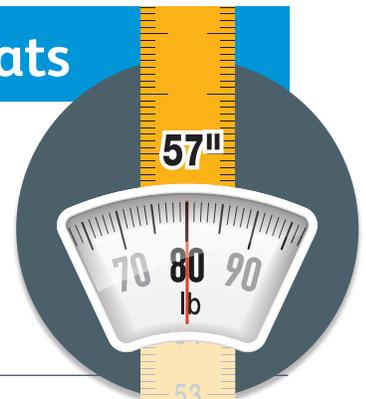




What to Know about Booster Seats

Booster seats protect children who are too big for a car seat but too small for a seat belt.

Seat belts don't fit children properly until they are **at least 57" (4'9") tall and weigh between 80 and 100 pounds.**



Motor vehicle crashes are the second-leading cause of death for children 4 to 10 years old.



1/3 of these children were riding without a restraint that could have saved their lives.

340 children this age died in motor vehicle crashes in 2012.

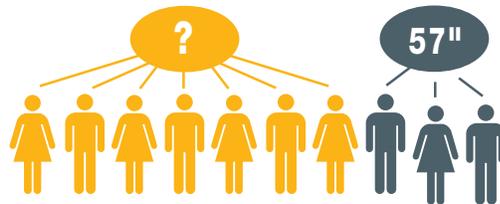
Although seat belts are safer than nothing at all, children who should be in booster seats but wear only seat belts are at risk of **severe abdominal, head and spinal injuries** in the event of a crash.



Booster seats can **reduce the risk** of serious injury by 45 percent compared to seat belts alone.



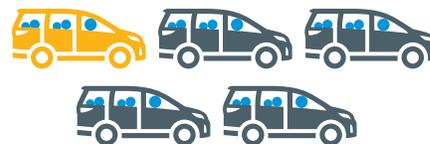
Safe Kids Worldwide surveyed 1,000 parents of 4 to 10 year olds. The study found **seven in ten parents do not know** that a child should be at least 57 inches (4'9") to ride in a car using a seat belt without a booster seat.



The study revealed 9 out of 10 parents move their child from a booster seat to seat belt **before their child is big enough.**



One in five parents whose children carpool say they **"bend the rules"** when driving, letting children ride without seat belts and without the car seat or booster seat they would normally use.



And **61 percent of parents say they notice other carpool drivers** bending the rules.

Buckle up every ride, every time, in the right seat.

REMEMBER: A child needs to be at least 57" tall (4'9") and weigh between 80 and 100 pounds to ride with just a seat belt.

**SAFE
KIDS
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Learn more at www.safekids.org

Executive Summary

Choosing the right car seat is high on the list for any new parent, and every parent plans to leave the hospital with a newborn securely buckled up in a car seat. But as kids grow up, using a car seat or booster seat may feel more like an option rather than a requirement. By the time kids are older and starting school, it might seem like moving to a seat belt is a relief.

But many kids still need a boost in order to ride safely in cars. In 2012, 340 children ages 4 to 10 died in motor vehicle crashes, and 35 percent were not buckled up at the time of the crash.¹ Motor vehicle crashes are the second-leading cause of death for children 4 to 10 years old, second only to cancer.² Many children this age should be riding in booster seats which have been shown to reduce the risk of serious injury by 45 percent compared to seat belts alone for children ages 4 to 8 years.³ Booster seats protect children who are too big for a car seat but too small for a seat belt. We know that seat belts generally don't fit children properly until they are 57 inches or taller and between 80 and 100 pounds.^{6,7}

With the support of the General Motors Foundation, Safe Kids Worldwide surveyed 1,000 parents with children ages 4 to 10 to ask about how their child rides in a car and what leads them to use a booster seat or seat belt.

Seven out of 10 parents don't know that a child should be 57 inches or taller to ride using a seat belt without a booster seat. And when asked what was the most important factor in their decision to move their child from a booster seat to a seat belt, 56 percent—or almost six in 10—said it was for a reason other than their child's height and weight. Eighty-six percent of parents moved their child to a seat belt before they were the recommended height.

We also asked parents about “bending the rules” when their children are carpooling—letting children ride without seat belts and not in the car seat or booster seat they would normally ride in. One in five parents whose children carpool say they “bend the rules.” However, three times as many parents—61 percent—say they notice other carpool drivers “bending the rules.” Twenty-one percent of parents say they rarely or never talk to the person driving the carpool about the type of restraint their own child uses.

What can parents do to make sure their children are safely buckled up for every ride, every time? Here is the one take-home message for parents and anyone who regularly drives with kids:

Buckle kids up in car seats or booster seats until seat belts fit properly, usually when they're 57 inches (or 4 feet 9 inches) tall and between 80 and 100 pounds.

