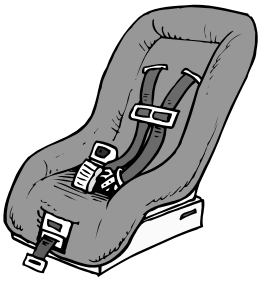
Occupant Protection



2009

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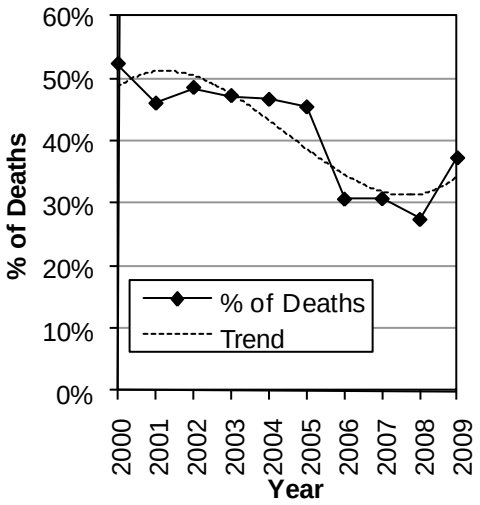
Trends

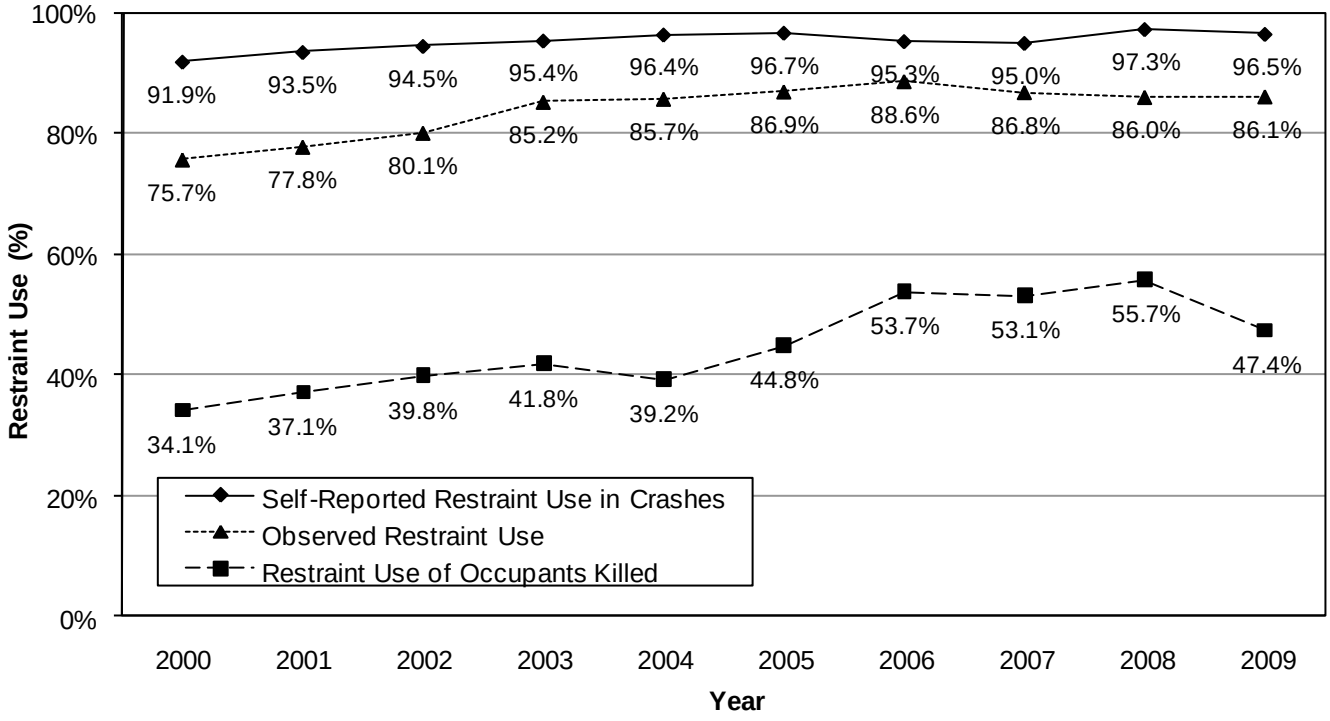
Unrestrained Occupant Deaths (Utah 2000-2009)

