



Best Practices for Transporting Infants and Children with Special Needs

**Wendy Meades
Occupational Therapist
Sunny Hill Health Centre
September 20th, 2007**

wmeades2@cw.bc.ca



Agenda

- Best practices guide by Transport Canada
- Legislations and Regulations
- Conventional Safety seats
- Seat Belt Exemptions
- Production safety seats
- Custom Safety seats



A Best Practices Guide for Healthcare Professionals

- A 2007 guide for health care professionals by Transport Canada
- Best practices in transporting infants and children with special needs in personal vehicles



Best Practices Guide continued

- The guide provides information on:
 - **Legislature and regulatory requirements**
 - **Child restraint systems available in Canada**



Legislation and Regulations

- Laws regarding car seat differ in each province and territory
- Height and weight always takes precedence over age

Regulations continued

- Canadian Motor Vehicle Safety Standards (CMVSS)
- All car seats manufactured or imported into Canada must include:
 - a National Safety Mark with CMVSS #, manufacturer authorization #
 - Date of manufacture, model name, height and weight requirements and instructions for use and warnings



Different Types of Vehicle Safety Seats

- Conventional
- Seat Belt Exemptions
- Production
- Custom



Conventional Infant and Child Car Seats

- A conventional car seat is the preferred option.
- Children need to be able to:
 - Bend and flex at the hip while seated
 - Maintain respiration in an upright or semi-upright position
 - Maintain head and neck control (if over 22 pounds)



Best Practices for Infants- Conventional Car Seats

- Stage 1-Rear facing infant seat
 - Infant to 1 year
 - Up to 10kg (22 pounds)
- Centre position is best