Booster seats protect children who are too big for a car seat but too small for a seat belt.



All children whose weight or height is above the forward-facing limit for their car safety seat should use a belt-positioning booster seat until the vehicle lap-and-shoulder seat belt fits properly, typically when they have reached 4 feet 9 inches in height and are between 8 and 12 years of age.

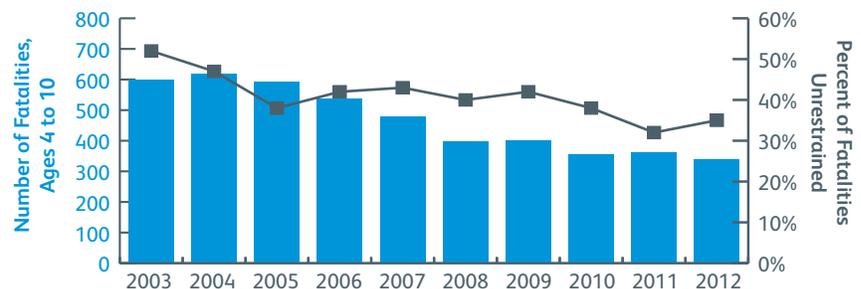
Policy Statement —
Child Passenger Safety, American
Academy of Pediatrics



Children in Motor Vehicle Crashes: What the Data Tell Us

Motor vehicle crashes were the second-leading cause of death for children 4 to 10 years old in 2011, surpassed only by cancer.² In 2012, 340 children ages 4 to 10 died in motor vehicle crashes, and 35 percent weren't buckled up at the time of the crash (Figure 1).¹ The good news is that motor vehicle crash fatalities for children this age has fallen from 598 deaths in 2003, and the proportion that weren't buckled up at the time has also decreased from 52 percent.¹ Buckling up saves lives: a much smaller proportion of children who were injured but not killed in motor vehicle crashes were not buckled up, compared to fatal crashes. Of the 72,600 children ages 4 to 10 who were injured in motor vehicle crashes in 2012, only 6 percent were not buckled up.⁴

Figure 1: Motor vehicle fatalities and the proportion of fatalities that were unrestrained have declined.



How Are Children Riding in Cars?

Safe Kids Worldwide, with the support of General Motors Foundation, surveyed 1,000 parents with children ages 4 to 10 to ask about how their child rides in a car and what factors lead them to use a booster seat or seat belt. If parents had more than one child between the ages of 4 and 10, they were asked to think about their child this age who had the most recent birthday.

Parents most often said their child rode in a booster seat (48 percent), followed by a seat belt without a booster seat (37 percent), a front-facing car seat (11 percent), or no restraint (4 percent). Parents of older children more often say they use seat belts; 69 percent of 8 to 10-year-olds use seat belts, compared to 23 percent of 6 to 7-year-olds (Figure 2).

Sixty-six percent of parents with children ages 4 to 7 years say they use a booster seat; this is higher than the estimate of 46 percent of children this age, based on a national observation survey from the National Highway Traffic Safety Administration.⁵

According to the American Academy of Pediatrics, all children under the age of 13 should ride buckled up in the back seat.⁶ However, we found that 16 percent of parents say their child rides in the front seat at least occasionally (Figure 3). Reasons parents gave for letting children ride in the front seat include short rides (28 percent), if the child is the only passenger (20 percent) and when the backseat is full (19 percent). Even more parents say they have noticed other children similar in age riding in the front seat: 65 percent say they have noticed other children sitting in the front at least occasionally.

Figure 2: Seat belt use is more common in older children.

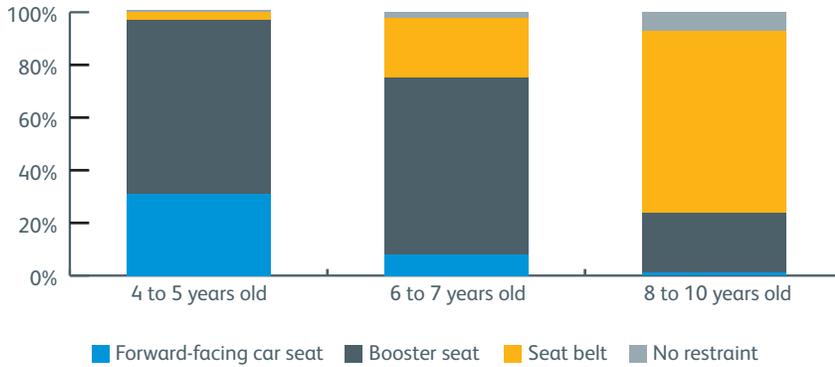
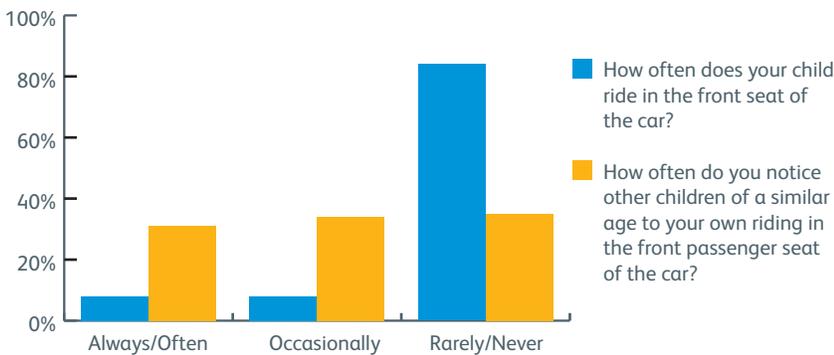


