

Answering Concerns About Safety Belts

Kyle David Miller--40 pounds, 3 years old, and riding in a booster--was ejected in a rollover crash and died 5/29/05. His almost-5-year-old sister, restrained in the same system, survived all 4 rolls.

Christine Miller memorializes her son on a YouTube video (“Importance of a 5-Point Harness Carseat”), promoting the use of 5-point-harness safety seats with tethers far beyond 40 pounds. Other goals are to raise awareness that safety belts may fail and to encourage testing the use of both LATCH attachments and safety belts to hold safety seats in place. A foundation in Kyle’s name supports access to safety seats for low-income youngsters.

Kyle’s story ignited concern and generated interest in resuming use of 5-point-harness safety seats for older kids. But because of Miller’s contention that the safety belt holding Kyle into his booster failed, the video implies parents should avoid using vehicle belts to protect children, either to attach harness-equipped safety seats or with a booster.

Data do not indicate frequent instances of belt failure/buckle unlatching. Investigations conducted through the Center for Injury Research & Prevention at Children’s Hospital of Philadelphia (CHOP) of 800 crashes in which appropriately restrained children were injured or killed, did not turn up any such cases.

Their 2003 paper examining subsets of children ages 4 to 8 riding unrestrained, belted, or in boosters, shows a 38% reduction of injury for kids in belts compared to those unrestrained. A more recent study showed that using a booster instead of just a belt reduced injuries by 45% for children ages 4 to 8.

Since the 1970s, reported effectiveness of forward-facing safety seats has been based on a comparative study of kids in crashes 1974-84. Much has changed since then, including a drop in unrestrained kids from 54% to 9%! Examining outcomes for children 12-47 months in the back seats of vehicles, excluding pickups, which were towed away post-crash, the CHOP team compared those in safety seats, virtually all restrained by belts, and kids in belts alone. The reduction in injury risk was 71%. The overall risk to the safety-seat kids was less than 1%, despite 80% incorrect use.

SBS USA turned to Chip Chidester, National Center for Statistics & Analysis of National Highway Traffic Safety Administration (NHTSA), to pursue data on belt failure. He reports that data from National Automotive Sampling System-Crashworthiness Data System (CDS) indicate belt failure, of any kind, for children is rare, possibly occurring once or twice annually.

Overall results for a recent 8-year period for kids 14 and under in CDS crashes was about .05%; such failures may result from any aspect of the crash, from massive destruction of the belt in the crash to a buckle release. Using these nationally representative data, NHTSA calculated unrestrained children 0 to 4 years, 5 to 7 years, and 8 to 14 years were 6.6, 14.9, and 10 times more likely respectively to receive serious-to-fatal injury compared to those restrained, a statistically significant finding at $p < .05$ level.

NHTSA investigates reports of failures due to equipment malfunction through the Office of Defects Investigation where all such incidents should be sent.

However, there have been data collected indicating problems of buckle release either due to the mechanism being activated by flailing arms or legs or flying objects, by particular “pulses” from webbing elongation, or by deterioration of internal springs. Certain designs have been recalled over the years, so the issue should not be ignored.

See other side for assistance with making important decisions about your child’s safety.

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Decisions for Parents

What can parents do to increase confidence in their choices for their kids?

- 1) Recognize each stage of restraint as a demotion, not a graduation.
- 2) Examine vehicle features and buckle recalls.
- 3) When purchasing a safety seat, check the maximum rear-facing and forward-facing weights.
- 4) Learn to assess safety seats in relation to one's own kids, cars, and lifestyles.

How parents and professionals can make sure children are as safe as possible:

- 1) Keep children rear facing until at least age two. (Convertible seats fit up to 30-45 lbs. rear facing.)
- 2) Use a seat with an internal harness as long as possible (40-80 lbs). See list below.
- 3) Use a booster until the child can pass the 5-Step Test in the vehicle in which he/she is riding.
- 4) Have children ride in the back until they start learning to drive.

Once parents look at seats accommodating bigger kids, here are practical issues to review:

- 1) Fit the chosen product into the vehicle. Will parents move the product from car to car?
- 2) Use the tether for higher-weight child seats. Get tether anchors retrofitted in older vehicles.
- 3) Install the child seat with a vehicle belt if the child's weight is over the limit for lower LATCH connectors (40-60 pounds, depending on the vehicle).
- 4) Check the instruction booklet. For many seats, the harness is only certified up to 40 pounds.
- 5) Check the top harness slot height to make sure there is plenty of space for your child to grow. The straps must be level with or slightly above the child's shoulders.
- 6) Recognize the importance of keeping kids rear facing up to at least two years. Don't use a seat forward facing before then.
- 7) When using a booster, consider locking the switchable retractor, if present, on the shoulder-lap belt to keep the child from leaning forward and to prevent slack in the shoulder belt. Use the center location if an appropriate belt is available. Also lock the retractor of other belts the child can reach to reduce the risk of entanglement in the belt and possible strangulation.

When shopping for a vehicle, consider those with electronic stability control systems and side curtain air bags, both of which show promise in reducing the number of rollovers and ejections, respectively. Safety belts have been documented as the best tool to reduce vehicle deaths, but several crash avoidance and mitigation features give additional benefit. Also, be sure to check for recall information for all of your vehicles.

Safety Seats and Harnesses with Higher Maximum Weights

- **Britax** Advocate CS, Boulevard CS, Decathlon, or Marathon CS (5-65 lbs.), Roundabout 50 (5-50 lbs.). All convertibles rear facing to 35 lbs. Frontier (25-80 lbs. with harness; 40 lbs. and up as booster). Regent (22-80 lbs.)
- **Dorel** Complete Air (5-50 lbs. rear facing to 40 lbs.). Alpha Omega/AO Elite/Elite/Luxe/All inOne/3-in1/Deluxe (5-50 lbs. with harness; rear facing to 35 lbs.; 40-100 lbs. as booster). Apex 65 (22-65 lbs. with harness; 40-100 lbs. as booster). Go Hybrid (22-65 lbs. with harness, tether required; 40-100 lbs. as backless booster). Apex and Go must be supported by vehicle seatback.
- **Evenflo** Titan Elite or Triumph Advance (5-50 lbs., rear facing to 35 lbs.). Generations 65 (20-65 lbs. with harness; 30-100 lbs. as booster). Maestro (20-50 lbs. with harness; 40-100 lbs. as booster).
- **E-Z-On** vests and harnesses (various sizes available)
- **Graco** My Ride 65 (5-65 lbs, rear facing to 40 lbs.)
- **Learning Curve** True Fit Premiere (5-65 lbs., rear facing to 35 lbs.)
- **Orbit Baby** Toddler (15-50 lbs.; rear facing to 35 lbs.)
- **Recaro** Como or Signo G2 (5-70 lbs., 35 lbs. rear facing)
- **Safety Angel** Ride Ryte Booster (may be used with E-Z-On Kid Y harness)
- **Safe Traffic System** Ride Safer Travel Vests (35-60 lbs., 50-80 lbs.)
- **Sunshine Kids** Radian65SL (5-65 lbs.), Radian80SL (5-80 lbs.), RadianXTSL (5-80 lbs.). All rear facing to 45 lbs.