

# Child Safety Seats for Children with Special Needs

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## Conventional Child Passenger Safety Restraints And Children With Special Health Care Needs

Conventional child passenger safety restraints are appropriate for many children with special health care needs. Conventional restraints are defined as those restraints that meet Federal Motor Vehicle Safety Standard 213. Conventional restraints can be purchased at retail stores and are not specifically designed for children with special health care needs. Examples include rear-facing only, convertible, combination forward-facing/booster seats, and belt-positioning boosters. Seats with harnesses to higher rear and forward facing weight limits have increased the number of conventional restraint options available for children with special health care needs.

### Rear-Facing Only Seats

Rear-facing seats, which include rear-facing only and convertible seats, provide appropriate protection for many children with medical conditions. Weight maximums as high as 30-35 pounds are not uncommon and allow some children with special health care needs to ride rear-facing longer. Many rear-facing seats come with head support systems that provide adequate lateral support for babies. Some support systems are designed specifically for use by premature or smaller babies.

Select seats with smaller internal dimensions for low birth weight and premature infants who **do not** experience cardio-respiratory events. If babies weigh less than five pounds, select a seat with a lower minimum weight limit. Maintain an appropriate semi-reclined angle during tolerance testing and vehicle installation.



According to current safety recommendations, children are best protected in a crash if they are seated facing the rear of the vehicle until they are about two years of age or have outgrown the rear-facing weight or height maximums for the restraint. Many convertible child safety seats can be used rear-facing to weights as high as 30-35-40 pounds. These seats allow larger infants and toddlers with special health care needs to ride rear-facing longer.

### Convertible Seats

In general, convertible seats are designed for rear-facing use for infants and forward facing use for toddlers beyond 40 pounds and 40 inches. They are “converted” from an infant seat to a toddler seat by making specific changes, according to manufacturer’s instructions.

Keep your child rear facing as long as possible. Riding rear facing helps support your child’s entire body and protects her better from an injury, especially to the spine. Most newer convertible seats are approved for



rear-facing up to 35 or 40 pounds and should be considered for infants whose height and weight have exceeded the limits of the rear-facing infant-only seat (Check manufacturer's instructions for weight limits). Move your child into a rear facing convertible seat when she outgrows her infant-only seat. Convertible seats that rear-face to higher weights can also be beneficial to many children with medical conditions. For example, children of smaller stature, developmental delays, brittle bones, down syndrome, hydrocephalus, low tone, and poor upper body control will be better positioned and protected rear-facing in a child restraint.

## Forward-Facing Seats

Forward-facing seats, including convertible seats and 3-in-1 car safety seats, with upper harness limits as high as 65-90 pounds are increasing in availability, which provides some children with special health care needs the opportunity to benefit longer from the protection offered by a five-point harness.



### **Some features that may benefit children with special health care needs are as follows:**

- Harnesses that can be used over 40 pounds provide extra restraint for children with behavioral challenges, positional issues, or obesity.
- Seats with lower or shallow sides may accommodate some children in long-leg broomstick or hip casts.
- Semi-reclined option in a forward-facing position may assist with positioning children with poor head and neck control and who have outgrown the rear-facing limits of their car safety seats.
- Extra padding and positioning inserts. Seats with these features can provide better positioning or comfort for children with neuromuscular or bone dysplasia conditions.

## Belt-Positioning Booster Seats

In order to use a belt-positioning booster seat, a child with special health care needs must have good head, neck, and trunk control. Boosters with higher weight limits may be suitable for children who are overweight or obese. Extended booster use is recommended for children smaller than their typically developing peers, such as children with achondroplasia. High back boosters with sides may provide adequate lateral support for some larger children who experience intermittent fluctuations with head, neck, and trunk control. These seats may also assist with children with behavioral problems by improving their comfort by allowing their knees to bend and their legs to hang down. Compliance may also improve as the child is able to see out the window.