Unrestrained Occupant Deaths			
	Deaths		
	All	Unrestrained Occupants	
Year	#	#	%
2000	373	195	52.3%
2001	291	134	46.0%
2002	328	159	48.5%
2003	309	146	47.2%
2004	296	138	46.6%
2005	282	128	45.4%
2006	287	88	30.7%
2007	299	92	30.8%
2008	276	78	28.3%
2009	244	91	37.3%
Total	**2,985**	**1,249**	**41.8%**



- Over the past 10 years, 41.8% of deaths have been to unrestrained occupants.
- On average, 125 people die a year in Utah who are unrestrained.
- The percentage of deaths to unrestrained occupants has shown a decreasing trend over the last 10 years.

Restraint Use of Occupants In Crashes and Observational Studies (Utah 2000-2009)



- Historically, there have been differences between self-reported restraint use of people in crashes and seat belt use observed in observational studies. The difference may be due to over-reporting by the people in crashes.
- The 10-year trend shows an increase of restraint use in crashes, observational studies, and occupants killed.
- In 2009, the observational seat belt use increased to 86.1% from 86.0% in 2008. The year 2006 had the highest observed seat belt use ever in Utah at 88.6%.
- The 2009 self-reported restraint use of people in crashes decreased to 96.5% from 97.3% in 2008.
- Restraint use among occupants killed decreased from 55.7% in 2008 to 47.4% in 2009.

Counties

Restraint Use by County (Utah 2009)

Persons												
	Non-Injured			Injured			Killed			Total		
	Unres	Restrained		Unres	Restrained		Unres	Restrained		Unrestrained	Restrained	
County	#	#	%	#	#	%	#	#	%	#	#	%
Davis	129	8,663	98.5%	78	1,800	95.8%	3	3	50.0%	**210**	**10,466**	**98.0%**
Rich	0	102	100.0%	2	13	86.7%	1	0	0.0%	**3**	**115**	**97.5%**
Cache	85	3,842	97.8%	34	604	94.7%	5	4	44.4%	**124**	**4,450**	**97.3%**
Utah	300	13,612	97.8%	180	3,045	94.4%	6	8	57.1%	**486**	**16,665**	**97.2%**
Salt Lake	1,032	41,455	97.6%	407	7,215	94.7%	17	8	32.0%	**1,456**	**48,678**	**97.1%**
Wasatch	16	725	97.8%	8	109	93.2%	1	0	0.0%	**25**	**834**	**97.1%**
Morgan	5	152	96.8%	0	38	100.0%	1	0	0.0%	**6**	**190**	**96.9%**
Washington	105	3,524	97.1%	68	778	92.0%	4	3	42.9%	**177**	**4,305**	**96.1%**
Box Elder	29	1,629	98.3%	55	381	87.4%	7	1	12.5%	**91**	**2,011**	**95.7%**
Summit	53	1,535	96.7%	25	218	89.7%	2	5	71.4%	**80**	**1,758**	**95.6%**
Millard	27	589	95.6%	5	116	95.9%	1	3	75.0%	**33**	**708**	**95.5%**
Weber	373	7,706	95.4%	104	1,520	93.6%	3	10	76.9%	**480**	**9,236**	**95.1%**
Tooele	34	1,067	96.9%	34	270	88.8%	5	5	50.0%	**73**	**1,342**	**94.8%**
Carbon	30	733	96.1%	18	120	87.0%	0	3	100.0%	**48**	**856**	**94.7%**
Garfield	7	139	95.2%	3	36	92.3%	1	0	0.0%	**11**	**175**	**94.1%**
Iron	65	1,259	95.1%	33	307	90.3%	3	7	70.0%	**101**	**1,573**	**94.0%**
Beaver	18	505	96.6%	19	90	82.6%	3	3	50.0%	**40**	**598**	**93.7%**
Emery	13	233	94.7%	4	47	92.2%	3	2	40.0%	**20**	**282**	**93.4%**
Duchesne	27	442	94.2%	8	84	91.3%	4	1	20.0%	**39**	**527**	**93.1%**
San Juan	12	245	95.3%	10	65	86.7%	3	1	25.0%	**25**	**311**	**92.6%**
Kane	13	253	95.1%	11	52	82.5%	1	3	75.0%	**25**	**308**	**92.5%**
Daggett	4	43	91.5%	0	5	100.0%	0	0	0.0%	**4**	**48**	**92.3%**
Juab	24	523	95.6%	24	118	83.1%	6	2	25.0%	**54**	**643**	**92.3%**
Uintah	50	854	94.5%	40	201	83.4%	4	1	20.0%	**94**	**1,056**	**91.8%**
Grand	13	185	93.4%	7	66	90.4%	3	3	50.0%	**23**	**254**	**91.7%**
Piute	0	21	100.0%	3	7	70.0%	0	0	0.0%	**3**	**28**	**90.3%**
Sevier	69	634	90.2%	29	150	83.8%	2	2	50.0%	**100**	**786**	**88.7%**
Sanpete	26	240	90.2%	12	50	80.6%	1	3	75.0%	**39**	**293**	**88.3%**
Wayne	10	60	85.7%	3	15	83.3%	1	1	50.0%	**14**	**76**	**84.4%**
Statewide	**2,569**	**90,970**	**97.3%**	**1,224**	**17,520**	**93.5%**	**91**	**82**	**47.4%**	**3,884**	**108,572**	**96.5%**

