

Consensus Statement for Infant Car Seat Challenge (ICSC) Testing: UCSF Northern California Neonatal Consortium (NCNC)

Executive summary

Objectives

- To eliminate practice variation around Infant Car Seat Challenge (ICSC) testing.
- To reduce unnecessary prolonged hospital stays or use of car beds for infants.

Recommendations

- The NCNC does not recommend routine ICSC testing before discharge for preterm infants or other infants thought to be “at risk” for abnormal oxygenation when in a carseat.
- Parents and other care providers should be counselled regarding safe car seat use and be able to demonstrate appropriate technique and practice – preferably using their own car seat – before their infant is discharged from hospital.

Methods

This guideline was developed through local consensus based on published evidence and expert opinion as part of the UCSF Northern California Neonatal Consortium.

Metrics Plan

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Introduction

Inclusion Criteria:

- Any infant in whom a car seat test might previously have been considered. For example:
 - Are less than 37 weeks GA at birth, or less than 2500 grams
 - Have other medical conditions, which may put the infant at risk for respiratory compromise in a car seat
 - Infant with respiratory or cardiac conditions
 - Infants with neuromuscular abnormalities
 - Infants with craniofacial malformations that can lead to abnormal airway
 - Infant with history of apnea
 - Any infant thought to be “at risk” for abnormal oxygenation

Background

- The American Academy of Pediatrics (AAP) recommends that all neonates born at <37 weeks gestation receive a pre-discharge Infant Car Seat Challenge (ICSC) to assess the risk for desaturation, apnea, or bradycardia
- The Canadian Pediatric Society (CPS) does not recommend ICSC
- Kaiser Permanente in Northern and Southern California does not perform car seat tests
- A retrospective review of 1173 preterm neonates over 2 years found no statistically significant or clinically important difference between those who passed and those who failed (Davis et al. 2013).
- Another study looked at 7899 infant cared for in 788 hospitals (Jensen et al. 2017)
 - Car seat challenge failure was associated with longer post-test hospitalization, but no difference in the risk adjusted odds for 30-day mortality or hospital readmission
- A study of 60 preterm infants born between 30^{0/7} weeks' GA to 36^{6/7} weeks' GA were studied at a minimum corrected GA of 35^{0/7} weeks using three consecutive ICSCs, conducted every 24 h to 48 h. (Davis et al 2014).
 - 11% of infants that passed a first test failed one of the two subsequent tests.
- These studies cast doubt as to the reliability, reproducibility, and utility of the ICSC.

Recommendations

- Using a car seat challenge (ICSC) to determine if a baby can be safely discharged home **should not be standard practice** due to inconsistency of ICSC results and lack of association with mortality risk.
 - A car seat test may be done on a case-by-case basis if there is provider concern, but there is minimal evidence for doing so.
- Instead, safety for discharge should be assessed based on other signs of physiologic maturity
- Parents and other care providers should be counselled regarding safe car seat use and be able to demonstrate appropriate technique and practice – preferably using their own car seat – before their infant is discharged from hospital.

References

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