

Child Restraints for Children with Special Needs

A Healthcare Provider's Guide



Child
Safety
Facts
2009

Provider's Role

Every child deserves the best possible protection from injury while riding in a motor vehicle. Some state car seat laws exempt children with medical conditions, but any child riding without proper protection is at risk of injury even in a minor crash.

Parents look to nurses, physical and occupational therapists, and doctors as authorities in child passenger safety. You can help them by:

Developing a discharge policy

and protocols for education of all children and families.

Developing protocols for identifying children who need specialty child restraints and for assisting parents in obtaining and using specialty restraints.

Offering current materials on child passenger safety (see Resources).

Knowing where to get low-cost car seats and specialty restraints, such as car beds, when needed.

Taking a child passenger safety awareness class or certification course. Several are available, including the National Child Passenger Safety Technician Certification Course and the Special Needs Technician training program (see Resources).

Staying within your level of expertise. Avoid giving hands-on assistance to individual patients with restraint use and installation problems unless you are certified as a Child Passenger Safety Technician. Refer families to technicians in your area or to national resources (see Resources).

Car Safety Basics for Parents

- ✓ **Use a car seat that fits the child's weight, development, and condition.** There are established methods and products developed to handle most conditions.
- ✓ **Avoid modifying any car seat.** If the car seat doesn't fit the child's needs, find another that does.
- ✓ **ALWAYS follow instructions** for the car seat and the vehicle.
- ✓ **Make sure shoulder straps are snug** to keep the child in the seat. You should not be able to pinch slack in the straps between your finger tips.
- ✓ **Install the car seat tightly with the seat belt or LATCH.** Use whichever system gives a tighter fit. ALWAYS use a top tether strap for a forward-facing car seat if one is available.
- ✓ **Lower LATCH anchors** cannot be used for children over 40 to 50 pounds (check car owner's manual and car seat instructions).
- ✓ **Buckle up children in back** whenever possible. The back seat is safer than the front, with or without an air bag.
- ✓ **NEVER transport a child rear facing in the front seat** of a vehicle with a passenger air bag unless the air bag has an on/off switch and has been shut off.
- ✓ **Side-impact air bags** in the back seat help protect children riding buckled up. However, children should not lean against the window or door where side air bags are in place.

Conditions That May Require Special Attention

For resources and consultation, see page 4, especially the National Center for Safe Transportation of Children with Special Healthcare Needs.

Low weight, small stature

Premature and low birth weight infants are too small for many car seats. Some may need a car bed.

Older children who are much smaller than usual should use a car seat or booster as long as possible.

Large or heavy children needing support

Some children outgrow a regular car seat but still need support and containment from a vest or car seat with a harness for children over 40 lbs.

Difficulty sitting upright

Children with neuromuscular conditions may need speciality car seats with adjustable pads to sit up well and be positioned properly.

Medical fragility

A variety of medical problems, such as halos, tracheostomy, or brittle bones, may require using car seats with special features.

Hip and leg casts

Casts may make using most car seats impossible. Car seat fit should be considered before casting. A special seat and harness are available.

Impaired mobility

Heavier children may need to use "transit option" wheelchairs designed for vehicle use and crash safety.

Behavioral challenges

Some children resist being buckled up. Certain products may be more confining than others. An individualized behavior modification plan may help.

Make
Every Ride
A Safe Ride



Four Stages of Child Passenger Protection

There are four stages to follow as a child grows. Some car safety seats (car seats or child restraints) within each stage may have different weight limits.

Stage 1: Rear-facing car seat (or car bed). Use infant-only car seats or convertible car seats (seats that face the rear for infants and forward for toddlers). Rear facing is safest for an infant from birth to at least age 18 to 24 months, within the weight limits of the car seat.

Car beds are for use only by babies who have a medical need to lie flat.

Stage 2: Forward-facing car seat with harness. A child should be at least 1 year of age **AND** at least 20 pounds before riding facing forward. A premature infant should stay rear facing until at least 12 months after his full term due date.

Use a convertible seat or a forward-facing combination car seat (this can be used later as a booster).