- Restraint use is reported for occupants in a passenger car, light truck, van, SUV, or large truck. Occupants are considered “Restrained” if they were reported as using a shoulder/lap belt, lap belt, or a child safety seat at the scene of the crash.
- Restraint use is self-reported by crash occupants in the majority of crashes and may be inflated due to over-reporting by the people in crashes.
- The officer determines restraint use in the event of a fatal or severe injury crash.
- The majority of persons in crashes reported being restrained (96.5%).
- Wayne (84.4%), Sanpete (88.3%), and Sevier (88.7%) counties had the lowest percentage of occupants that were restrained.
- 47.4% of vehicle occupants killed in crashes in Utah were restrained.
- Occupants in rural crashes were 1.7 times more likely to be unrestrained than occupants in urban crashes.

Vehicle Occupants

Restraint Use by Injury Severity (Utah 2009)

Persons								
	Non-Injured		Injured		Killed		Total	
Restraint Use	#	%	#	%	#	%	#	%
Restrained	90,970	97.3%	17,520	93.5%	82	47.4%	**108,572**	**96.5%**
Unrestrained	2,569	2.7%	1,224	6.5%	91	52.6%	**3,884**	**3.5%**
Total	**93,539**	**100.0%**	**18,744**	**100.0%**	**173**	**100.0%**	**112,456**	**100.0%**

- Over 96% of persons who survived a crash reported being restrained.
- In contrast, less than half (47.4%) of the persons killed in a crash were restrained.
- Unrestrained crash occupants were 32 times more likely to be killed than restrained crash occupants.

Restraint Use by Gender of Crash Occupants (Utah 2009)

Persons												
	Non-Injured			Injured			Killed			Total		
	Unres	Restrained		Unres	Restrained		Unres	Restrained		Unrestrained	Restrained	
Gender	#	#	%	#	#	%	#	#	%	#	#	%
Female	1,060	40,113	97.4%	596	10,095	94.4%	29	35	54.7%	**1,685**	**50,243**	**96.8%**
Male	1,504	50,638	97.1%	627	7,406	92.2%	62	47	43.1%	**2,193**	**58,091**	**96.4%**
Unknown	5	219	97.8%	1	19	95.0%	0	0	n/a	**6**	**238**	**97.5%**
Total	**2,569**	**90,970**	**97.3%**	**1,224**	**17,520**	**93.5%**	**91**	**82**	**47.4%**	**3,884**	**108,572**	**96.5%**

- Overall, restraint use of female (96.8%) crash occupants was slightly higher than males (96.4%).
- For persons killed, female crash occupants had higher restraint use (54.7%) than males (43.1%).

