

CAR SAFETY SCREENING IN THE LATE PRETERM INFANT

Prior to discharge home, hospital care providers will assess a late preterm infant's safety in a car seat. When positioned semi-reclined in a car safety seat, preterm infants may not be able to keep their head upright and are at increased risk of blocking their airway. Preterm infants may have a decrease in heart rate (i.e., bradycardia), a decrease in oxygen concentration in the blood (i.e., oxygen desaturation), or a pause in breathing (i.e., apnea) for a short amount of time while positioned upright in a car seat. Thus, the American Academy of Pediatrics suggests that babies should be monitored for a period of time in their car safety seat before they are discharged home. Families can find additional information on the internet sites listed at the end of this chapter and also seek advice from hospital and pediatric care providers.

Purchasing a Car Seat

When purchasing a car seat for an infant, it is important that families follow these guidelines:

- Make sure that the car seat is appropriate for the baby's length and weight (some car seats are designed for babies who weigh as little as 3 or 4 pounds), and
- Make sure that the car seat includes several slot options for the shoulder straps so that adjustments can be made to fit the infant properly as he/she grows. Some car seats also

have 2 slot options for the crotch strap, which may be helpful.

When using an old car seat, families should make sure to:

- Avoid using a car seat that has been in an accident, even if it appears in good condition, because it might be damaged and thus, not safe.
- Avoid using a car seat if it is broken or has missing parts.
- Avoid using a car seat if it is past the expiration date (most car seats last between 5 to 9 years after they were manufactured). This expiration date can be found in the car seat's packet insert and is printed on the car seat itself.

Some families might find it helpful to discuss car seat options with the healthcare team before purchasing a car seat. The American Academy of Pediatrics provides an up-to-date list of recommended car safety seats each year that can be found at:

www.healthychildren.org/carseatlist.

Whether your car seat is new or used, be sure to register it with the manufacturer either by mailing in the registration card that comes with the car seat or by contacting the manufacturer directly. This will allow the manufacturer to contact you in the event of a safety recall. You can also stay informed about safety recalls by referring to the website:

<http://www-odi.nhtsa.dot.gov/cars/problems/recalls/childseat.cfm>

Installing the Car Seat and Base

Some car seats can be used with or without a car seat base. A properly installed base helps ensure your car seat is being used

appropriately every time. During installation of the base of the car seat, parents should take the following steps:

- Refer to the vehicle owner's manual for instructions about installing your car seat in your particular vehicle,
- Read the car seat manual to help with installation,
- Place the car seat in the back seat so that your baby is facing the back of the car, and
- Secure the car seat and base to your vehicle by using the vehicle safety belt or the LATCH (Lower Anchors and Tethers for Children). Note: you cannot use both the safety belt and the LATCH at the same time.

If a car safety seat has been installed correctly, a baby should be reclined at a 30- to 45-degree angle. A tightly rolled blanket or foam pool noodle may be placed under the car seat to help obtain this angle. Most car seats will have a level indicator either on the base or the car seat itself to help make sure you have installed the car seat at the proper angle. Some car safety seats have angle indicators and angle adjusters to calculate the exact angle of the seat.

When installing the car seat and base, a family can seek assistance from a child passenger safety technician at their local police department or fire station. To help find an inspection station in your neighborhood, contact 1-866-732-8243 or link to: <http://www.nhtsa.gov/apps/cps/index.htm>

Placement of Infant in Car Seat

When a baby is placed in a car seat, follow these suggestions to ensure that the baby is safe:

- Only use the head support or body support that is provided by the manufacturer. Blanket rolls can also be used if they are recommended by hospital staff for a better fit. However, you should not use both the provided head/body support and blanket rolls at the same time.
- Adjust the shoulder strap using the shoulder slot options so that the strap is at or below the baby's shoulder level.
- Keep the harness snug so that the fabric of the harness cannot be pinched.



Because this infant's car seat strap can be pinched, it is too loose and needs to be tightened.

- Place the chest clip at the level of the baby's nipple line; this clip should not be positioned over the baby's belly or neck.