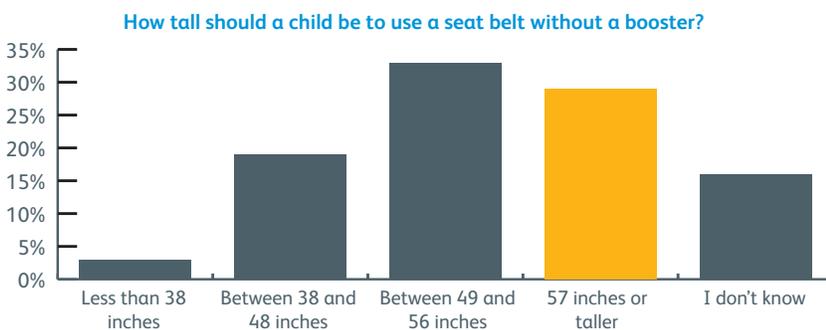
Figure 3: 65 percent of parents have noticed other children riding in the front seat.



When Do Parents Move Kids from a Booster Seat to a Seat Belt?

Booster seats save lives: Using booster seats reduces the risk of serious injury by 45 percent in comparison to seat belts for children ages 4 to 8 years.³ We know that children should use a car seat or booster seat until they are 4 feet 9 inches (57 inches) tall and weigh between 80 and 100 pounds, when they can safely ride using a seat belt.^{6,7} But this important information is not widely known.

Figure 4: 71 percent of parents don't know the height for a child to safely use a seat belt.



Straight Talk from a Child Passenger Safety Technician

"As a Child Passenger Safety Instructor and mother of two children who ride in booster seats, I know how important car seats and booster seats are in keeping my kids safe. Seat belts are designed for adults, and kids need something special to make them fit. None of my friends knew that seat belts are for older kids who are at least 4 feet 9 inches tall and 80 to 100 pounds. Kids who do not fit properly in seat belts are uncomfortable, and they tend to put their shoulder belt under their arms or behind their back, increasing the risk of injuries in a crash. I tell them to read their car and car seat manuals and keep their child in a car seat or booster seat until they reach the top height or weight of the seat. If my long-distance friends are having trouble or have questions, I tell them to locate a nationally certified Child Passenger Safety Technician in their community who can help. SafeKids.org has a list."

— Fatou Benoit
Child Passenger Safety
Coordinator,
Safe Kids Palm Beach County

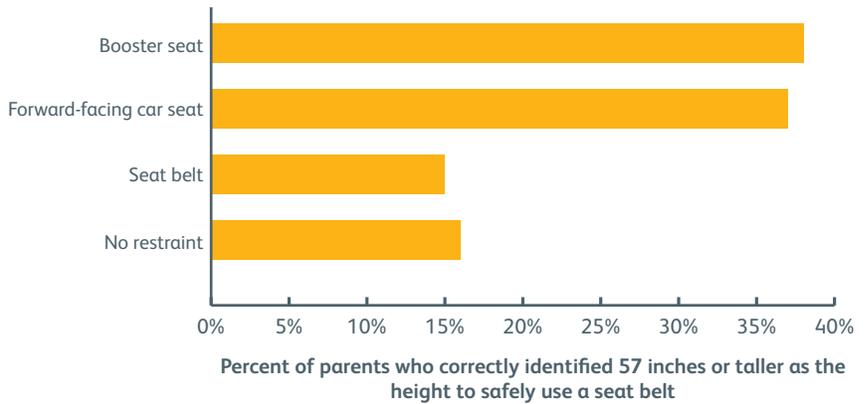


71 percent of parents didn't know that a child should be 57 inches or taller to ride using a seat belt without a booster seat.