A few products with harnesses can hold a child weighing up to 80+ pounds. These are very useful for children needing extra support (see Resources). Children should ride in a car seat with a harness as long as possible.

Stage 3: Booster seat with lap-shoulder belt. Above 35 to 40 pounds, use a belt-positioning booster seat if it provides enough support. It raises the child so the lap-shoulder belt fits well. Use a booster until the child fits the seat belts. Many boosters have high backs with shoulder belt guides and side wings to help support a child's head.

If more support is needed or no shoulder belt is available, use a car seat or vest with a high maximum weight. Children should ride in a booster as long as possible, to at least 8 years old.

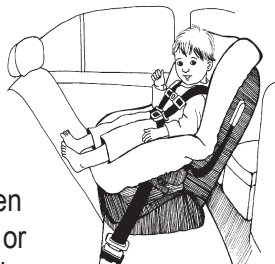
Stage 4: Seat belt. Use the seat belt when the child is big enough for it to fit properly. A lap-shoulder belt is better than a lap belt. Use SBS USA's Five-Step Test or Safe Ride News Fact Sheet B-3 "Boosters are for Big Kids" (see Resources).

Which car seat is right for a particular child?

ONLY car seats meeting government standards or products modified and tested for special needs transport should be used. Assessment should be done by someone trained in special needs and child restraint use.

Benefits of Riding Rear Facing

The rear-facing position is safest! Children should ride rear facing as long as possible, to at least 18 to 24 months. This position also works well for small children who are fragile or have poor head control.



A child is safer riding in a rear-facing convertible seat as long as he fits.

Most convertible seats have a weight limit of 30 to 35 pounds when rear facing. A child can ride rear facing until a) he is at the rear-facing weight limit of the seat, or b) his head is one inch below the top of the child restraint.

At a minimum, a baby should ride rear facing until at least age 1 **AND** 20 pounds. Both criteria must be met.

Preemies and Others Very Small for Their Age

Many premature and low birth weight infants can use some infant seats. Others need car beds. See the SRN Fact Sheet "Child Restraints for Newborn Infants: A Healthcare Provider's Guide" (see Resources).

Some older children are much smaller than others of the same age. It is important to keep them in child restraints or boosters that fit them. Encourage parents to let the child help pick out the seat. Some cover designs look more grown up than others do.

Avoid putting a small-stature child in

a seat belt until the belt fits well. The 5-Step Test for seat belt fit can be used (see SBS USA, in Resources).

Seat belts that do not fit well can cause serious injury in a crash. Proper seat belt fit depends on size, not age. A booster seat used with a lap-shoulder belt will help make seat belts fit better.

Older Children Still Needing Support or Positioning

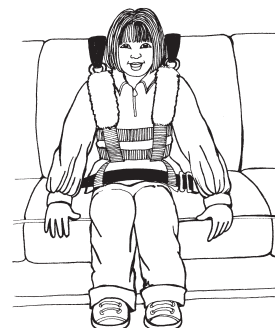
Many children with cerebral palsy or other neuromuscular conditions are not able to sit up well without support. The harness of a child restraint provides enough torso support for some children. Others may need specialty seats with movable pads for positioning.

A reclined child restraint supports the child's head. Many child restraints tilt back enough to give some head support or can be adjusted to a more reclined position while facing forward (check the child restraint instructions).

If the child needs more head support, use a soft neck collar to help keep the head up. Some specialty child restraints come with head support devices. Do not fasten the head to the child restraint with a band during travel. Attaching the head with a band or using a stiff collar could cause serious injury in a crash.

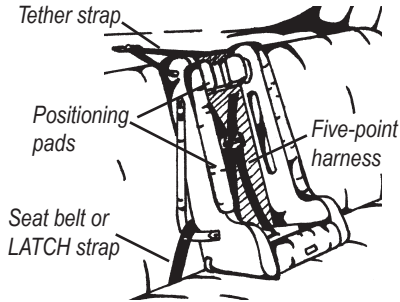
Options for children over 40 lbs:

- E-Z-On Vest (child to adult sizes)
- A car seat with a harness for use above 40 pounds (see Resources).
- Adaptive seats made for vehicle use.



