctly, and is used **PROPERLY** every time. If you are not willing or able to use a five-point harness correctly, you may be better off putting your child in a properly used shielded car seat.

You can find this information and more child passenger safety information on the web at:

[http://www.thematlocks.com/jennifer/CPSafety/Car\\_seat\\_safety.htm](http://www.thematlocks.com/jennifer/CPSafety/Car_seat_safety.htm)



Figure 1: T-shield Car Seat

## A Parent's Guide to Shield Car Seat Dangers



Figure 2: Overhead (bar) Shield Car Seat

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# WHAT THE EXPERTS SAY

**American Academy of Pediatrics:** If using a convertible seat for a small infant, the best choice for a more secure fit is the 5-point harness. A shield could contact a small baby's face directly in a crash.

<http://www.aap.org/family/famshop.htm>

**National Highway Traffic Safety Administration (NHTSA):** Shields are not recommended for newborns. When selecting a convertible seat for a newborn, choose one without a t-shield or tray shield in front of the baby. The shield comes up too high on the newborn and may make proper adjustment of the harness difficult.

[http://www.nhtsa.dot.gov/people/injury/childps/csr2\\_001/csrhtml/convertibles2\\_Guide.html](http://www.nhtsa.dot.gov/people/injury/childps/csr2_001/csrhtml/convertibles2_Guide.html)

**SafetyBeltSafe USA:** Convertible seats come with three harness styles: five-point, T-shield, or tray-shield. If a convertible seat is used from birth, it is important to choose one with a simple, five-point harness instead of a harness with an attached shield. The five-point harness can be adjusted to fit almost all sizes and shapes of children up to 40 pounds. 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. A 5-point harness has several advantages for 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. If the child is husky, a T-shield may press on chubby thighs, while a tray-shield may squeeze the tummy. In smaller cars, it may be hard to remove the child if the tray-shield cannot be raised completely.

[http://www.carseat.org/Resources/624\\_bestseat.htm](http://www.carseat.org/Resources/624_bestseat.htm)

Safety experts have concerns about CRs 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-size dummy, peak head acceleration was 35% higher for tray shield restraints than for 5-point harnesses. At least one child (19 lb) is known to have received a fatal head injury from contact with a tray shield. For T-shields, there is a concern that the throat of a small child may be injured from contact with the top of the shield during a crash. In the same series of crash tests, neck forces were 40% higher for T-shields than for 5-point harnesses, and the crotch load with T-shields was 2.7 times higher than with 5-points.

[http://www.carseat.org/Technical/tech\\_update.htm](http://www.carseat.org/Technical/tech_update.htm)

**Automotive Coalition for Traffic Safety, INC.:** Some models have 5-point harness systems that secure at both shoulders, across the upper thighs and between the legs. Others use a harness/T-shield combination that attaches two shoulder straps to a "T" shaped padded tray or shield, which attaches between the legs. Still others use a harness/tray shield combination. Because of concerns that the harnesses may not keep the baby's upper body properly positioned and that the baby's head or face may contact the shield in a crash, the American Academy of Pediatrics (AAP) does not recommend child safety seats with tray shields for small children.

<http://www.act�inc.org/childpass-1.html>

**Dr. Michael Sachs and Stephanie Tombrello ("Car Seat Safety: Buckling Up Isn't Always Enough"):** There are four basic designs of internal harness systems that secure children in their safety seats. If the seat meets or exceeds all applicable U.S. Federal Motor Vehicle Safety Standards, then the type of harness chosen becomes a matter of personal preference, although most child passenger safety experts agree that the five-point harness generally provides the best protection for the widest range of children.

[http://www.carseat.org/Resources/Sachs\\_CSS.pdf](http://www.carseat.org/Resources/Sachs_CSS.pdf)