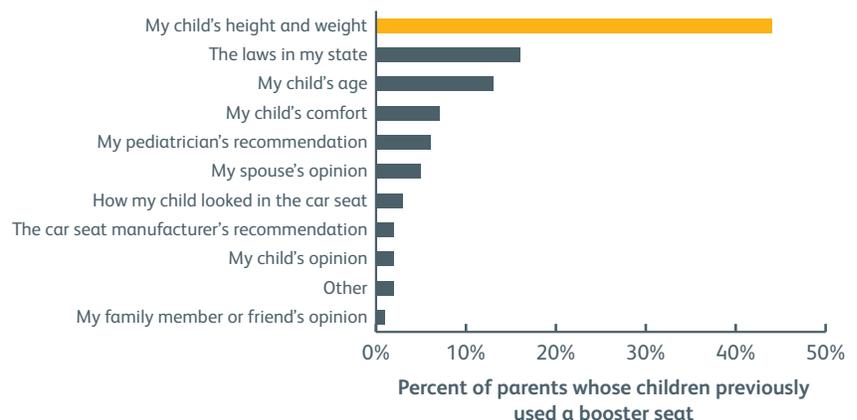
Among all parents, 71 percent didn't know that a child should be 57 inches or taller to ride using a seat belt without a booster seat (Figure 4). Twice as many parents with a child in a booster seat (38 percent) or forward-facing car seat (37 percent) knew the height that children can ride safely with a seat belt, compared to parents whose child rides in a seat belt (15 percent) or without a restraint (16 percent) (Figure 5).

Figure 5: Parents with children in booster seats or front-facing car seats are more likely to know the height that children can safely use a seat belt.



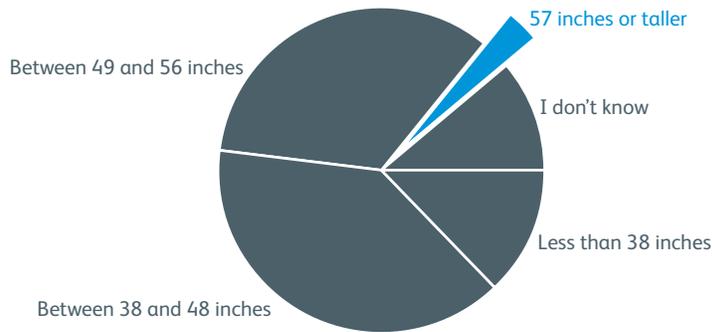
Eighty-three percent of parents in the survey who say their child currently uses a seat belt say their child used a booster seat in the past. While 44 percent of parents correctly say that their child's height and weight was the most important factor in their decision to move their child from a booster seat to a seat belt, 56 percent—or almost six in 10—cited other reasons such as state laws (16 percent)—which might not reflect best practices—their child's comfort (7 percent), and their spouse's opinion (5 percent) (Figure 6).

Figure 6: Height and weight were the most important factor in parents' decision to move their child from a booster seat to a seat belt.



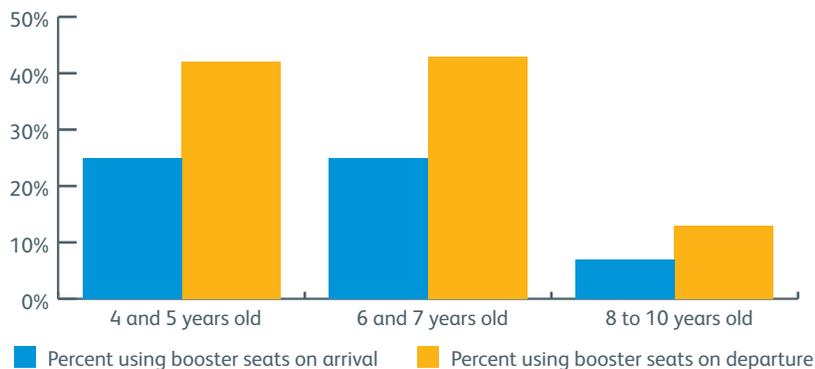
Only three percent say their child was 57 inches or taller when they moved them from a booster seat to a seat belt—the recommended height to use a seat belt (Figure 7). Only six percent of parents say their child was over 80 pounds when they moved to a seat belt.

Figure 7: Only 3 percent of parents say their child was 57 inches or taller (the recommended height) when they moved to a seat belt.