Restraint Use by Occupant Placement (Utah 2009)

Persons												
	Non-Injured			Injured			Killed			Total		
	Unres	Restrained		Unres	Restrained		Unres	Restrained		Unrestrained	Restrained	
Occupant Placement	#	#	%	#	#	%	#	#	%	#	#	%
Driver	1,092	65,181	98.4%	638	12,127	95.0%	57	51	47.2%	**1,787**	**77,359**	**97.7%**
Front Seat	903	13,059	93.5%	336	3,346	90.9%	13	22	62.9%	**1,252**	**16,427**	**92.9%**
Back Seat	433	12,467	96.6%	202	1,986	90.8%	14	8	36.4%	**649**	**14,461**	**95.7%**
Other/Unknown	141	263	65.1%	48	61	56.0%	7	1	12.5%	**196**	**325**	**62.4%**
Total	**2,569**	**90,970**	**97.3%**	**1,224**	**17,520**	**93.5%**	**91**	**82**	**47.4%**	**3,884**	**108,572**	**96.5%**

- Among all occupants, drivers reported the highest restraint use (97.7%).

Restraint Use by Vehicle Type (Utah 2009)

Persons												
	Non-Injured			Injured			Killed			Total		
	Unres	Restrained		Unres	Restrained		Unres	Restrained		Unrestrained	Restrained	
Vehicle Type	#	#	%	#	#	%	#	#	%	#	#	%
Passenger Car	1,134	45,738	97.6%	599	10,294	94.5%	35	43	55.1%	**1,768**	**56,075**	**96.9%**
Van	196	7,118	97.3%	79	1,276	94.2%	5	9	64.3%	**280**	**8,403**	**96.8%**
SUV	498	20,117	97.6%	283	3,653	92.8%	27	17	38.6%	**808**	**23,787**	**96.7%**
Pickup Truck	556	15,233	96.5%	238	2,131	90.0%	18	12	40.0%	**812**	**17,376**	**95.5%**
Semi/Large Truck	185	2,764	93.7%	25	166	86.9%	6	1	14.3%	**216**	**2,931**	**93.1%**
Total	**2,569**	**90,970**	**97.3%**	**1,224**	**17,520**	**93.5%**	**91**	**82**	**47.4%**	**3,884**	**108,572**	**96.5%**

- Occupants in semi/large truck (93.1%) and pickup truck (95.5%) were the least likely to be restrained.

Vehicle Occupants

Restraint Use by Ejection (Utah 2009)

Persons												
	Non-Injured			Injured			Killed			Total		
	Unres	Restrained		Unres	Restrained		Unres	Restrained		Unrestrained	Restrained	
Ejection Status	#	#	%	#	#	%	#	#	%	#	#	%
Not Ejected	2,569	90,970	97.3%	1,073	17,439	94.2%	31	74	70.5%	**3,673**	**108,483**	**96.7%**
Partially Ejected	0	0	n/a	18	30	62.5%	13	8	38.1%	**31**	**38**	**55.1%**
Fully Ejected	0	0	n/a	133	51	27.7%	47	0	0.0%	**180**	**51**	**22.1%**
Total	**2,569**	**90,970**	**97.3%**	**1,224**	**17,520**	**93.5%**	**91**	**82**	**47.4%**	**3,884**	**108,572**	**96.5%**

- There is an inverse relationship between ejection from a motor vehicle and restraint use.
- The majority (96.7%) of crash occupants not ejected from a motor vehicle were restrained compared to only 22.1% of crash occupants fully ejected from a motor vehicle.
- Unrestrained occupants were 70 times more likely to be fully ejected from a motor vehicle compared to restrained occupants.
- Ejection from the vehicle is one of the most harmful events that can happen to a person in a crash. Seat belts are effective in preventing total ejections.

Restraint Use by Age of Crash Occupants (Utah 2009)

