



CHILD PASSENGER SAFETY

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Abstract

Child passenger safety has significantly progressed over the last decade, yet motor vehicle collisions remain the primary cause of mortality for children aged four and above. This policy statement presents four evidence-based suggestions for optimal practices in selecting a child restraint system to enhance safety in passenger vehicles for children from infancy to adolescence: (1) Utilize rear-facing car safety seats for as long as feasible; (2) Transition to forward-facing car safety seats once children surpass the limits of rear-facing seats, typically until at least 4 years of age; (3) Employ belt-positioning booster seats after outgrowing forward-facing seats, generally until at least 8 years of age; and (4) Implement lap and shoulder seat belts for all individuals who have exceeded the requirements for booster seats.

Furthermore, a fifth evidence-based recommendation stipulates that all children under 13 should occupy the rear seats of cars. It is crucial to acknowledge that each change entails a reduction in protection, so parents should be motivated to postpone these transitions for the maximum duration. These suggestions are formulated as an algorithm designed to assist pediatricians in implementing them for their patients and families, addressing most scenarios encountered in practice. The American Academy of Pediatrics advocates that all physicians familiarize themselves with and endorse these suggestions as integral components of child passenger safety anticipatory guidance during each health supervision appointment.

Keywords: child, passenger, anticipatory, familiarize

INTRODUCTION

Increased vehicle crashworthiness and utilization of child restraint systems have substantially impacted children's automobile safety. Significant changes in child restraint utilization, especially adopting booster seats for older children, have transpired due to public education initiatives and improvements to child restraint legislation across nearly all states. Moreover, scientific information has been increased to recommend optimal practices in kid passenger safety. Current estimates suggest that child safety seats diminish the risk of injury by 71% to 82% and decrease the risk of death by 28% compared to children of comparable ages using seat belts. Booster seats diminish the likelihood of nonfatal injury in children aged 4 to 8 by 45% compared to seat belts.

However, motor vehicle crashes in the United States result in the deaths of nearly 1,000 minors under the age of 16 each year, despite our progress. The American Academy of Pediatrics (AAP) firmly advocates for the highest safety standards for children and adolescents of all ages in all modes of transportation. This policy statement presents five evidence-based suggestions for best practices to enhance safety in passenger vehicles for all children, from birth through adolescence.

1. Until they reach the maximum weight or height permitted by their vehicle safety seat (CSS) manufacturer, all newborns and toddlers should ride in these seats for as long as feasible. Most convertible seats feature a limit that allows youngsters to ride rear-facing for two years or longer.
2. For as long as feasible, up to the maximum weight or height permitted by the maker of their CSS, all children who have outgrown the rear-facing weight or height limit for their CSS should wear a forward-facing CSS with a harness.
3. Any child who exceeds the forward-facing limit for their CSS due to their weight or height should utilize a belt-positioning booster seat until the vehicle lap and shoulder seat belts are appropriately adjusted. It typically occurs when the child is between the ages of 8 and 12 and has reached a height of 4 feet 9 inches.
4. For the best possible protection, it is recommended that children use lap and shoulder seat belts when they are mature enough and large enough to sit in the vehicle alone.
5. It is recommended that children under the age of 13 be secured in the rear seats of vehicles to ensure their safety.

It is essential to observe that the recommendation that all children be restrained in a rear-facing-only or convertible CSS used rear-facing for as long as possible is a substantial departure from the previous AAP policy. This recommendation is based on data from Indonesia and extensive experience in Jakarta. It is pertinent to mention that most CSSs presently available have weight restrictions for rear-facing use that can accommodate children weighing 35 to 40 lbs.

Noted in the accompanying technical report are specific considerations pertinent to commercial airline travel and included in this policy statement. Additional AAP policy statements provide Specific recommendations for optimizing safety for preterm and low birth weight infants, children in school buses, and children using other travel and recreational vehicles. Moreover, supplementary AAP policy statements offer guidance for adolescent drivers and the secure transportation of newborns and children with specific healthcare requirements.

Pediatricians are essential in advocating for kid passenger safety. Evidence-based guidelines for the optimal safeguarding of children of all ages in passenger vehicles are provided in an algorithm format.

The technical report that accompanies this document includes an overview of the evidence that substantiates these recommendations. Since pediatricians are parents' primary information source, they should stay up to date on these best practice guidelines and encourage and record them during each health supervision visit. Prevention of motor vehicle accident injury is the sole topic that Bright Futures recommends for every health supervision visit, making it a unique topic in health supervision.

Pediatricians can utilize this information to advance child passenger safety through public education, legislation, and regulation at local, state, and national levels via various advocacy initiatives, including aligning their state's child passenger safety laws with optimal policy statements.