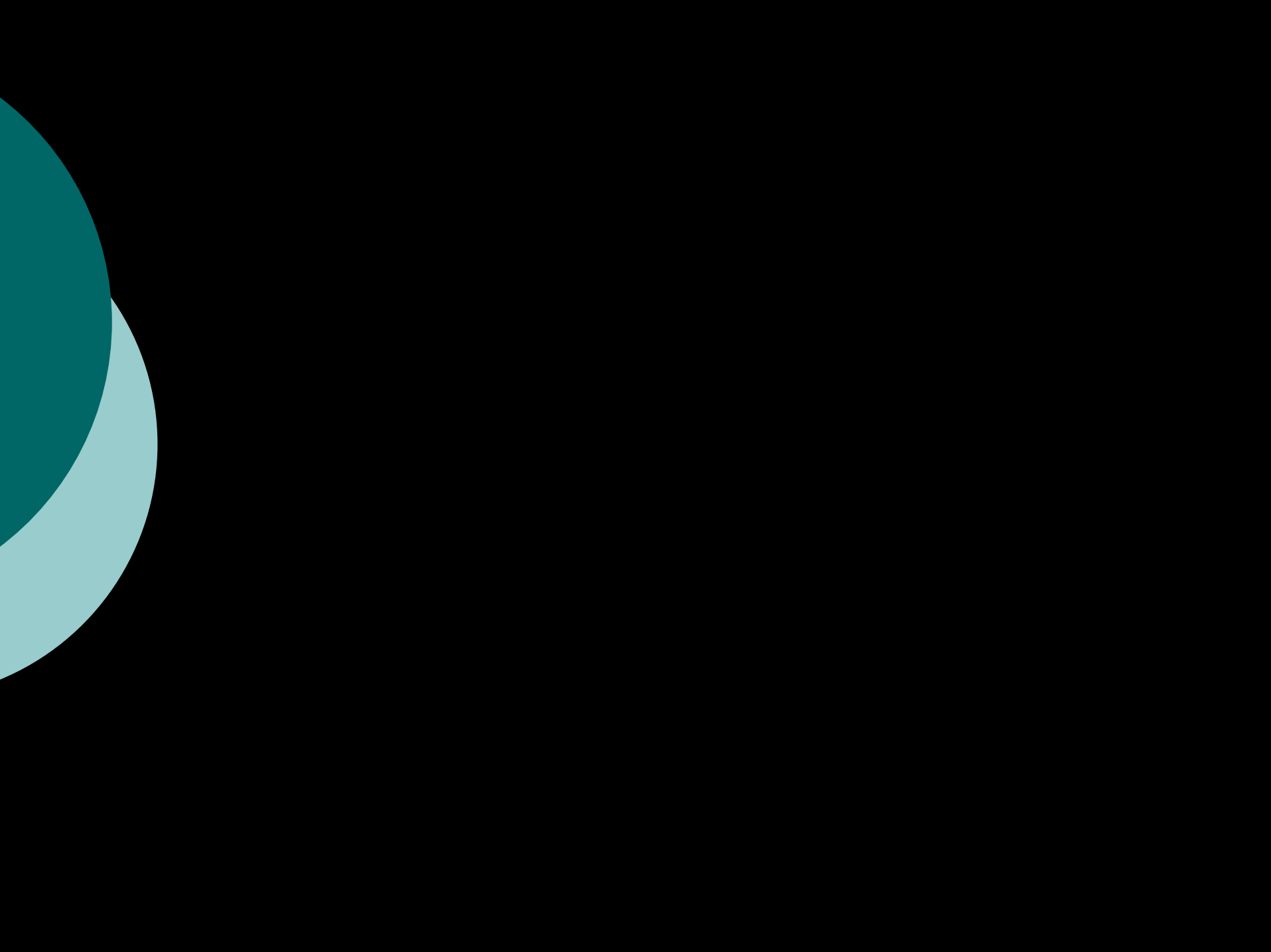
Best Practices for ages 1-4.5

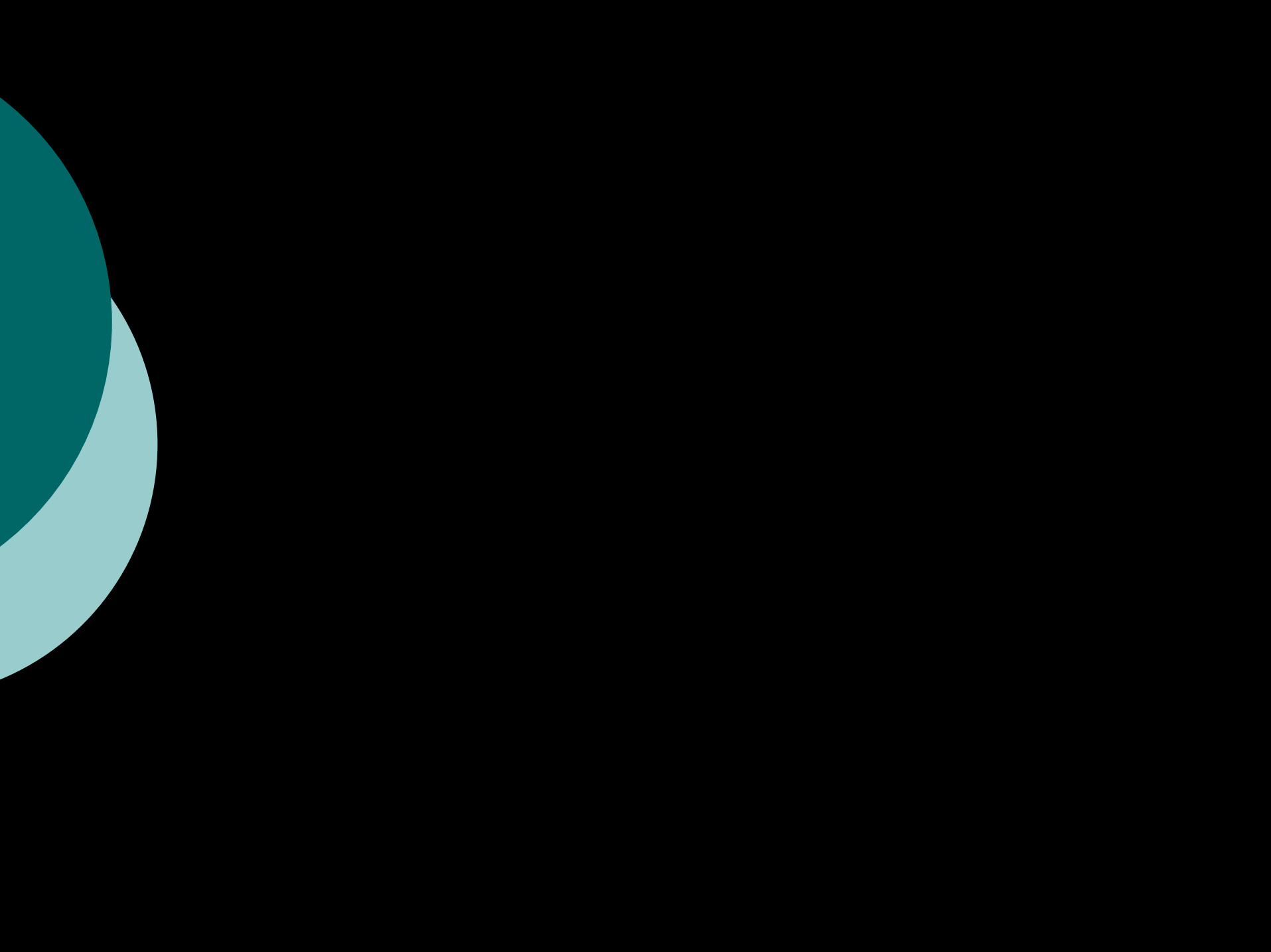
- Stage 2-Forward facing car seat
 - 10kg(22lbs) to 18kg (40lbs)
- As of May 2007 stage 2 has been expanded to (30kg) 65 pounds
 - Upon manufacturer's self certification
 - Ensure vehicle anchor points and car seat combos are tested and approved to 65 pounds

