



Traffic Safety Facts 2003

Occupant Protection



Restraint Use

In 2003, NHTSA conducted the National Occupant Protection Use Survey (NOPUS). The overall observed shoulder belt use rate was 79 percent in 2003, compared to 75 percent observed in 2002, 73 percent in 2001, 71 percent in 2000, and 67 percent in 1999. In 1994, the overall observed shoulder belt use rate was 58 percent.

Table 1 shows safety belt use rates in the states, the District of Columbia, and Puerto Rico. The results were obtained by observing traffic on roads at selected observation sites. Where rates are missing from the table, states did not submit rates to NHTSA. For more information on state safety belt use rates, see D. Glassbrenner, *Safety Belt Use in 2003 – Use Rates in the States and Territories*, NHTSA Technical Report, DOT HS 809 713 (March 2004).



Table 1. Safety Belt Use Rates by State, 2002 and 2003

State	2002 Use Rate (Percent)	2003 Use Rate (Percent)	State	2002 Use Rate (Percent)	2003 Use Rate (Percent)
Alabama	79	77	Montana	78	80
Alaska	66	79	Nebraska	70	76
Arizona	74	86	Nevada	75	79
Arkansas	64	63	New Hampshire*	NA	50*
California	91	91	New Jersey	81	81
Colorado	73	78	New Mexico	88	87
Connecticut	78	78	New York	83	85
Delaware	71	75	North Carolina	84	86
District of Columbia	85	85	North Dakota	63	64
Florida	75	73	Ohio	70	75
Georgia	77	85	Oklahoma	70	77
Hawaii	90	92	Oregon	88	90
Idaho	63	72	Pennsylvania	76	79
Illinois	74	80	Rhode Island	71	74
Indiana	72	82	South Carolina	66	73
Iowa	82	87	South Dakota	64	70
Kansas	61	64	Tennessee	67	69
Kentucky	62	66	Texas	81	84
Louisiana	69	74	Utah	80	85
Maine	NA	NA	Vermont	85	82
Maryland	86	88	Virginia	70	75
Massachusetts	51	62	Washington	93	95
Michigan	83	85	West Virginia	72	74
Minnesota	NA	79	Wisconsin	66	70
Mississippi	62	62	Wyoming	67	NA
Missouri	69	73	Puerto Rico	91	87

NA = not available.

Note: Rates in states with primary belt enforcement laws are shown in bold type. Delaware had a secondary law at the time its 2003 use rate of 75 percent was obtained. The primary law in Illinois was in effect when its 2003 use rate of 80 percent was obtained.

*NHTSA and the New Hampshire Safety Agency funded an observational survey of belt use in New Hampshire in 2003. The use rate from this survey was 49.6 percent.

Source: State safety belt surveys conducted in accordance with Section 157 of Title 23, U.S. Code.

Occupant Fatalities by Age and Restraint Use

In 2003, 31,904 occupants of passenger vehicles (cars, light trucks, vans, and utility vehicles) were killed in motor vehicle traffic crashes, 75 percent of the 42,643 traffic fatalities reported for the year.

Of the 31,904 occupant fatalities in 2003, restraint use was unknown for 2,523 (8 percent). Of the 29,381 occupant fatalities for which restraint use was known, an estimated 16,594 (56 percent) were unrestrained. Of the 631 occupant fatalities 13 to 15 years old for which restraint use was known, 447 (71 percent) were unrestrained — the highest percentage for any age group. Of the 3,259 occupant fatalities 21 to 24 years old for which restraint use was known, 2,149 (66 percent) were unrestrained, which was the second highest percentage for any age group.

In 2003, there were 382 passenger vehicle occupant fatalities among children under 4 years of age. Of the 363 fatalities in this age group for which restraint use was known, an estimated 123 (34 percent) were unrestrained. Of the 310 fatalities among children 4 to 7 years old for which restraint use was known, an estimated 153 (49 percent) were unrestrained.

“In 2003, 71 percent of the passenger vehicle occupants 13 to 15 years old killed in traffic crashes were not using restraints — the highest percentage for any age group.”