Pediatricians are encouraged to stay informed about the development of complex guidelines and resources on motor vehicle safety for children. Many cities have child passenger safety technicians who have completed a standardized course from the National Highway Traffic Safety Administration and may provide hands-on advice and help to families.

METHOD

The research was conducted in Jakarta Regency from May to October 2023, focusing on the use of seat belts to ensure the safety of child passengers during air travel. The study utilized primary data collected through interviews with parents of passengers and children over the age of 8. A total of 50 respondents, comprising airplane passengers from various airlines, participated in the study. The data aimed to explore parents' awareness and practices regarding seat belt usage for their children. Additionally, the study analyzed factors influencing compliance with safety protocols. This research provides valuable insights into improving safety measures for young passengers and highlights the importance of promoting seat belt usage to minimize risks during flights.

RESULTS AND DISCUSSION

Recommendation: use safety belts.

It is recommended that all infants and toddlers remain in a rear-facing CSS until they reach the maximum weight or height permitted by the manufacturer of the CSS. In general, rear-facing seats are equipped with a handle for easy transport and can be easily inserted and removed from a base preinstalled in the vehicle. They may solely be utilized in a rear-facing position. Typically, convertible CSSs have higher rear-facing weight and height limits than rear-facing-only seats and can be used forward or rear-facing.

Once children utilizing rear-facing-only seats attain the maximum weight limit for their seat, they should remain in a rear-facing position in a convertible seat for as long as feasible. Most presently available convertible seats can be used in a rear-facing position for weights up to 40 pounds.

All children who have outgrown the rear-facing weight or height limit for their CSS should use a forward-facing CSS with a harness for as long as practicable, up to the highest weight or height allowed by the CSS's manufacturer.

Seats that can be used forward-facing with a harness system and then converted to a booster seat with the harness removed when the child reaches the harness's height or weight limit are known as combination CSSs.

Numerous versions of convertible and combination child safety seats can support youngsters weighing up to 65 pounds, with some accommodating weights between 70 and 90 pounds when utilized in a forward-facing position. The minimum maximum weight limit for presently available forward-facing vehicle safety seats is 40 pounds.

Several vehicle types provide built-in forward-facing seats equipped with a harness system. The vehicle's owner's manual contains instructions for utilizing integrated seats when available. A crash-tested travel vest may be deemed appropriate for children with specific needs or in circumstances when a conventional child safety seat cannot be properly placed.

Children whose weight or height exceeds the forward-facing maximum for their Child Safety Seat (CSS) must utilize a belt-positioning booster seat until the vehicle's lap and shoulder seat belt fits appropriately, generally when they attain a height of 4 feet 9 inches and are between 8 and 12 years of age.

Young children benefit from the safety of remaining in harnessed car safety seats for an extended duration before transferring to booster seats. Booster seats operate by adjusting the child's position to ensure correct fitment of the vehicle seat belt's lap and shoulder segments: the lap segment should rest low across the hips and pelvis. In contrast, the shoulder segment should align with the mid-shoulder and chest. They are available in both high-back types, which feature a seat back above the child's head, and backless variants. Several automobile models feature built-in booster seats.

Once children reach an adequate age and size to utilize the car seat belt independently, they must consistently employ both lap and shoulder seat belts for maximum safety. The lap segment of the belt must rest low on the hips and pelvis, while the shoulder segment should align with the midpoint of the shoulder and chest while the child is seated against the vehicle's backrest. If they do not, the youngster is likely too tiny to utilize the car seat belt independently and should continue to employ a belt-positioning booster seat.

The CSSs should be securely fastened using the vehicle seat belt or the LATCH system if available. LATCH is a mechanism for securing a child safety seat to the car without utilizing the seat belt. It was engineered to facilitate the installation of the CSS. Regardless of whether parents utilize LATCH or the seat belt, they must consistently guarantee a secure installation of the Child Safety Seat (CSS) within the car.

CONCLUSION

The accompanying technical report summarizes the evidence that supports these recommendations, providing a solid foundation for promoting best practices in child safety. Pediatricians, as trusted advisors to parents, play a crucial role in ensuring the implementation of these recommendations. It is essential for pediatricians to maintain a fundamental understanding of best practices related to child safety and actively promote them during each health supervision visit. They should document discussions and advice provided to ensure consistent messaging and follow-up. Among the various health supervision topics, the prevention of motor vehicle crash injuries stands out as a priority. Bright Futures emphasizes its importance by recommending that this topic be addressed at every health supervision visit, recognizing the significant risk that motor vehicle crashes pose to children. This consistent focus underscores the need for pediatricians to educate parents about proper

car seat usage, seat belt safety, and other preventive measures. By doing so, they contribute to reducing the risk of injury and improving the overall safety and well-being of children.

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