

Recommendations for Car Seat, Booster Seat and Seat Belt Use for Children

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Provincial Injury Prevention Program

Introduction

In 2016, a working group of AHS staff and external traffic safety partners reviewed and proposed changes to the wording of the Child Safety Seat and Booster Seat *YES Tests*. These resources provided information to parents and caregivers on when and how long to use rear- and forward-facing car seats and booster seats. The proposed changes raised questions from some stakeholders regarding the recommendations for the age, height and weight requirements for car seats and booster seats.

Questions from stakeholders prompted the AHS Provincial Injury Prevention Program to conduct a literature review to:

- Assess the current evidence regarding the age, height, and weight guidelines for child occupant restraint safety;
- Ensure proposed updates being recommended by the working group for car seat, booster seat and seat belt use for children were still in line with current best practice evidence.

Findings

The literature revealed that the lowest fatality rate for child transportation injuries was in Sweden, where children remained rear-facing until age 4 to 5 years old, or until they reached the maximum height or weight for their rear-facing car seat before moving to a booster seat.

Other literature described the best practice recommendations of various injury prevention, pediatric medicine and traffic safety organizations regarding the use of car seats, booster seats and seat belts for children based on:

- The child's weight, height and/or age, and,
- The manufacturer's weight and height limits for their particular car seat or booster seat.

There was consistency in many aspects of the recommendations of Transport Canada (2015 a, b, c, d), Parachute Canada (2014, 2016), the Canadian Pediatric Society (2008), and the American Academy of Pediatrics (AAP) (2011, 2015).

The recommendation from the AAP that all children younger than two years of age be restrained in a rear-facing car seat represented a significant change from previous policy, and was based on a review of U.S. crash data that showed rear-facing seats provided optimal protection for children up to two years of age. As a result, the AAP recommend that "all infants and toddlers should ride in a rear-facing car safety seat until they are 2 years of age or until they reach the highest weight or height allowed by the manufacturer of their car safety seat" (AAP, 2011a; AAP, 2011b; AAP, 2015).

Proposed Updates to AHS Recommendations for Car Seat, Booster Seat and Seat Belt Use

The AHS Provincial Injury Prevention Program literature review (2016) provides strong evidence for AHS to propose **4 updated recommendations** for car seats and booster seats in Alberta. Below are the relevant changes being proposed. Once these key recommendations are approved, resources and information for parents/caregivers on child passenger safety that are reflective of these changes will be developed.

All car seats and booster seat resources will state the following statements:

- Always refer to the car seat manufacturer's instructions for the maximum weight and height limits of the child's particular car seat, and to the vehicle manual for installation instructions.
- A child is safest in their car seat and booster seat until the maximum weight or height limits stated by the manufacturer have been reached.

1. Seating location of children in the vehicle

- Previous recommendation
 - Children 12 years old and younger are safest riding in the back seat.
- New recommendation (changed wording in order to clarify the recommendation)
 - Children under the age of 13 are safest in the back seat.

2. Car seats, rear-facing

- Previous recommendation
 - A baby should stay rear-facing until he/she is at least 1 year of age and 22 lbs and walking.
- New recommendation
 - A child is safest staying rear-facing until he/she is at least 2 years of age or reaches the maximum weight or height limit of the rear-facing seat, as stated by the manufacturer.
 - A rear-facing seat provides the best protection for a child's head, neck and spine in a sudden stop or crash.
 - Many rear-facing car seats are designed with higher weight and height limits beyond 2 years of age, these models are preferred.

3. Car seats, forward-facing

- Previous recommendation
 - A child should be in a forward-facing child safety seat until he/she weighs at least 40 lbs (18 kg).
- New recommendations
 - Once a child is at least 2 years of age or reaches the maximum weight or height limit of their rear-facing car seat, as stated by the manufacturer, he/she can move into a forward-facing car seat.
 - Use a forward-facing car seat until the child reaches the maximum weight or height limit of that seat, as stated by the manufacturer.

4. Booster seats

- Previous recommendation
 - Use a booster seat until the child is at least 80 lbs (36 kg), or is 9 years of age, or 4'9" (145 cm) tall.

- New recommendation
 - Once a child reaches the maximum weight or height limit of their forward-facing car seat, as stated by the manufacturer, he/she can move into a booster seat.
 - A child is safest in a booster seat until he/she reaches the maximum weight or height limit of that seat, as stated by the manufacturer.
 - A child is ready to exit his/her booster seat when the vehicle seat belt fits properly (see recommendation 5); this is typically when a child is 145 cm (4'9") tall and between 8 and 12 years of age.

