

Executive Summary

In the summer of 2009, the Minnesota Passenger Safety Statute 169.685 was upgraded to include booster-age children. This revised legislation requires all children age 7 and under to ride in a federally approved car seat or booster seat, unless the child is 4'9" or taller. Law applies to all motor vehicles originally equipped with factory-installed seat belts and all seating positions. On July 1, 2009, officers can ticket drivers in violation of the law but may be waived if the violator shows proof of obtaining a safety seat within 14 days. The law applies to both residents and non-residents of Minnesota.

In 2014, a combination of 23 Child Passenger Safety Instructors and Child Passenger Safety Technicians observed booster seat use of children 4–7 years of age. Observations took place in 32 Counties where 85 percent of the 4–7 year olds were estimated to be living. The observations occurred from July 12 through July 27. There were a total of 216 observation sites that consisted of fast food establishments (56), shopping areas (64), parks and community centers (51), libraries (37), and changes that were made to the nearest traffic control signal by the site (8). The observers recorded 4-7 year old child passengers that were: 1) correctly restrained in a booster seat, 2) incorrectly restrained in a booster seat, and 3) not restrained in a booster seat. The observers also recorded the type of vehicle, driver characteristics such as seat belt use, age group, gender, and ethnicity. Site observations were scheduled for 90 minutes broken down by a 40 minute observation period, a ten minute break, followed by another 40 minute observation period.

There were 2,348 children 4-7 years of age who were observed with 72.9 percent correctly restrained in a booster seat. This was an increase of 8.8 percent from the first booster seat observation study that was conducted in 2011. The percent of children unrestrained decreased from 7.1 percent in 2011 to 6.8 percent in 2014.

If the driver of the vehicle was observed to be properly wearing a seat belt, 74.3 percent of the 4-7 year olds were correctly restrained in a booster seat. This increased by just over 7 percent since 2011. When comparing booster seat use and vehicle type, 4-7 year olds were found to be correctly restrained in a SUV (77.4%), followed by a van/minivan (74%), passenger car (67.4%), and pickup (63.1%).

There appeared to be little difference in the age group of the driver 16-29, 30-59, and 60+ and their 4-7 year old passengers being correctly restrained in a booster seat at 70.8 percent, 73.4 percent, and 71.8 percent respectively. Children 4-7 years of age were observed to be correctly restrained at a higher rate if the driver of the vehicle was female (74%) than if the driver was male, (71.7%). In 2011, 4-7 year olds were found to be correctly restrained (65.3%) when the driver was female and (62.3%) when the driver was male.

Just over 86 percent of the drivers observed were Caucasian with 75.7 percent of the children 4-7 correctly restrained in a booster seat. The number of drivers that were African American, Asian or Pacific Islander, Hispanic, or Native American was small which makes the reporting of the results less precise, but there was an increase in the percentage of children that were correctly restrained across these ethnic backgrounds from 2011 to 2014.

When comparing the number and type of injuries for five years leading up to the Booster Seat Law to the five years following the law, data from Minnesota Crash Records Database supports the legislation. Booster seat use increased post July 1, 2009 in moderate and minor injuries, and higher numbers of children 4-7 that were not injured. In 2013 there were 13 children 4-7 years of age that were killed or severely injured. Eight of these children were known to not be using safety equipment and four were unknown.

Child Passenger Restraint Status

Restraint Status	Number	Percent
Correct	1,712	72.9
Incorrect	477	20.3
Restrained (Correct + Incorrect)	2,189	93.2
Not Restrained	159	6.8
Total	2,348	100

Child Passenger Restraint Status and Driver Wearing Their Seat Belt

Seat Belt Status	Correct	Incorrect	Not Restrained	Total	Percent Correctly Restrained
Belted	1,697	462	125	2,284	74.3
Not Belted	19	15	30	64	29.7
Total	1,716	477	155	2,348	73.1

Child Passenger Restraint Status and Vehicle Type

Vehicle Type	Correct	Incorrect	Not Restrained	Total	Percent Correctly Restrained
Passenger Car	607	218	75	900	67.4
Pickup Truck	94	34	21	149	63.1
SUV	502	120	27	649	77.4
Van/Minivan	453	123	36	612	74.0
Total	1,656	495	159	2,310	71.7

Child Passenger Restraint Status and Age of Driver

Age of Driver	Correct	Incorrect	Not Restrained	Total	Percent Correctly Restrained
16-29	473	148	47	668	70.8
30-59	1,142	309	105	1,556	73.4
60+	61	21	3	85	71.8
Total	1,676	478	155	2,309	72.6

Child Passenger Restraint Status and Gender of Driver

Gender of Driver	Correct	Incorrect	Not Restrained	Total	Percent Correctly Restrained
Female	1,077	297	81	1,455	74.0
Male	628	175	73	876	71.7
Total	1,705	472	154	2,331	73.1

Child Passenger Restraint Status and Ethnicity of Driver

Ethnicity of Driver	Correct	Incorrect	Not Restrained	Total	Percent Correctly Restrained
African American	79	20	31	130	60.8
Asian or Pacific Islander	55	13	18	86	64.0
Caucasian	1,526	401	90	2,017	75.7
Hispanic	51	20	16	87	58.6
Native American	7	5	4	16	43.8
Total	1,718	459	159	2,336	73.5

Fatality Comparison of Five Years Pre-Booster Seat Law to Five Years Post-Booster Seat Law

Time Period	Used	Percent	Not-Used	Percent	Unknown	Percent	Total
5-Year Pre-Booster	1	7.1	11	78.6	2	14.3	14
5-Year Post-Booster	4	36.4	4	36.4	3	27.3	11
10-Year Totals	5	20.0	15	60.0	5	20.0	25

Severe Injury Comparison of Five Years Pre-Booster Seat Law to Five Years Post-Booster Seat Law

Time Period	Used	Percent	Not-Used	Percent	Unknown	Percent	Total
5-Year Pre-Booster	16	23.2	43	62.3	10	14.5	69
5-Year Post-Booster	8	22.2	21	58.3	7	19.4	36
10-Year Totals	24	22.9	64	61.0	17	16.2	105

Moderate Injury Comparison of Five Years Pre-Booster Seat Law to Five Years Post-Booster Seat Law

Time Period	Used	Percent	Not-Used	Percent	Unknown	Percent	Total
5-Year Pre-Booster	95	19.9	317	66.5	65	13.6	477
5-Year Post-Booster	153	47.2	156	48.1	15	4.6	324
10-Year Totals	248	31.0	473	59.1	80	10.0	801

Minor Injury Comparison of Five Years Pre-Booster Seat Law to Five Years Post-Booster Seat Law

Time Period	Used	Percent	Not-Used	Percent	Unknown	Percent	Total
5-Year Pre-Booster	600	33.5	1,036	57.8	155	8.7	1,791
5-Year Post-Booster	914	53.1	656	38.1	152	8.8	1,722
10-Year Totals	1,514	43.1	1,692	48.2	307	8.7	3,513

Non-Injury Comparison of Five Years Pre-Booster Seat Law to Five Years Post-Booster Seat Law

Time Period	Used	Percent	Not-Used	Percent	Unknown	Percent	Total
5-Year Pre-Booster	3,878	41.4	4,621	49.3	874	9.3	9,373
5-Year Post-Booster	5,863	61.5	2,873	30.2	791	8.3	9,527
10-Year Totals	9,741	51.5	7,494	39.7	1,665	8.8	18,900