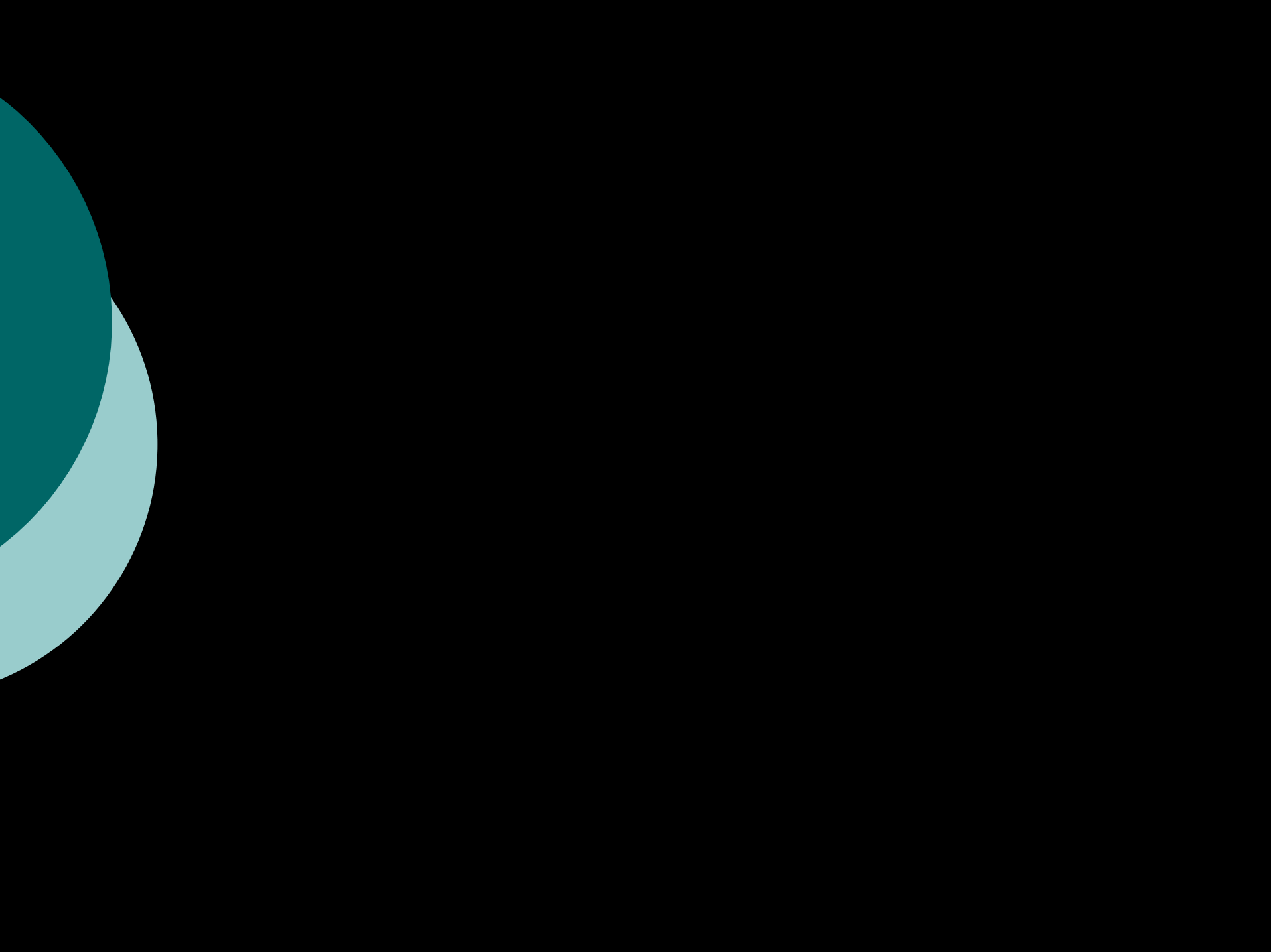


Best Practices for 4.5-9 years old

- Stage 3-Booster Seat
 - 18kg (40 pounds) to 36kg (80 pounds)
- July 2008-New regulations in BC will require the use of booster seats until 9th birthday unless they have reached a height of 145cm (4'9) or 80 pounds
- www.BoostBC.ca









Options for Children with Special Needs

- Seat Belt Exemption
- Production Safety Seats
- Custom Safety Seats



Seat Belt Exemption

- A form needs to be filled out by a legally qualified medical practitioner certifying that due to physical characteristics or medical reasons, they are unable to wear a seatbelt assembly for a stated period of time.