Table 2. Passenger Vehicle Occupants Killed, by Age and Restraint Use, 2003

Age (Years)	Restraint Used		Restraint Not Used		Restraint Use Unknown		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
0-3	240	63	123	32	19	5	382	100
4-7	157	47	153	46	21	6	331	100
8-12	154	39	216	54	27	7	397	100
13-15	184	27	447	65	53	8	684	100
16-20	1,774	34	3,006	57	460	9	5,240	100
21-24	1,110	31	2,149	61	280	8	3,539	100
25-34	1,607	32	2,969	60	406	8	4,982	100
35-44	1,553	34	2,638	58	371	8	4,562	100
45-54	1,579	41	1,935	51	315	8	3,829	100
55-64	1,238	47	1,193	46	177	7	2,608	100
65-74	1,194	57	746	36	148	7	2,088	100
75+	1,977	62	991	31	238	7	3,206	100
Unknown	20	36	28	50	8	14	56	100
Total	12,787	40	16,594	52	2,523	8	31,904	100

Occupant Fatalities by Vehicle Type and Restraint Use

A total of 22,018 passenger vehicle drivers were killed in traffic crashes in 2003. Among the 20,353 driver fatalities for which restraint use was known, 70 percent of the drivers of pickup trucks killed were unrestrained, compared to 63 percent for sport utility vehicles, 53 percent for vans, and 49 percent for passenger cars. Similarly, among the 9,886 passenger fatalities for which restraint use was known, 76 percent of the passengers in pickup trucks were unrestrained, compared to 68 percent for sport utility vehicles, 63 percent for vans, and 53 percent for passenger cars.

“In 2003, 70 percent of the pickup truck drivers killed in traffic crashes were not using restraints.”

Table 3. Drivers and Passengers Killed, by Passenger Vehicle Type and Restraint Use, 2003

Type of Passenger Vehicle	Restraint Used		Restraint Not Used		Restraint Use Unknown		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Drivers Killed								
Passenger Cars	6,345	47	5,999	45	1,108	8	13,452	100
Pickup Trucks	1,289	28	2,986	65	294	6	4,569	100
Sport Utility Vehicles	986	35	1,651	59	175	6	2,812	100
Vans	508	44	574	49	84	7	1,166	100
Other Light Trucks	3	16	12	63	4	21	19	100
Total	9,131	41	11,222	51	1,665	8	22,018	100
Passengers Killed								
Passenger Cars	2,579	43	2,868	48	561	9	6,008	100
Pickup Trucks	294	22	952	71	89	7	1,335	100
Sport Utility Vehicles	482	29	1,032	63	120	7	1,634	100
Vans	298	33	515	57	87	10	900	100
Other Light Trucks	3	33	5	56	1	11	9	100
Total	3,656	37	5,372	54	858	9	9,886	100

Safety Belt Use and Benefits

Research has found that lap/shoulder safety belts, when used, reduce the risk of fatal injury to front-seat passenger car occupants by 45 percent and the risk of moderate-to-critical injury by 50 percent. For light truck occupants, safety belts reduce the risk of fatal injury by 60 percent and moderate-to-critical injury by 65 percent.

Ejection from the vehicle is one of the most injurious events that can happen to a person in a crash. In fatal crashes in 2003, 74 percent of passenger vehicle occupants who were totally ejected from the vehicle were killed. Safety belts are effective in preventing total ejections: only 1 percent of the occupants reported to have been using restraints were totally ejected, compared with 29 percent of the unrestrained occupants.