We also see in data from car seat checkups that parents aren't sure when to move children from booster seats to seat belts only. From January 1, 2013 to January 1, 2014, 24,037 children ages 4 to 10 were seen at Safe Kids Buckle Up car seat checkup events, where trained technicians inspect and properly fit car seats and booster seats and educate parents about buckling up. For every age group within this range, a greater proportion of children left the car seat checkup event in a booster seat, compared to when children arrived (Figure 8). For example, 25 percent of children ages 6 and 7 arrived at the checkup event in a booster seat, and 43 percent left the event in a booster seat. A greater proportion of older children ages 8 to 10 left in booster seats than arrived—13 percent compared to 7 percent. Previous research has found that adult drivers report issues with seat belt fit for children ages 4 to 9, especially the position of the lap belt.⁸ These findings point to a need for more education about the importance of keeping all kids in car seats and booster seats until seat belts fit properly.

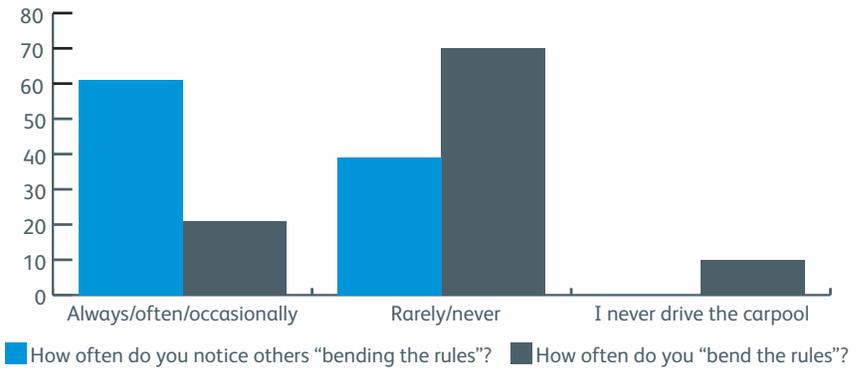
Figure 8: The percentage of children leaving from car seat checkup events in booster seats increased for every age group.



Carpooling: Bending the Rules

We asked parents if their child ever carools (when more than one child is traveling in a car with a driver other than the parent.) Thirty-eight percent of parents say their child carools at least one day a week. Of these parents, 21 percent say they rarely or never talk to the person driving the carpool about the type of restraint their own child uses. One in five parents whose children carpool say they “bend the rules”—letting children ride without seat belts and not in the car or booster seat they would normally ride in (Figure 9). However, three times as many parents—61 percent—say they notice other carpool drivers “bending the rules.”

Figure 9: Sixty-one percent of parents say they notice other carpool drivers “bending the rules.”



Talk with your child’s carpool driver about using the right restraint for him or her.





Lorem ipsum



Booster Seat Laws Make a Difference in Saving Children’s Lives

The age requirements of booster seat laws have an impact on the motor vehicle crash fatality rates among kids of booster seat age across states. Currently, among 50 states and Washington, D.C., 35 states have more stringent laws on booster seat use, requiring that young kids ride in booster seats until they are 7 years old, or even older in some states.⁹ The other 16 states allow children to use a seat belt alone at a younger age, even as young as age 5.

In 2012, the crash fatality rate for children ages 4 to 8 in states with less strict laws was 13.7 per 100,000 children. In contrast, states with stricter laws had a fatality rate of 8.6 per 100,000 children.^{10,11}

Eight of the top 10 states with the highest crash fatality rates are states with less strict booster seat laws (Table 1). These findings are in line with other studies that have looked at the impact of booster seat legislation. Researchers found that states that passed laws requiring the use of a child restraint with internal harness or a booster seat until age 7 or 8 saw reductions in the per capita rate of both fatal and nonfatal motor vehicle crash injuries, and a three-fold increase in the per capita rate of child seat use among children in crashes.¹² Only two states—Wyoming and Tennessee—have laws requiring booster seats through age 8.

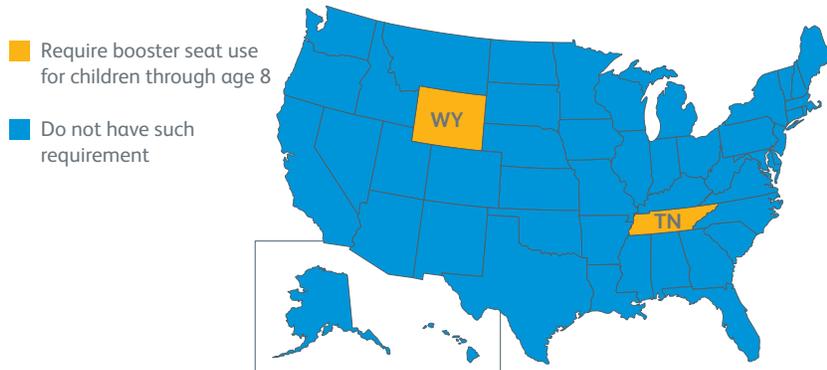
Table 1: Top ten states with the highest motor vehicle crash fatality rate per 100,000 among children ages 4 to 8 years, 2012