Persons												
	Non-Injured			Injured			Killed			Total		
	Unres	Restrained		Unres	Restrained		Unres	Restrained		Unrestrained	Restrained	
Age	#	#	%	#	#	%	#	#	%	#	#	%
0-4	58	4,392	98.7%	12	452	97.4%	2	2	50.0%	**72**	**4,846**	**98.5%**
5-9	67	3,195	97.9%	33	538	94.2%	2	2	50.0%	**102**	**3,735**	**97.3%**
10-14	72	2,727	97.4%	57	537	90.4%	5	2	28.6%	**134**	**3,266**	**96.1%**
15-19	554	13,862	96.2%	267	2,481	90.3%	14	12	46.2%	**835**	**16,355**	**95.1%**
20-24	402	13,093	97.0%	236	2,431	91.2%	15	12	44.4%	**653**	**15,536**	**96.0%**
25-29	274	10,441	97.4%	145	2,087	93.5%	4	3	42.9%	**423**	**12,531**	**96.7%**
30-34	251	8,185	97.0%	102	1,614	94.1%	8	5	38.5%	**361**	**9,804**	**96.4%**
35-39	171	6,667	97.5%	73	1,285	94.6%	3	4	57.1%	**247**	**7,956**	**97.0%**
40-44	127	5,310	97.7%	58	1,119	95.1%	9	6	40.0%	**194**	**6,435**	**97.1%**
45-49	137	5,101	97.4%	53	1,091	95.4%	8	5	38.5%	**198**	**6,197**	**96.9%**
50-54	106	4,632	97.8%	47	1,017	95.6%	5	5	50.0%	**158**	**5,654**	**97.3%**
55-59	95	3,703	97.5%	35	785	95.7%	4	5	55.6%	**134**	**4,493**	**97.1%**
60-64	71	2,664	97.4%	34	579	94.5%	3	5	62.5%	**108**	**3,248**	**96.8%**
65-69	28	1,891	98.5%	19	411	95.6%	3	3	50.0%	**50**	**2,305**	**97.9%**
70-74	34	1,252	97.4%	16	288	94.7%	1	1	50.0%	**51**	**1,541**	**96.8%**
75-79	29	895	96.9%	8	236	96.7%	2	4	66.7%	**39**	**1,135**	**96.7%**
80-84	20	651	97.0%	9	182	95.3%	2	5	71.4%	**31**	**838**	**96.4%**
85+	22	414	95.0%	7	124	94.7%	1	1	50.0%	**30**	**539**	**94.7%**
Unknown	51	1,895	97.4%	13	263	95.3%	0	0	n/a	**64**	**2,158**	**97.1%**
Total	**2,569**	**90,970**	**97.3%**	**1,224**	**17,520**	**93.5%**	**91**	**82**	**47.4%**	**3,884**	**108,572**	**96.5%**

- Overall, crash occupants aged 85+ years (94.7%), 15-19 years (95.1%), 20-24 years (96.0%), and 10-14 years (96.1%) had the lowest percentages of being restrained.
- For persons killed, crash occupants aged 10-14 years (28.6%), 30-34 years (38.5%), 45-49 years (38.5%), and 40-44 years (40.0%) had the lowest percentages of being restrained.

Children and Restraint Use

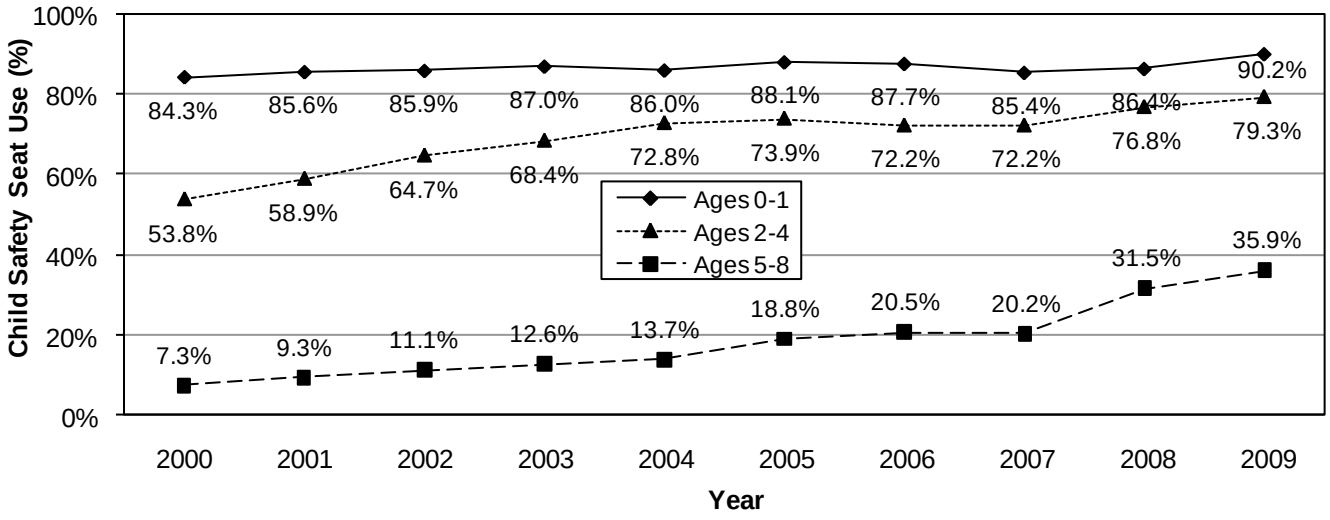
Restraint Use for Children Age 0 to 8 Years (Utah 2009)