# Specialized Or Adaptive Child Passenger Safety Restraints

In general, specialized or adaptive child passenger safety restraints are designed specifically for children with special health care needs and are not available at retail stores. They are ordered through a local equipment vendor or in some cases directly from the manufacturer. Specialized restraints tend to be more expensive than conventional restraints and securing funding can be challenging. Special needs car seat loan programs are available through some hospitals, local Easter Seal affiliates, health departments, and Safe Kids coalitions. Third-party payers including Medicaid may cover the cost of specialized restraints when sufficient documentation of medical necessity is provided.

*The following section describes general information about categories of specialized restraints. It does not provide information about specific restraints.*

## Car Beds

Car beds are designed for infants who must travel lying down. Car beds may be warranted for babies who have cardio-respiratory conditions, lower extremity casts, omphaloceles and other mid line chest or abdominal defects, or neuromuscular disorders. Use of car beds should be reserved for those babies who demonstrate a medical necessity. Babies discharged in car beds should have a period of observation in the car bed prior to discharge to ensure placement in the car bed will not exacerbate any of the babies' symptoms. Additionally, when the physician determines the baby may be able to ride semi-upright, a follow-up period of observation in a rear-facing child safety seat should be conducted to make sure the baby is ready to transition to a rear-facing position.



## Specialized Rear-Facing Only Seat for Children with Omphaloceles

Consult with the child's healthcare team to determine the best options. There is one seat specifically made for a child with an omphalocele. Contact **Shayne Merritt** at <http://www.eztether.com> for further information.

## Specialized Convertible Seat for Children in Hip Casts

To date, there is only one child safety seat designed specifically for children in hip casts. The Hippo offers a wedge, which can be configured in different ways and used, if necessary, to better position a child. Since the restraint is a convertible child seat, it can be used rear-facing and forward-facing. Not all children in lower extremity casts will fit in the Hippo and alternate solutions such as a car bed, modified vest, or professional transport may need to be considered.



## Large Medical Seats



Large medical seats are designed for occupants who require supplemental positioning support from a car seat beyond that offered by a conventional restraint. Typically, large medical seats will fit occupants weighing up to 102-135 pounds.

It's important for families to work with an occupational therapist (OT) or physical therapist (PT) who has experience working with pediatric patients and is a child passenger safety technician. OT's or PT's will be able to evaluate a child's positioning needs and determine which restraint provides the best positioning options for the child.

## Adaptive Belt-Positioning Boosters



Adaptive boosters must be used with the vehicle's shoulder/lap belt system to provide restraint. The harness is for positioning only to provide supplemental support to a child with special health care needs. Depending on the booster, they may also have accessories that aid with positioning, such as abductor wedges, support pads, lap trays, foot props, and turning bases. Upper weight ranges vary from 80-175 pounds.

The evaluation and ordering process is similar to that for large medical seats.

Since they are not installed like a large medical seat, adaptive boosters may be options for families who have vehicles without top tethers or transfer their child from one vehicle to another frequently.



## Vests



There are a number of vests or harnesses designed for children with special health care needs to use in passenger vehicles. Upright vests usually fit children from 2 years of age and 20 pounds up to 168 pounds. They can be ordered with closure systems in the front or back. Typically, an upright vest will not provide adequate support for a child with poor head, neck and trunk support. One model of vest is for children who need to travel lying down during travel. It is for children ages 1-12 years and 20-100. In order to use this product, the child must be able to fit lengthwise on a vehicle bench seat. This product is an option for older children in hip spica casts or other older children who are unable to sit up.

## Adapted Vehicles

Some families may require use of adapted vehicles in order to meet the transportation needs of their children. The National Highway Traffic Safety Administration (NHTSA) publishes a brochure, "Adapting Motor Vehicles for People with Disabilities," to assist families to navigate the process of securing adapted vehicles. In general, NHTSA recommends that families work with a driver rehabilitation specialist who is qualified to assess the family's specific transportation needs and provide them with a list of appropriate vehicle modifications. Although driver rehabilitation specialists typically work with drivers with disabilities, they can also evaluate the vehicle needs of passengers with disabilities. Names of qualified evaluators can be obtained by contacting a local rehabilitation center or the Association for Driver Rehabilitation Specialists at [www.driver-ed.org](http://www.driver-ed.org).