State	Fatality rate per 100,000	Number of fatalities	Child passenger safety law requires booster seats until at least age 7	Child safety seat required by law up to age
Wyoming	37.5	15	Yes	8
Montana	27.1	17	No	6
Mississippi	20.8	44	No	6
Arkansas	19.0	38	No	5
Kentucky	18.2	52	No	6
New Mexico	17.8	26	No	6
South Carolina	16.1	49	No	5
Oklahoma	15.0	40	No	5
Alabama	14.6	45	No	5
Kansas	14.6	30	Yes	7

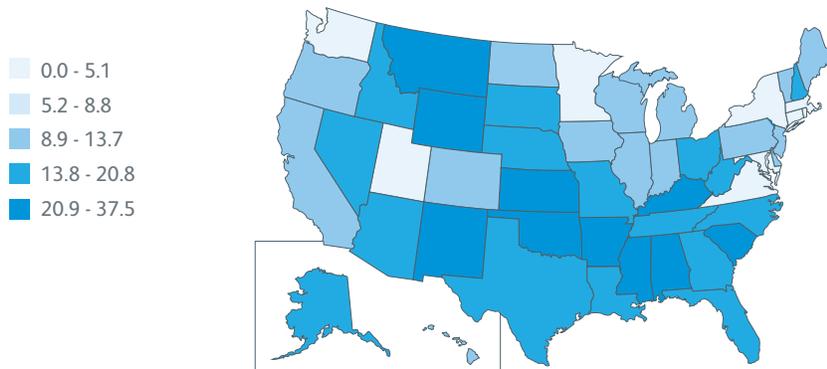
Table 2: Top ten states with the lowest motor vehicle crash fatality rate per 100,000 among children ages 4 to 8 years, 2012

State	Fatality rate per 100,000	Number of fatalities	Child passenger safety law requires booster seats until at least age 7	Child safety seat required by law up to age
District of Columbia	0	0	Yes	7
Rhode Island	1.7	1	Yes	7
Massachusetts	2.6	10	Yes	7
Utah	3.1	8	Yes	7
New York	4.1	47	Yes	7
Minnesota	4.7	17	Yes	7
Washington	4.7	21	Yes	8
Virginia	4.8	25	Yes	7
Maryland	4.8	18	Yes	8
Connecticut	5.1	11	No	6

Only two states require booster seats for children through age 8.



Motor Vehicle Crash Fatality Rate per 100,000 for Children Ages 4 to 8



Public Policy for Child Passenger Safety

Smart public policy has been used effectively to encourage parents and caregivers to protect their children from car crashes with car seats. Since 1997, when Safe Kids teamed up with the General Motors Foundation to create the Buckle Up program, the fatality rate involving kids 9 years and under has declined by 54 percent. There are laws in every state requiring the use of car seats for small children, and with the passage of a law in Florida this year, 49 states have laws requiring the use of booster seats when kids get older and larger. South Dakota is the only state without a booster seat law.

Law enforcement faces a challenge in enforcing these laws because visibility in the back seat is difficult. However, these laws also send a powerful message about the importance of car seats to parents. In our survey, 70 percent of respondents said they knew about booster seat laws. There are several ways that government can continue to play an effective role in increasing the usage of child restraint systems, using the right seat for the right size and encouraging the correct use of the seat.

Car Seat Checkup Events: We found in the results of this survey that parents who have had trained technicians check the installation of car seats are more likely to have a good history of adhering to child safety in cars. For example, parents who have had their seat checked are more likely to say they always or often talk to a carpool driver about the type of car seat their child uses (70 percent) compared to parents who haven't had their child's seat checked (50 percent). In the federal law providing funding for highway safety, resources are available to support car seat check events in states, among other safety efforts. There are ways to better incentivize states to effectively use the funds for car seat checks. As it stands today, the funding formula in the law is skewed in favor of seat belt usage awareness and enforcement. Both car seats and seat belts are vitally important and there should be parity—matched by law enforcement pragmatism—in the way the programs are supported in states.