Child Occupants								
	Ages 0-1		Ages 2-4		Ages 5-8		Total	
Restraint Use	#	%	#	%	#	%	#	%
Child Safety Seat	1,791	90.2%	2,326	79.3%	1,122	35.9%	**5,239**	**65.1%**
Seat Belt Only	170	8.6%	558	19.0%	1,929	61.7%	**2,657**	**33.0%**
Unrestrained	24	1.2%	48	1.6%	77	2.5%	**149**	**1.9%**
Total	**1,985**	**100.0%**	**2,932**	**100.0%**	**3,128**	**100.0%**	**8,045**	**100.0%**

- The older the child the less likely they were using a child safety seat.
- The drastic decrease in child safety seat use for children aged 5-8 years is concerning. This indicates that children are moving to adult-sized seat belts too early.

Child Safety Seat Use by Children Age 0 to 8 Years (Utah 2000-2009)

Child Occupants												
	Ages 0-1			Ages 2-4			Ages 5-8			Total		
	No CSS	Child Safety Seat		No CSS	Child Safety Seat		No CSS	Child Safety Seat		No CSS	Child Safety Seat	
Year	#	#	%	#	#	%	#	#	%	#	#	%
2000	317	1,703	84.3%	1,520	1,768	53.8%	3,013	237	7.3%	**4,850**	**3,708**	**43.3%**
2001	283	1,678	85.6%	1,378	1,971	58.9%	2,751	281	9.3%	**4,412**	**3,930**	**47.1%**
2002	279	1,696	85.9%	1,229	2,249	64.7%	2,953	368	11.1%	**4,461**	**4,313**	**49.2%**
2003	247	1,652	87.0%	1,070	2,320	68.4%	3,371	484	12.6%	**4,688**	**4,456**	**48.7%**
2004	275	1,688	86.0%	952	2,542	72.8%	3,577	567	13.7%	**4,804**	**4,797**	**50.0%**
2005	227	1,681	88.1%	960	2,721	73.9%	2,969	688	18.8%	**4,156**	**5,090**	**55.1%**
2006	267	1,897	87.7%	881	2,288	72.2%	2,654	683	20.5%	**3,802**	**4,868**	**56.1%**
2007	367	2,151	85.4%	961	2,495	72.2%	2,864	727	20.2%	**4,192**	**5,373**	**56.2%**
2008	286	1,822	86.4%	694	2,301	76.8%	2,125	978	31.5%	**3,105**	**5,101**	**62.2%**
2009	194	1,791	90.2%	606	2,326	79.3%	2,006	1,122	35.9%	**2,806**	**5,239**	**65.1%**
Total	**2,742**	**17,759**	**86.6%**	**10,251**	**22,981**	**69.2%**	**28,283**	**6,135**	**17.8%**	**41,276**	**46,875**	**53.2%**



- The ten year trend shows an increase of child safety seat (CSS) use in crashes for ages 0-8 years.
- Ages 5-8 years showed the biggest gain in CSS use, increasing from 7.3% in 2000 to 35.9% in 2009.

2009 Utah Crash Facts

Utah Department of Public Safety
Highway Safety Office

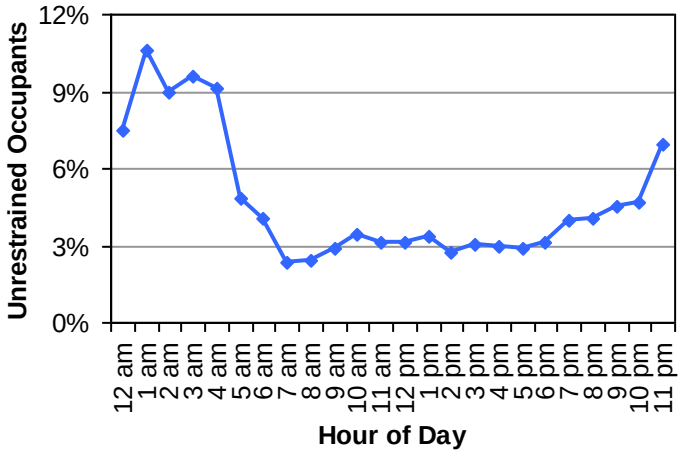
Wearing a seat belt is one of the best ways to decrease injuries and deaths in motor vehicle crashes.