5. Seat belts (no change to recommendation)

Children can safely use a seat belt when

- They are at least 145 cm (4 feet 9 inches) tall.
- Their knees bend comfortably at the edge of the seat when sitting all the way back.
- The lap belt stays low and snug across the hip bones.
- The shoulder belt crosses the chest and stays between your child's neck and shoulder.
- They can sit like this for the whole trip without slouching.
- Until your child can meet all 5 steps, continue using a booster seat on every ride.

Booster Seat Legislation

Unfortunately, there is a gap between the legislation in Alberta and best practices in child seat safety, and **Alberta is the only province in Canada without booster seat legislation.** (See Appendix).

The AHS Provincial Injury Prevention Program literature review of effective interventions to increase the use of booster seats found 16 studies that reviewed the effect of legislation on increased booster seat use (AHS, 2014). All of these studies showed significant improvement in booster seat use and decreased injury rates with legislation, including:

- After booster seat legislation was implemented in New York State in 2005, "there was a significant reduction in the injury rate, and a 72% increase in child restraint use among passengers 4 to 6 years old" (Sun, Bauer & Hardman, 2010).
- Identification that booster seat laws are associated with decreased fatalities in children 4 to 7 years of age, with the strongest association seen in children 6 to 7 years of age.
- Booster seat laws introduced in five U.S. states increased the use of booster seats and car seats, increased the number of children seated in the back seat, and reduced injuries to children in crashes.

Recommendation: The Provincial Injury Prevention Program recommends that the AHS Injury Prevention Steering Committee and its key leaders/stakeholders advocate for booster seat legislation to protect the safety of children of Alberta.

Next Steps

1. Distribute Recommendations for Car Seat, Booster Seat and Seat Belt Use for Children to AHS stakeholders for feedback. Review and incorporate feedback, as appropriate.
2. Present the revised draft recommendations to the AHS Injury Prevention Steering Committee for review, feedback and approval.
3. Develop, update, and/or build upon existing car seat, booster seat and other child seat resources, in collaboration with Zones and key stakeholders.
4. Develop and implement a communication/implementation plan in collaboration with Zones and key internal stakeholders, to ensure the necessary changes are communicated to and implemented by the Zones and key internal stakeholders, and by traffic safety partners across the province.

References

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Appendix

Table 1: Booster seat legislation and recommendations across Canada

Province	Booster Seat Legislation
British Columbia	Children must ride in a booster seat until they are a minimum of 4 feet, 9 inches (145 cm) tall, or a minimum of 9 years old.
Alberta	No provincial law.
Saskatchewan	Booster seats are mandatory for children under 7 years of age, less than 145 cm (4'9") in height and 36 kg (80 lb.) in weight
Manitoba	Children must ride in a booster seat until they are a minimum of 4 feet, 9 inches (145 cm) tall, or a minimum of 80 pounds (36 kg), or a minimum of 8 years old.
Ontario	Children must ride in a booster seat until they are a minimum of 4 feet, 9 inches (145 cm) tall, or a minimum of 80 pounds (36 kg), or a minimum of 8 years old.
Quebec	Children must ride in a restraint system or booster seat until they have a minimum seated height (measured from the seat to the top of the head) of 25 inches (63 cm). Follow manufacturer's recommendations for seat type, weight and height requirements for your child.
New Brunswick	Children must ride in a booster seat until they are a minimum of 4 feet, 9 inches (145 cm) tall, or a minimum of 80 pounds (36 kg), or a minimum of 9 years old.
Nova Scotia	Children must ride in a booster seat until they are a minimum of 4 feet, 9 inches (145 cm) tall, or a minimum of 9 years old.
Prince Edward Island	Children must ride in a booster seat if they are over 40 pounds (18 kg). [*] They must ride in a booster seat until they are 4 feet, 9 inches (145 cm) tall, or a minimum of 10 years old. [*] Maximum weight based on booster seat manufacturer's recommendations.
Newfoundland and Labrador	Children must ride in a booster seat until they are a minimum of 4 feet, 9 inches (145 cm) tall, or a minimum of 80 pounds (36 kg), or a minimum of 8 years old.
Yukon	Child must weigh over 22 kg (48 lb.). A booster seat is required until at least 145 cm (4'9") or 45 kg (100 lb.), whichever comes first.
Northwest Territories	No provincial/territorial law.
Nunavut	No provincial/territorial law.