Once the vehicle modifications have been evaluated and discussed with the family, appropriate vehicle options can be explored. When choosing a vehicle, it is important for families to work with a reputable dealer of adaptive vehicles. The vehicle should be equipped with seat belts, vehicle seats, and tether anchorage locations that meet all applicable federal safety standards. The seat belts should be capable of remaining locked during normal driving

conditions if child safety seats are installed. If the vehicle is adapted to accommodate use of a wheelchair, it should provide adequate space for the wheelchair to face forward, a four-point tie down system, and a separate three-point seat belt for the wheelchair occupant. In addition, the vehicle should be equipped with appropriate restraint systems for all occupants. New adapted vehicles can be expensive, ranging in price from \$20,000-\$80,000. NHTSA suggests that families pursue both public and private avenues for funding the vehicles. For example, insurance companies may cover costs associated with evaluations and vehicle modifications. Adaptive vehicle manufacturers may offer rebates or reimbursement plans. Social service agencies may be able to help families explore applicable grants.

## **Wheelchairs**

If possible your child should ride in a car safety seat in your vehicle instead of the wheelchair. If transferring is not possible, or if the rider requires the support of the wheelchair and seating system, it is very important to secure the wheelchair to the vehicle and restrain the rider in the wheelchair with crash-tested belt restraints. When securing the rider, upper and lower torso (lap) restraints are required. Lap belt angles between 30-75 degrees to vertical are recommended. Both the wheelchair and the rider should face forward in the vehicle. If possible, tie downs, restraint belts and wheelchairs that meet current standards should be used. A transit option wheelchair has been crash tested so it is safer to use in a vehicle. If your child is transported in her wheelchair on the bus or the family vehicle you can find a detailed brochure at <http://www.travelsafer.org/index.shtml> describing how to use a wheelchair as a transportation device.

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## **Miscellaneous**

### **Head Support Collars**

An older child who has poor head and neck control will eventually have to be positioned forward-facing in a vehicle. Although there are neck collars that provide supplemental neck support, their use during transport in vehicles is of concern. Recent crash tests of a variety of neck collars indicate that most models increased neck tension. The crash tests suggest that stiff and formed neck collars should be removed prior to transport and replaced with soft, foam cervical collars during transit.

Note: A child's head should never be secured to a restraint in an attempt to prevent the head from falling forward. There is, however, an exception. One model of large medical seat offers a cap accessory that attaches to the restraint with Velcro. This product has been crash-tested to be used with the restraint.

### **Medical Equipment**

To date, there is no product available designed specifically to secure medical equipment, such as apnea monitors or oxygen, in a vehicle. Current recommendations for securing equipment include placing it on the floor of the vehicle wedged with pillows, foam, or blankets or securing the equipment with unoccupied seat belts.

### **Modifying Restraints**

Child safety seats or restraints that have been structurally modified should not be used unless they have been crash tested with the modification to conform to federal motor vehicle safety standards. What might seem like a minor structural modification can greatly compromise the performance of the restraint in a crash and place the occupant in jeopardy.

# Contact Information

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## Angel Ride

Weight: less than 9 pounds  
Height: less than 21.5 inches

For infants who must travel down in a car bed.

(Contact: AngelGuard, 330-723-5928,  
<http://angel-guard.com>)

## Dream Ride SE

Weight: 5-20 pounds  
Height: 19-26 inches

For infants who must travel lying down in a car bed.

(Contact Dorel Juvenile Group, 800-544-1108,  
[www.djgusa.com](http://www.djgusa.com))

## Hope Car Bed

Weight: 4.5-35 pounds  
Height: up to 29 inches (longer if legs permitted to bend)

For infants who must travel lying down in a car bed.