E-Z-ON Vest gives support. It must have a top tether strap installed in a car or be secured with a cam wrap in a school bus.

Adaptive child restraints for children from 20 to 100+ pounds provide positioning pads and head support for child passengers. Most must be installed with a tether strap and seat belt rather than the LATCH system. Some have stroller bases for use outside the car.



An adaptive child restraint with tether strap.

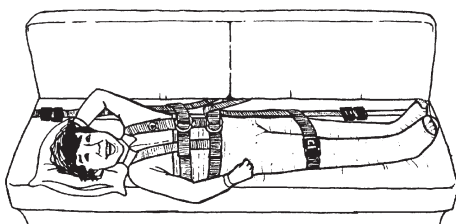
Important: Most vehicles do not have tether anchors strong enough for adaptive restraints for children over 40 to 50 pounds. Some special needs child restraints can be installed with two tether anchors (see instructions). If not, a heavy-duty tether anchor must be installed.

Child With a Tracheostomy

A child with a tracheostomy usually can use a regular car seat or booster. Use a car seat with a five-point harness, not one with a shield. The child's neck could hit the shield in a crash, injuring the child or affecting breathing.

Child Lying Flat

A child in a body cast or other condition requiring him to lie flat can use the Modified E-Z-ON Vest (for children 20 to 100 pounds, 2 to 12 years old). The child lies across the back seat. Two seat belts are needed to secure the vest and leg strap.



Child using the Modified E-Z-ON Vest

Infant or Child in a Spica Cast or Splint

Some types of hip casts make it impossible for an infant or child to fit in most car seats. A child over age 1 may fit into a forward-facing car seat or booster with low sides. This depends on the shape of the cast. Discuss this with the child's doctor before casting to see if it can be done so that the child still fits in a car seat.



Child with spica cast in Spelcast car seat

The Hippo is a special car seat designed for children in a spica cast. An older product, the Spelcast, is another specialty car seat that may be available for loan from some hospitals.

Behavioral Issues

A child who often unbuckles his booster or seat belt may need a harness that he cannot get out of easily. One model of the E-Z-ON Vest opens in the back, out of a child's reach. Secure the vest with a tether strap and the seat belt. Also talk with the family about behavior modification.

Support & Positioning Tips

- A physical or occupational therapist can help parents use rolled towels, blankets, or foam wedges to pad along the child's body and head. Some children need towel rolls behind the neck, in the crotch, or under the knees.
- Do not put extra padding **under** the child or **behind** his back. Thick pads or clothes may prevent the harness from fitting snugly enough to hold him in a crash. Exception: The Spelcast seat may be used with a firm folded sheet placed behind the back (call Snug Seat, 800-336-7684 to confirm).

Key Messages for Parents of Children with Special Needs

- ❑ **The safest way for a child to ride depends on her size and condition.** Limit travel as much as possible to reduce the risk of a crash.
- ❑ **The back seat is safest place for children.** If a child needs to be watched at all times, have an adult ride in the back seat with him.
- ❑ **If a child must be transported in the front seat,** be sure the air bag has an on/off switch or sensor and that the air bag has been turned off. The caregiver may get permission to install an air bag on/off switch from NHTSA.
- ❑ **Do not put extra padding** under the child or behind his back.
- ❑ **If a child is large enough to fit in a seat belt,** do not recline the vehicle seat back. In a crash, a reclining child could slide out legs first under the lap belt. This could cause serious injury.
- ❑ **Be prepared to stop often** on long trips.
- ❑ **Have a medical care plan in the car in case of an emergency.** Take along the names and numbers of healthcare providers and equipment suppliers.
- ❑ **If the child uses battery-powered equipment,** make sure there is enough power for twice the expected travel time.
- ❑ **Secure medical equipment** to limit movement in the vehicle during a crash. Buckle an unused seat belt around it or wedge it with pillows on the floor.
- ❑ **Make sure that all caregivers who transport the child** in their vehicles follow the proper directions for buckling up the child.
- ❑ **If a child rides on a school bus,** take part in planning with the school personnel.