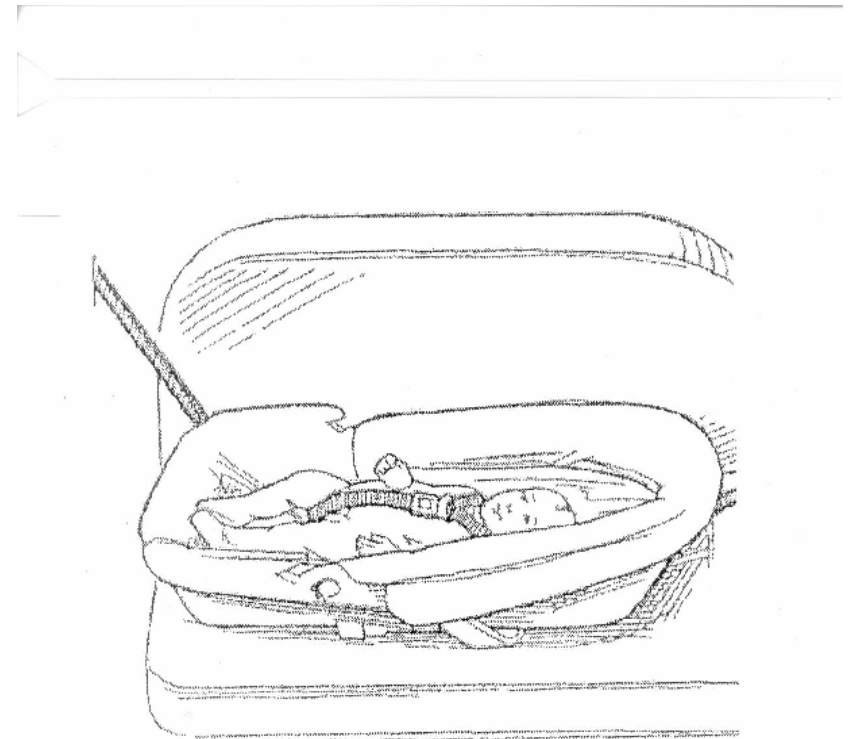


Production Restraints

- Intended for children who are either under or over the recommended height or weight requirements of conventional child restraint systems and/or who have medical conditions that impact on their use

Production Restraints for Infants (car beds)

- For small or premature infants with compromised respiration or must travel lying down
- Place in a flat position along the vehicle's rear bench seat with the head of the infant towards the centre of the vehicle



© ILL. MED. ILLUS. DEP

INFANT IN A CAR BED



Car Beds continued

- A car bed may be suitable for infants:
 - <37 weeks gestation
 - <birth weight of 2.2kg (4.9 lbs)
 - With casts
 - With musculoskeletal or health condition
 - Requiring a supine or prone position



Production car seats for older children with special needs

- Car seats designed to accommodate a weight range from 9kg-48kg (20-105 pounds)



Custom Safety Seats

- Any modifications to a conventional or production restraint system
- Any custom safety system requires the documentation that is attached in your handouts according to CMVSS regulations



Custom Restraint-Safety Vest

- The EZ on vest is suitable for children:
 - with physical disabilities, developmental /behavioural difficulties, poor trunk control and certain types of casts
 - 2 years of age or older and weighing between 20-160 lbs.
- A heavy duty tether kit is required for children that are between 80-160lbs

Pictures of EZ on vests

Front View



Back View





Modified Safety Vest

- EZ on vest is also available for children that need to travel lying down
- 2-12 years old
- 20-100 pounds
- For children that are over 76cm, 2 seatbelts are required

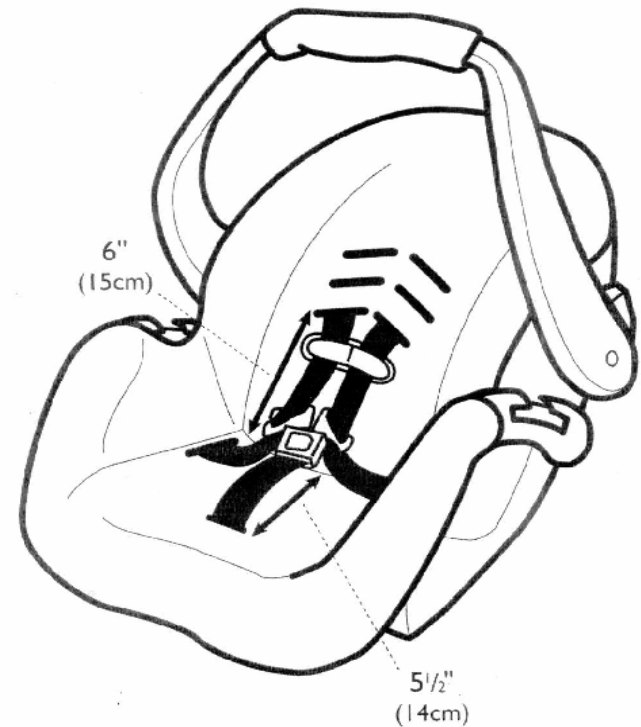


Q-Vest

- This vest that has not been tested on vehicles and is in use on buses in the States
- They are not approved by Transport Canada for use in a vehicle