(Contact Merritt Manufacturing, 317-409-0148,  
[www.eztether.com](http://www.eztether.com))

## Snug Seat Hippo

Weight: 5-35 pounds rear-facing/1 year old and 20-65 pounds forward-facing  
Height: up to 49 inches

For infants or toddlers in hip casts

(Contact: Snug Seat Inc., 800-336-7684,  
[www.snugseat.com](http://www.snugseat.com))

## Modified E-Z-ON Vest

Ages: 1-12 years  
Weight: 20-100 pounds  
Height: Child must fit lengthwise on vehicle bench seat.

For children lying down.

(Contact: E-Z-ON Products, 800-323-6598,  
[www.ezonpro.com](http://www.ezonpro.com))

## E-Z-ON Vest

Ages: 2 and older  
Weight: 20-168 pounds

For children who have behavior problems.  
Tether required.

(Contact: E-Z-ON Products, 800-323-6598,  
[www.ezonpro.com](http://www.ezonpro.com))

## Columbia Medical Orthopedic Positioning Seat (2 sizes)

Child:  
Weight: 20-102 lbs  
Height: 36-60 in.

Small Adult:  
Weight: 65-130 lbs  
Height: 54-66 in.

For older children who need more support because of problems sitting upright or behavior issues.  
Tether required.

(Contact: Columbia Medical, 800-454-6612,  
[www.columbiamedical.com](http://www.columbiamedical.com))

## Columbia 2400 Spirit

Weight: 25-130 pounds  
Height: up to 66 inches

For older children who need support because of problems sitting upright or behavior issues.  
Tether requirements vary by vehicle.

(Contact: Columbia Medical, 800-454-6612,  
[www.columbiamedical.com](http://www.columbiamedical.com))

## Recaro Start 2.0 Plus

Weight: 30-80 pounds  
Height: 37-59 inches

For older children who need more support because of problems sitting upright or behavior issues. Comes with internal harness for positioning and uses lap/shoulder belt for occupant protection.

(Contact: Reha Partner, Inc., 866-282-4558,  
[www.reha-partner.com](http://www.reha-partner.com))

# Contact Information

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## **Britax Traveller Plus EL**

Weight: 22-105 pounds

Height: up to 56 inches

For older children who need more support because of problems sitting upright or behavior issues.

Tether required.

(Contact: Snug Seat Inc., 800-336-7684,  
www.snugseat.com)

## **The Roosevelt**

Weight: 33-115 pounds

Height: 33.5-62 inches

For older children who need more support because of problems sitting upright or behavior issues.

Tether requirements vary by vehicle.

(Contact: Meritt Manufacturing, 317-409-0148,  
www.eztether.com)

## **Carrie Car Seat**

(4 different sizes)

Weight: 20-130 pounds

Height: 30-68 inches

For older children who need support because of problems sitting upright or behavior issues. Tether required.

(Contact: Tumble Forms Sammons Preston Rolyan,  
800-323-5547, www.sammonspreston.com)

## **Special Tomato**

(2 sizes)

Small: Weight: 20-80 pounds

Height: 32.5-50 inches

Large: Weight: 80-150 pounds

Height: 50-63 inches

For older children who need more support because of problems sitting upright or behavior issues. Optional seat cushion to increase width and depth. Tether required.

(Contact: Bergeron Health Care, 800-371-2778,  
www.adaptivemall.com)

## **Recaro Monza**

Weight: 33.1-110.2 pounds

Height: 37-59 inches

For older children who need support because of problems sitting upright or behavior issues. Comes with internal harness for positioning and uses lap/shoulder belt for occupant protection.

(Contact: ExoMotion, 866-870-2122,  
www.exomotion.com)

## **Snug Seat Pilot**

Weight: 30-120 pounds

Height: 38-63 inches

For older children who need support because of problems sitting upright or behavior issues. Comes with internal harness for positioning and uses lap/shoulder belt for occupant protection.

ISOFAST system optional for installation.

(Contact: Snug Seat, Inc., 800-336-7684,  
www.snugseat.com)

## **The Churchill**

Weight: 65-175 pounds

Heights: up to 72 inches

For older children who need support because of problems sitting upright or behavior issues. Uses lap/shoulder belt for occupant protection. LATCH required.

(Contact: Merritt Manufacturing, 317-409-0148,  
www.eztether.com)