Crashworthy Wheelchairs

Some wheelchairs meet a voluntary standard (WC 19 for transit option chairs) for crash protection in a motor vehicle. Some are made to fit children (see Resources).

If possible, a child in a wheelchair should be moved into a child restraint. A wheelchair used in a vehicle should be anchored facing forward with four tie-down straps. A separate lap-shoulder belt must be used for the child. Remove any hard objects (such as a tray) attached to the chair in front of the child and stow them for travel.

School Bus Transport

Young children with special needs often ride on school buses. Appropriate transport (including car seats or other devices) should be part of the individual education plan (IEP) for each child. Parents should take part in this planning and make sure that they understand and agree with what is recommended.

The school bus must have factory-installed lap belts or lap-shoulder belts for securing car seats. Belts must meet federal safety standards. NHTSA has guidelines for transporting preschoolers and using car seats on school buses (see Resources).

Other Special Conditions

There are any number of less common conditions that complicate child restraint use. Special knowledge of how to choose specific restraints and experience using them is needed.

Healthcare professionals trained in transportation safety issues for children with special needs can help find solutions. The National Center for Safe Transportation of Children with Special Healthcare Needs provides consultation. The center sponsors an active e-mail listserv of people involved in this issue.

National Center for Safe Transportation of Children with Special Healthcare Needs

The center, part of the Auto Safety Program of Riley Hospital for Children in Indianapolis, IN, offers consultation and educational materials. Fact sheets/brochures on the following topics are available:

- Achondroplasia
- Autism
- Cerebral Palsy
- Down Syndrome
- Hip Casts
- Osteogenesis Imperfecta

The center offers a training course on special needs for healthcare professionals, *Safe Travel for All Children*. Requirements to attend this course include certification as a Child Passenger Safety Technician.

For a list of professionals who have completed the course, or to join the e-mail listserv, contact the center (see Resources).

Air Bag On/Off Switches

If a child requires medical monitoring and must ride next to the driver, the air bag must be turned off.

Most small trucks and sports cars have built-in on/off switches. Newer vehicles have air bag sensors that shut off the air bag or reduce its power if a child is riding in the front seat. Users must check the owner's manual and the air bag status light if relying on this system.

If an on/off switch is used, it is important that it be turned off for the child and turned back on for an adult passenger.

If there is no switch, the owner may get approval to install an on/off switch from NHTSA (see Resources).

RESOURCES: 2009

National Center for Safe Transportation of Children with Special Healthcare Needs, Riley Hospital for Children, Indianapolis, IN: consultation, sample protocols, training, fact sheets; 800-755-0912, www.preventinjury.org/specneeds.asp

Special needs car seat technicians: See Nat'l Center list of graduates at www.preventinjury.org/specneeds.asp

ABLEDATA, website for assistive technology: www.abledata.com (go to Products, then Transportation)

American Academy of Pediatrics (AAP) policy statements: *Transporting Children with Special Healthcare Needs* (1999), *Safe Transportation of Premature and Low Birth Weight Infants* (1996), 847-228-5005, aappolicy.aappublications.org

NHTSA (National Highway Traffic Safety Administration): General child restraint information, recalls, air bag switches, school bus safety information; the **Auto Safety Hotline**, 888-327-4236 or 800-424-9153 (tty), www.safercar.gov

SafetyBeltSafe U.S.A. (SBS USA): national advocacy organization for child passenger safety, 5-Step Test flyer; 800-745-7233, 800-747-7266 (Spanish), www.carseat.org

Safe Ride News (SRN): professional subscription publication, fact sheets on child passenger safety; 800-403-1424, www.saferidenews.com

Product lists on SRs Web site: infant restraints with small harness dimensions, seats with harnesses for children over 40 pounds, transit-option wheelchairs; also manufacturers of adaptive child restraints, www.saferidenews.com

Wheelchairs for motor vehicle use: free pamphlet from University of Michigan Transportation Research Institute, 734-764-2171, www.travelsafer.org

Technical training on child occupant protection: National Child Passenger Safety Technician Training, certification in child restraint use, www.cpsboard.org