



NEWS RELEASE

October 1, 2008

MANY BOOSTER SEATS AREN'T UP TO THE JOB OF IMPROVING SAFETY BELT FIT FOR CHILDREN

ARLINGTON, VA — Booster seats are meant to do one thing — elevate children so that safety belts designed for adults are in the right position to restrain kids during a crash. Thirteen of the 41 belt-positioning booster seats the Insurance Institute for Highway Safety evaluated with the University of Michigan Transportation Research Institute did such a poor job of improving the fit of lap and shoulder belts for children that the Institute doesn't recommend them at all. Ten models are best bets and 5 are good bets. These evaluations are the first to tell consumers how well boosters sold by US retailers improve belt fit for children in cars, minivans, and SUVs. The Institute plans to continue these assessments.

"We evaluated the safety belt fit boosters provide, not crash protection," says Institute president Adrian Lund. "This is because unlike child restraints, boosters don't restrain children in crashes. They simply position children so lap and shoulder belts are in the right place to restrain them." Good boosters route belts across a child's bony parts, not soft parts like the abdomen, which is more vulnerable to injury.

"We'd expect the 10 best bets to improve belt fit for children in almost any car, minivan, or SUV," Lund says. "Likewise, it's clear that kids in the 13 boosters we don't recommend aren't getting the full benefit of improved lap belt fit. These boosters may increase restraint use by making children more comfortable, but they don't position belts for optimal protection."

Researchers at the University of Michigan Transportation Research Institute assessed 2 types of boosters, backless and highback, under conditions representing a range of 2001-06 model vehicles. Some highbacks convert to backless, and some boosters, called combination seats, can be used as child restraints. Highback and backless

— MORE —

BOOSTER SEAT EVALUATIONS

Not Recommended

Safety Angel Ride Ryte backless
 Cosco/Dorel (Eddie Bauer) Summit
 Graco CarGo Zephyr
 Evenflo Big Kid Confidence
 Cosco/Dorel Traveler
 Compass B505
 Compass B510
 Evenflo Generations
 Dorel/Safety 1st (Eddie Bauer) Prospect
 Cosco Highback Booster
 Cosco/Dorel Alpha Omega
 Evenflo Chase Comfort Touch
 Safety 1st/Dorel Intera

Note: Unless the booster name indicates that it is a backless seat, all boosters are highbacks. Go to iihs.org for the full list of model numbers and manufacture dates.

Best Bets

Graco TurboBooster backless with clip
 Fisher-Price Safe Voyage backless with clip
 Combi Kobuk backless with clip
 Fisher-Price Safe Voyage
 Britax Parkway
 LaRoche Bros. Teddy Bear
 Safeguard Go backless with clip
 Volvo booster cushion
 Recaro Young Style
 Britax Monarch

Good Bets

Graco TurboBooster
 Safety Angel Ride Ryte
 Recaro Young Sport
 Combi Kobuk
 Safety 1st/Dorel Apex 65

modes were evaluated separately because each mode affects how belts fit. More importance was assigned to lap belt fit. All of the best-bet boosters locate this belt on children's upper thighs. The main problem for the boosters that aren't recommended is they leave the lap belt partially or fully on the abdomen. Fit is important because a correctly positioned lap belt loads pelvic bones during a crash, not the abdomen. A good booster also positions the shoulder belt at midshoulder, keeping the webbing away from the neck so it won't chafe and reducing the likelihood that kids will endanger themselves by putting the belt behind their back or under an arm.

"Our data show it's possible to design a booster with good lap and shoulder belt fit," says Matt Reed, the study's lead author and research associate professor at the University of Michigan Transportation Research Institute. "Boosters that can't do that should be redesigned."

Not-recommended boosters: Boosters the Institute doesn't recommend are the highback Compass B505, Compass B510, Cosco/Dorel Traveler, and Evenflo Big Kid Confidence; backless Safety Angel Ride Ryte; combination Cosco/Dorel Alpha Omega, Cosco/Dorel (Eddie Bauer) Summit, Cosco Highback Booster, Dorel/Safety 1st (Eddie Bauer) Prospect, Evenflo Chase Comfort Touch, Evenflo Generations, Graco CarGo Zephyr,

and Safety 1st/Dorel Intera. At least 2 of these models have been discontinued, hopefully replaced by better designs. Booster makers sometimes reuse names and even model numbers for new seats, so manufacture dates and model numbers are important. The full list of boosters evaluated is at iihs.org.

Best bets and good bets: The 10 best-bet boosters are the most likely to position not only lap belts but also shoulder portions correctly on many children in many vehicles. Best bets include 3 backless seats: Combi Kobuk, Fisher-Price Safe Voyage, and Graco TurboBooster. These may require plastic clips to correctly position shoulder belts. Six highbacks are best bets: Britax Monarch, Britax Parkway, Fisher-Price Safe Voyage, LaRoche Bros. Teddy Bear, Recaro Young Style, and Volvo booster cushion. Another best bet is the combination seat Safeguard Go when it's used as a backless booster. Combination seats convert to boosters by removing their built-in harnesses. At least 5 of the best-bet boosters have been discontinued but still are sold.