Tougher Enforcement: Knowing the challenges in enforcing child restraint system laws, high-visibility "click it or ticket" law enforcement efforts should be expanded to include buckling kids into car seats.¹³ NHTSA calls the program "the most successful seat belt enforcement campaign ever."¹⁴ High-visibility law enforcement works best when coupled with aggressive public awareness.¹⁵ The report "Towards Zero Deaths" has embraced high-visibility techniques for child restraint system use.¹⁶

Tax-Free Car Seats: A car seat may be one of the most important purchases a parent will ever make, but can be expensive. In addition to passing a booster seat law in 2014, Florida passed a companion bill that allows parents to purchase car seats and booster seats free from state sales tax.¹⁷ Connecticut also exempts car seats from sales tax.¹⁸ This helps encourage parents to invest in potentially life-saving car seats. Safe Kids favors tax-free purchases of car seats and encourages other states to work towards similar legislation.¹⁹

Tougher Laws: In 2011, the American Academy of Pediatrics adopted a policy position that kids should be in booster seats until they reach 4 feet 9 inches tall and between 8 and 12 years old.²⁰ Some states have passed laws to approach that standard, including California, Georgia, Illinois, Maryland, New Jersey, Washington State and others.²¹ However, too many states do not reach far enough; even the recently passed Florida law is inadequate in requiring kids to ride in booster seats until only age 6. Safe Kids encourages states to press for stronger laws that require booster seat use until seat belts fit children properly.

Booster Seats and Seat Belts: How Tall Do Kids Need to Be?

Older kids are weighed and measured less often than babies, so check your child's growth a few times a year. **Generally, kids need to use a booster until they are about 4 feet 9 inches (57 inches) tall and weigh between 80 and 100 pounds.**

When your child is seated in the booster seat, make sure the lap and shoulder belts fit. The lap belt should fit low across the hips (not belly) and the shoulder belt across the shoulder (not neck.)

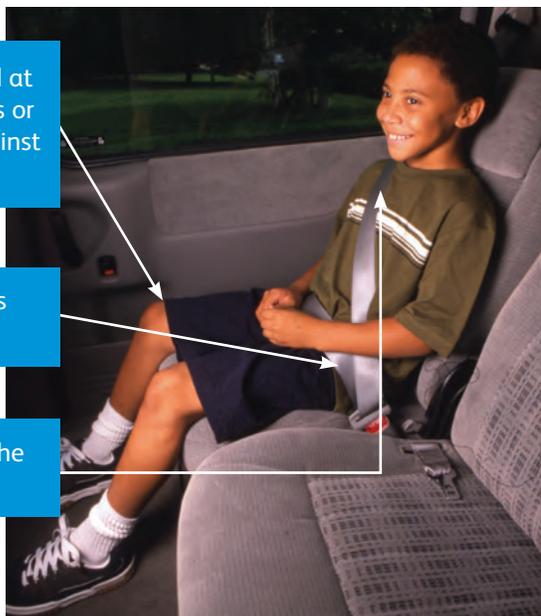
Use a booster seat with the vehicle lap and shoulder safety belts until your child passes the Safety Belt Fit Test.

Safety Belt Fit Test

The child's knees should bend at the edge of the seat when his or her back and bottom are against the vehicle seat back; and

The vehicle lap belt fits across the upper thighs; and

The shoulder belt fits across the shoulder and chest.



Children are usually between 8 and 12 years old when the seat belt fits them properly.

Where to Go for Hands-On Help

In our survey, 39% of parents say that they have had a safety expert check that their child's car seat or booster seat was installed properly. Each year Safe Kids coalitions hold more than 8,000 car seat inspection events in the U.S. You can find a list of your local events at safekids.org.



Methodology

The online survey was completed by adults with children ages 4 to 10 (n=1,000). A minimum of n=140 was set for each age of the child being discussed. The survey lasted 10 minutes and was fielded from July 31 to August 3, 2014, using the Survey Sampling International adult panel.

Most online samples are not projectable according to strict sampling theory which states that in order for a sample to be projectable to a population it must be a random sample of that population; that is, one in which all members of the population have a known and non-zero probability of selection. Therefore, in a strict sense, no estimate of theoretical sampling error can be calculated for most online samples. Having said that, online samples, if recruited, managed and selected correctly, can effectively reflect a known universe.

For practical purposes, the margin of error for the total sample size of this study (n=1,000) is 3.1% at a 95% confidence level. This means that if this study was repeated using the same parameters, 19 times out of 20 (or 95% of the time) we would expect to get a result within +/- 3.1% of the results we have here.

For the exploratory analysis of booster seat legislation's impact on motor vehicle fatality rates, a t-test was used to compare motor vehicle fatality rate among children ages 4 to 8 in states where the age requirement is less than 7 years old with those where the age requirement is 7 years old or older.