Best Practice for Premature infants or low weight (born less than 37 weeks gestation)

- Select an infant car seat with the following features:
 - a five point harness
 - Less than 5 ½" from the crotch strap to the seat back
 - Ability to recline 45 degrees





Premature infants continued

- Blanket rolls or towels can be placed on the sides of the infant or between the child's legs and crotch strap
- Do not add padding under or behind the infant
- Ensure shoulder straps for harness are at or below infant's shoulders
- Position chest clip at armpit level



Infants/children that are medically fragile

- Medical equipment, such as apnea monitors or oxygen tanks, should be anchored to the floor of the vehicle or anchored under the vehicle seat.



Best practices for children with decreased head control

- Support the head laterally or in the form of a neck collar (e.g. Hensinger or custom neck collar)
- Choose a car seat that has the ability to recline/tilt
- Use padding along the sides of the child's trunk and head for support

Children with low or high muscle tone (sliding or thrusting forward)

- Place a folded towel between the child and the crotch strap to fill excess space
- Place a rolled towel under the child's knees to increase hip flexion
- Do not place anything under the child's pelvis

Children with a Hip Spica Cast/Brace

- **The Spelcast car seat (not manufactured anymore)**
- **The Britax Hippo (awaiting testing)**
- **Radian car seat by Sunshine Kids**



PAVLIK HARNESS



SPICA CAST



Children with a leg cast

- If possible, continue to use conventional car seats
 - Ensure child can sit upright
 - Cast should not interfere with buckling mechanism
- May need to use an EZ on vest lying down
- Ensure that the cast is against the back of the seat



Children with a Tracheostomy

- Avoid trays or shields
- Semi-Reclined
- Secure medical equipment
- Batteries should have enough power for double the length of the trip



Children with Feeding Tubes

- Ensure the harness system does not run against the feeding tube
- Avoid pulling on tube when harness is fastened

Children with a Halo Brace

- Thread the shoulder straps through the halo between the outside bars and the neck
- Keep a pair of scissors handy to cut webbing in an emergency



CHILD WITH HALO TRACTION



Best Practices for children with Behavioural Issues

- Commercially available guards over the seat belt
- EZ on vest with rear back closure



Modification No Nos

- Anything against the manufactures' instructions
- Shell-Do not poke holes, drill into, or cut the shell
- Seatbelt/straps-Do not cut, change the angle or pull or re-sew

Best Practices: traveling in a wheelchair in a vehicle

- **Wheelchair in a forward facing upright position**
- **Four point tie down devices attached to the main frame of the wheelchair and the vehicle**
- **Vehicle shoulder/lap belt to be used**
- **Brakes on and lap tray removed**
- **Turn the power off on a power wheelchair**



Conclusions

- Take the least intervention approach
- Try to use commercially available products
- Before you prescribe it, try it!
- Educate families
- Document



Websites/Resources

- Transport Canada: www.tc.gc.ca
- Safe Kids Canada:
www.safekidscanada.ca
- Safe Ride News:
www.saferidenews.com
- Insurance Corporation of BC (ICBC): www.icbc.com

References

- Car Safety for Tiny Babies, Fact Sheet, Safe Ride News Publications, (October 2006)
- The Halo Thoracic Brace (2005), BCCH
- American Academy of Pediatrics, "Transporting Children with Special Health Care Needs" Vol.104, No.4, October 1999
- Perry Rand Transportation Group (EZ on vests) at www.perryrandltd.ns.ca
- Transporting Infants and Children with Special Needs in Personal Vehicles: A Best Practices Guide for Healthcare Practitioners 2007
www.tc.gc.ca



Questions?