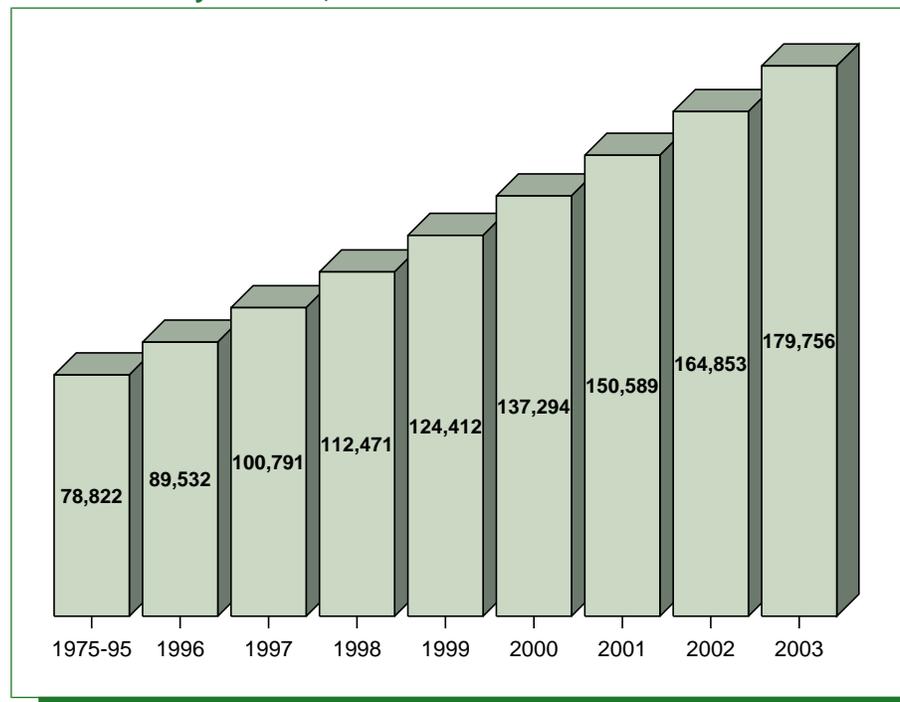
Lives Saved by Safety Belts

Among passenger vehicle occupants over 4 years old, safety belts saved an estimated 14,903 lives in 2003. If ALL passenger vehicle occupants over age 4 wore safety belts, 20,984 lives (that is, an additional 6,081) could have been saved in 2003.

In 2002, NHTSA refined its method of estimating lives saved by safety belts and air bags. The new method, including an explanation of the changes made, will be published in an upcoming NHTSA Technical Report.

“Safety belts, when used, reduce the risk of fatal injury to front-seat passenger car occupants by 45 percent.”

Figure 1. Cumulative Estimated Number of Lives Saved by Safety Belt Use, 1975-2003

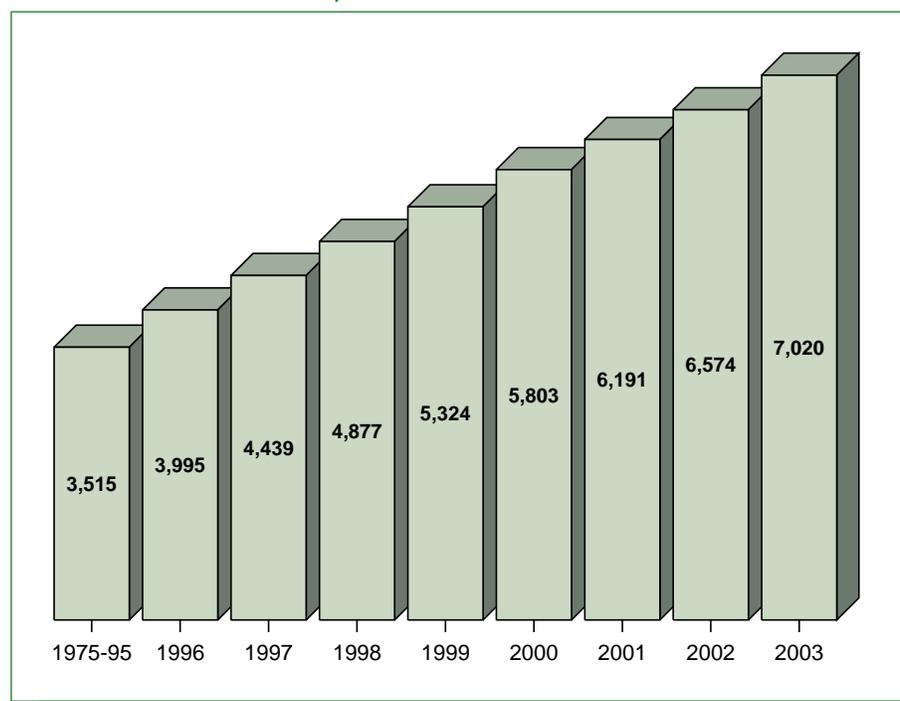


“From 1975 through 2003, an estimated 179,756 lives were saved by safety belts.”

Child Restraint Use and Benefits

Research on the effectiveness of child safety seats has found them to reduce fatal injury by 71 percent for infants (less than 1 year old) and by 54 percent for toddlers (1-4 years old) in passenger cars. For infants and toddlers in light trucks, the corresponding reductions are 58 percent and 59 percent, respectively.