- Use the crotch strap slot that is closest to the baby for a more snug and proper fit.
- Make sure that the baby's legs cannot cross under the crotch strap.
- In cool temperatures, place a blanket over the baby after he/she is buckled into the car seat.
- Never place your infant in a snowsuit or heavy jacket before buckling him/her in. These materials can become compressed in a car crash and then your infant will not be securely buckled.
- Never place materials (such as fleece linings) under your infant or under the car seat that was not manufactured by the car seat manufacturer for that specific car seat. If additional items are used, the manufacturer's warranty will not cover you in case of a problem.

If families have any questions about the placement of their baby in a car seat, they should ask the hospital clinicians. The picture below shows examples of proper positioning of a late preterm infant in a car seat.

Proper Positioning in a Car Seat



Only use blanket rolls if they are recommended by hospital staff.

Place the chest clip at the level of the baby's nipples.

Use the crotch strap slot that is closest to the baby and make sure that the baby's legs cannot cross under the crotch strap.

Car Seat Screening

A *car seat screening*, also known as a *car safety screen*, involves placing a baby in his/her own car seat for at least 90 minutes. During the screening, the infant's heart rate, oxygen level, and breathing rate are monitored. Most late preterm infants will have stable values. For those infants who have a low heart rate, a decrease in oxygen level, or a pause in breathing during the

screening, the hospital staff will decide the next step, which includes one of the following options:

1. Screening the baby in a car bed,
2. Continued hospitalization and monitoring, or
3. Repeat car seat screening.

The plan will depend on the baby's gestational age, specific vital sign changes, and the hospital's policy.

Car Bed

If the hospital clinicians decide to screen the baby in a car bed, a similar safety approach is required.



Similar to the car seat screening, a baby is placed in a car bed for a minimum of 90 minutes and the infant's heart rate, oxygen level, and breathing rate are recorded. If the baby has a significant decrease in any of these measurements, the baby will need to remain in the hospital for continued monitoring. If these values are normal, the baby may be able to be discharged home in a car bed. Just as with the proper installation of a car seat, be sure to read your vehicle owner's manual and the car bed instruction manual prior to installing a car bed.

When using a car bed, the American Academy of Pediatrics recommends that:

- The bed lies flat on the back seat in the car.
- The baby's head should always be positioned toward the middle of the car.
- The baby is secured in the car bed using a 3-point harness.
- The car bed is secured to the car using the car's safety belt.

Car beds cannot be installed using the LATCH system.

If your baby has been discharged home in a car bed, you should avoid placing your baby in a swing, bouncy seat, backpack, or sling until the baby is transitioned back to a car seat. Your baby's pediatric care provider will determine when it is safe to transition to a car seat. This may be based on maturity/neck control of your baby or involve a repeat car seat safety screen in your baby's own car seat.

Car Travel

When a baby travels in a car, an adult should ride in the back seat next to the infant whenever possible. Parents should limit the time that a baby stays in a car safety seat until the baby demonstrates good neck control. If a baby requires additional equipment, such as oxygen or a monitor, this equipment should be restrained or wedged tightly on the floor.

If you plan to use your car seat to travel with your baby on an airplane, you must first check the car seat manual to see if it is approved for use on a commercial aircraft. By using a car seat on

an airplane, you are protecting your baby against injury during turbulence and survivable crashes.

Resources for Families

There are many resources available to families about car safety seats. Some of these are included below:

- General information from the National Highway Traffic Safety Administration: www.nhtsa.gov/Safety/CPS
- LATCH information from the National Highway Traffic Safety Administration: www.nhtsa.gov/Safety/LATCH
- Safety Belt Safe USA: www.carseat.org

Conclusion

The AAP recommends that all infants born less than 37 weeks' gestation pass a car safety screen prior to discharge to home. To make sure that your baby is safe to travel in a car, it is important to follow the recommendations reviewed in this chapter. There are many resources available to families who have questions or concerns about using a car safety seat, including the ones provided in this chapter.

Reference: American Academy of Pediatrics. Safe transportation of preterm and low birth weight infants at hospital discharge. *Pediatrics*. 2009; 123:1424-1429