The 5 good bets provide acceptable belt fit in almost as many vehicle belt configurations. They are highbacks Combi Kobuk, Graco TurboBooster, and Safety Angel Ride Ryte, and combinations Recaro Young Sport and Safety 1st/Dorel Apex 65, when used as highbacks.

"Boosters that provide better belt fit aren't necessarily the priciest," notes Anne McCartt, Institute senior vice president for research. "Parents don't have to spend a lot of money for a best bet or good bet booster." The highback Graco TurboBooster, for example, converts to a backless booster and retails for about \$50. The backless-only version sells for about \$20.

Child safety seat laws in 43 states and the District of Columbia include booster seat provisions, but until now there has been little information on how to pick one that provides proper belt fit. The government's dynamic tests of boosters don't measure belt fit. Congress in 2002 told the National Highway Traffic Safety Administration to evaluate a belt fit test, but the agency decided to forgo testing. Instead, it only rates boosters by how easy they are to use. Manufacturers crash test boosters, but these simulated tests don't tell parents how boosters will fit kids in their vehicles.

How they're evaluated: The comparative ratings of boosters begin with lap belt fit. Researchers positioned a Hybrid III dummy representing a 6 year-old, the average size of a booster-age child, in a booster in a second-row seat taken from a car.

PROPER BELT FIT

Boosters elevate children so that safety belts designed for adults will fit better. The lap belt should fit flat across a child's upper thighs, not across the soft abdomen, which is more likely to be injured in a crash than bony structures like the pelvis.

The shoulder belt should cross snugly over the middle of a child's shoulder. Then it's in position to provide effective protection in a crash. Plus it's comfortable to use, so a child won't be as likely to move it behind the back or under an arm. See [iihs.org/research/topics/child_restraints/default.html](https://www.iihs.org/research/topics/child_restraints/default.html).



They assessed lap/shoulder belt fit under 7 conditions spanning a range of belt positions measured in 31 vehicle rear seats. Backless boosters generally provide better lap belt fit. Only 1 of the 15 backless boosters evaluated, the Graco Turbo-Booster used with a belt-positioning clip, provides optimal fit for both the lap and shoulder belts across all the belt configurations. On other backless boosters, the belt often falls too close to the neck or too far off

the shoulder. McCartt says parents with kids in backless boosters should use the clips if they're needed to correctly position shoulder belts on their children. Because of built-in guides, highbacks generally do a better job of positioning shoulder belts across all vehicle configurations. However, 12 of the 26 evaluated fail to correctly position lap belts. Good boosters have belt-routing features that hold lap belts down and forward.

Combination seats and 3-in-1s: Six of the 12 highbacks in the not-recommended group are combination seats that can be used as forward-facing child restraints with 5-point harnesses, and 2 highbacks, the Cosco/Dorel Alpha Omega and the Safety 1st/Dorel Intera, are 3-in-1 seats that can be used rear-facing for infants. The Intera also converts to a backless booster. The Safeguard Go, which converts to a backless booster but not a highback, is the only combination seat that's a best bet.

"Combination and 3-in-1 seats are marketed as the last child seat parents need to buy," Lund says, "but most of these seats aren't the best choice as boosters. Parents need to be careful. These seats should be fine when their harnesses restrain younger children, but many of these designs compromise the ability to provide children with good belt fit as booster seats."

Child, booster, vehicle affect belt fit: The evaluations reflect the fit of lap/shoulder belts for an average size 6 year-old in many belt configurations. Some boosters might fit bigger or smaller children better in vehicles with other belt setups. Unlike dummies, kids fidget and slouch in their seats, so the real-world fit boosters provide varies.

"No matter how a booster did in our evaluations, parents still need to see how it fits their child in their car," Lund advises. He urges them "not to rush to buy a new booster if theirs isn't among the top seats. Check how it fits and remember, it's better for children to ride restrained in any booster than to let them ride unbuckled."

Boosters are belt positioners, not restraints: When children outgrow child restraints, parents may wonder if boosters are necessary. They are, because safety belts are designed to fit adults and usually don't fit most kids properly until they're 4 feet 9 inches tall.

About 350 children ages 4-7 die in crashes each year in the United States. An additional 50,000 are injured. Because half of the fatally injured children in this age group ride unrestrained, the first step is to get them belted. Boosters help by improving the fit, effectiveness, and comfort of adult belts.

There's convincing evidence that boosters, used with lap/shoulder belts, offer the safest way for kids to ride in cars once they outgrow child restraints, usually at age 4. Using boosters lowers injury risk by 59 percent compared with belts alone, a 2003 study by the Center for Injury Research and Prevention at the Children's Hospital of Philadelphia found. A 2006 study by the same authors found that boosters reduce fatality risk among booster-age children by about 28 percent compared with belts alone.

End of 5-page news release on booster seats and safety belt fit

For more information go to www.iihs.org