Occupant Protection

Did you know in 2009:

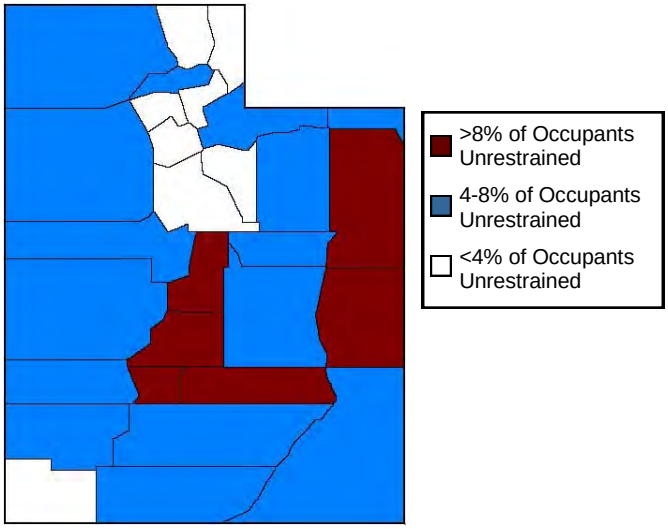
- Unrestrained crash occupants were 32 times more likely to die in a crash than restrained occupants.
- An estimated 109 lives were saved because of restraint use. (National Highway Traffic Safety Administration)
- While overall traffic deaths decreased the number of unrestrained occupant deaths increased 17%.

Unrestrained Crash Occupants by Hour (Utah 2009)



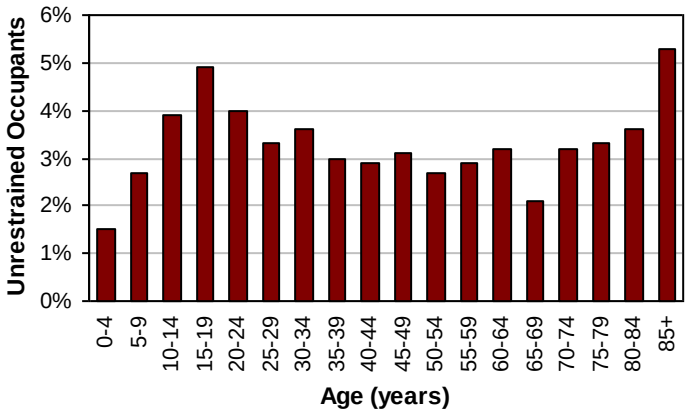
- 11:00 p.m. to 4:59 a.m. had the highest percentage of unrestrained crash occupants.

Unrestrained Crash Occupants by County (Utah 2009)



- Occupants in rural crashes were 1.7 times more likely to be unrestrained than urban occupants.

Unrestrained Crash Occupants by Age (Utah 2009)



- The highest percentage of unrestrained crash occupants were 85+ and 10-24 years.

Restraint Use by Injury Severity (Utah 2009)

- Over 96% of persons who survived a crash were restrained compared to less than half (47%) of the persons killed.

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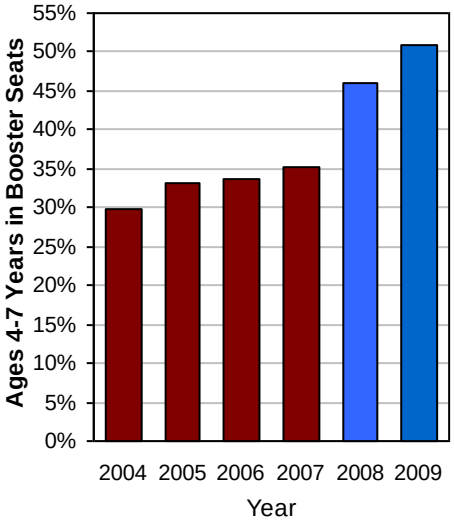
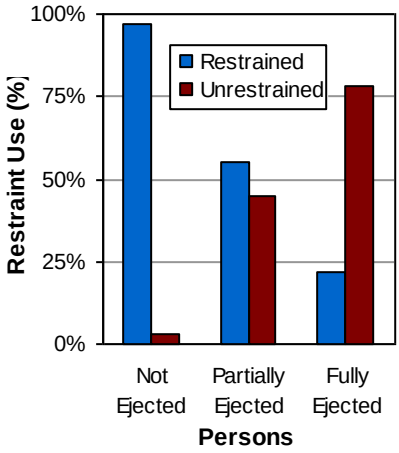
Occupant Protection