References

1. National Highway Traffic Safety Administration. Motor vehicle occupant fatalities, 2003-2012, ages 4 to 10. Available at <http://www.nhtsa.gov/FARS>. Accessed August 22, 2014.
2. Centers for Disease Control and Prevention. WISQARS, 10 Leading Causes of Death, United States, 2011. Available at http://www.cdc.gov/injury/wisqars/leading_causes_death.html. Accessed August 22, 2014.
3. Arbogast KB, Jermakian JS, Kallan MJ, Durbin DR. Effectiveness of belt positioning booster seats: an updated assessment. *Pediatrics*. 2009; 124(5):1281-6.
4. National Highway Traffic Safety Administration. Estimate of passenger vehicle occupants (ages 10 & younger) injured in motor vehicle traffic crashes, by age and restraint use. General Estimates System (GES) 2012. Generated July 23, 2014.
5. National Highway Traffic Safety Administration. The 2013 National Survey of the Use of Booster Seats. June 2014. DOT HS 812 037.
6. Committee on Injury, Violence, and Poison Prevention, Durbin DR. Child passenger safety. *Pediatrics*. 2011. 127(4):788-93.
7. Safe Kids Worldwide. Booster Seats. Available at http://www.safekids.org/safetytips/field_age/big-kids-5%25E2%2580%25939-years/field_risks/booster-seat. Accessed August 26, 2014.
8. Macy ML, Reed MP, Freed GL. Driver report of improper seat belt position among 4- to 9-year-old children. *Acad Pediatr*. 2011;11(6):487-92.
9. Governors Highway Safety Association. Child Passenger Safety Laws. August 2014. Available at http://www.ghsa.org/html/stateinfo/laws/childsafety_laws.html. Accessed August 13, 2014.

10. National Highway Traffic Safety Administration. Motor vehicle crash fatalities, 2012, ages 0 to 12. Available at <http://www.nhtsa.gov/FARS>. Accessed August 22, 2014.
11. U.S. Census Bureau, Population Division. Annual Estimates of the Resident Population by Single Year of Age and Sex for the United States, States, and Puerto Rico Commonwealth: April 1, 2010 to July 1, 2013. Released: 2014. Available at <http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml>. Accessed August 21, 2014.
12. Eichelberger AH, Chouinard AO, Jermakian JS. Effects of booster seat laws on injury risk among children in crashes. *Traffic Inj Prev*. 2012;13(6):631-9.
13. For example, the Texas "Click it or Ticket" program emphasizes both front and back seats, both seat belts and child car seats. "Click It or Ticket now includes backseat passengers." Press release. http://www.txdps.state.tx.us/director_staff/public_information/pr052410.pdf. Accessed August 27, 2014.
14. National Highway Traffic Safety Administration. National Seat Belt Enforcement Mobilization. May 19 through June 1, 2014. Available at <http://www.nhtsa.gov/PEAK>. Accessed August 26, 2014. A 2008 study analyzing how states attain high seat belt usage said the most important difference between high and low achieving states is enforcement, and "High-visibility seat belt law enforcement is critical." Hedlund, J, Gilbert SH, Ledingham K, Preusser D. How States Achieve High Seat Belt Use Rates. August 2008. DOT HS 810 962. Available at <http://www-nrd.nhtsa.dot.gov/Pubs/810962.pdf>. Accessed August 26, 2014.
15. National Highway Traffic Safety Association. "High Visibility Enforcement Implementation." Available at <http://www.nhtsa.gov/Driving+Safety/Enforcement+&+Justice+Services/HVE-implement>. Accessed August 27, 2014.
16. "Toward Zero Deaths: A National Strategy on Highway Safety." April 2014. Available at http://www.towardzerodeaths.org/dld/TZD_Strategy_4_30_2014.pdf. Accessed August 28, 2014.
17. HB 5601, <http://legiscan.com/FL/text/H5601/id/1020904/Florida-2014-H5601-Enrolled.pdf>.
18. "Exemptions from Sales and Use Taxes." State of Connecticut, Department of Revenue Services. Available at <http://www.ct.gov/drs/cwp/view.asp?a=1477&Q=269920&drsPNavCtr>. Accessed August 28, 2014.
19. A bill was introduced in New York State to provide a sales tax exemption for child restraint systems, New York AB 1574, January 19, 2013. Available at <http://legiscan.com/NY/text/A01574/id/682504>. Accessed August 26, 2014. Hawaii provides a \$25 tax credit for the purchase of child restraint systems.
20. American Academy of Pediatrics. "AAP Updates Recommendation on Car Seats." March 3, 2011. Available at <http://www.aap.org/en-us/about-the-aap/aap-press-room/Pages/AAP-Updates-Recommendation-on-Car-Seats.aspx>. Accessed August 26, 2014.
21. Safe Kids Worldwide. Child Safety State Law Tracker. Available at <http://www.safekids.org/statelaws>. Accessed August 26, 2014.

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