Effectiveness of Booster Seat Law (Utah 2004-2009)



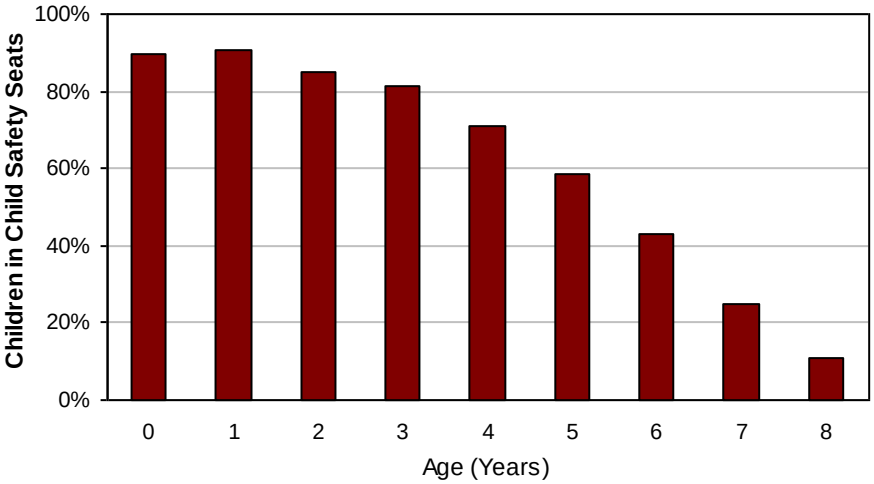
- In 2008, a law was passed increasing the age of child safety seat use from up to age 4 years to up to age 8 years.
- In 2009, booster seat use among ages 4-7 years in crashes increased to 51%.
- Booster seat use increased 45% since passage of the law.

Ejection and Restraint Use (Utah 2009)



- 78% of crash occupants fully ejected from a motor vehicle were unrestrained.
- Unrestrained occupants were 70 times more likely to be fully ejected than restrained occupants.

Percent of Children Aged 0-8 Years in Crashes Using Child Safety Seats (Utah 2009)



- The older the child the less likely they were using a child safety seat.
- While 90% of children 0-1 years in a crash were in a child safety seat, only 71% of 4-year-olds, 43% of 6-year-olds, and 11% of 8-year-olds were in a child safety seat.
- The decrease in child safety seat use for children aged 4-8 years is concerning and indicates that children are moving to adult-sized seat belts too early.

Child Safety Seat Recommendations:

- Infants should be placed in a rear-facing safety seat until they are at least 20 pounds and 1 year of age.
- Never place a rear-facing child safety seat in the front seat of a vehicle with a passenger side air bag.
- Children at least 1 year of age weighing 20-40 pounds should ride in forward facing child safety seats.
- Older children (approximately 4-8 years of age) should ride in belt-positioning booster seats until they are 4'9" tall and the seat belt fits properly. Booster seats help position an adult-size seat belt for a safer fit on children.
- The safest place for any child aged 12 and under is in the back seat of the vehicle.

Seat Belt Recommendations:

- Always use both the lap and shoulder belt. When worn properly, the shoulder belt should fit across the collar bone and the lap belt should fit low over the hips.
- Never place the shoulder strap under the arm or behind the back.

Safety Restraint Laws:

- Utah law requires all motor vehicle occupants to wear a seat belt. This is a secondary enforcement law for drivers and passengers age 19 years and older. This means an adult may be issued a citation and a $45 fine only when the police officer has stopped the vehicle for another reason.
- The law is a primary enforcement law for drivers and passengers under age 19 years.
  - ⇒ Children age 7 years and under must ride in an approved child safety seat.
  - ⇒ Children aged 8 to 18 years must ride in an appropriate child restraint or seat belt.
  - ⇒ There are a few exemptions to the law. Contact the Highway Safety Office for more information.

This primary enforcement law means a person may be stopped and issued a citation for simply not buckling up.