Figure 2. Cumulative Estimated Number of Lives Saved by Child Restraints, 1975-2003



“From 1975 through 2003, an estimated 7,020 lives were saved by child restraints.”

Lives Saved by Child Safety Seats

Among children under 5 years old, an estimated 446 lives were saved in 2003 by child restraint use. Of these 446 lives saved, 401 were associated with the use of child safety seats and 45 with the use of adult belts.

At 100 percent child safety seat use for children under 5, an estimated 550 lives (that is, an additional 106) could have been saved in 2003.

Over the period 1975 through 2003, an estimated 7,020 lives were saved by child restraints.

Air Bag Use and Benefits

Air bags, combined with lap/shoulder safety belts, offer the most effective safety protection available today for passenger vehicle occupants.

Recent NHTSA analyses indicate a fatality-reducing effectiveness for air bags of 14 percent when no safety belt was used and 11 percent when a safety belt was used in conjunction with air bags.

It is estimated that, as of 2003, more than 146 million air-bag-equipped passenger vehicles were on the road, including 126 million with dual air bags.

Air bags are *supplemental* protection and are not designed to deploy in all crashes. Most are designed to inflate in a moderate-to-severe *frontal* crash.

Some crashes at lower speeds may result in injuries, but generally not the serious injuries that air bags are designed to prevent. For this and other reasons, **lap/shoulder belts should always be used, even in a vehicle with an air bag.**

Children in rear-facing child seats should not be placed in the front seat of vehicles equipped with passenger-side air bags. The impact of a deploying air bag striking a rear-facing child seat could result in injury to the child.

Lives Saved by Air Bags

In 2003, an estimated 2,488 lives were saved by air bags. From 1987 to 2003, a total of 14,227 lives were saved.

Table 4. Estimated Number of Lives Saved by Restraint Systems, 1975-2003

Restraint Type	1975-95	1996	1997	1998	1999	2000	2001	2002	2003
Seat Belts	78,822	10,710	11,259	11,680	11,941	12,882	13,295	14,264	14,903
Child Restraints	3,515	480	444	438	447	479	388	383	401
Air Bags	1,266	783	973	1,208	1,491	1,716	1,978	2,324	2,488

In 2002, NHTSA revised its method for calculating lives saved by air bags. The estimates in Table 4 reflect this revision.

“Air bags, combined with lap/shoulder safety belts, offer the most effective safety protection available today for passenger vehicle occupants.”

“Between 1987 and 2003, 14,227 lives were saved by air bags.”

Restraint Use Laws

The U.S. Department of Transportation's July 1984 rulemaking on automatic occupant protection began a wave of legislative action that resulted in the enactment of safety belt use laws in many states. The goal of those laws is to promote belt use and thereby reduce deaths and injuries in motor vehicle crashes.

The first mandatory belt use law was enacted in the State of New York in 1984. As of December 2003, 49 states and the District of Columbia had adult belt use laws in effect. The laws differ from state to state, according to the type and age of the vehicle, occupant seating position, etc.

In 28 of the states with belt use laws in 2003, the law specified secondary enforcement. That is, police officers are permitted to write a citation only after a vehicle is stopped for some other traffic infraction. Twenty-one states and the District of Columbia had laws that allowed primary enforcement, enabling officers to stop vehicles and write citations whenever they observe violations of the belt law.

A 1995 NHTSA study, *Safety Belt Use Laws: An Evaluation of Primary Enforcement and Other Provisions*, indicates that states with primary enforcement safety belt laws achieved significantly higher belt use than did those with secondary enforcement laws. The analysis suggests that belt use among fatally injured occupants was at least 15 percent higher in states with primary enforcement laws.

The first mandatory child restraint use law was implemented in the State of Tennessee in 1978. Since 1985, all 50 states and the District of Columbia have had child restraint use laws in effect. These laws also cover various segments of the population.

For more information:

Information on occupant protection is available from the National Center for Statistics and Analysis, NPO-101, 400 Seventh Street, S.W., Washington, D.C. 20590. NCSA information can also be obtained by telephone or by fax-on-demand at 1-800-934-8517. FAX messages should be sent to (202) 366-7078. General information on highway traffic safety can be accessed by Internet users at <http://www.nhtsa.dot.gov/people/nca>. To report a safety-related problem or to inquire about motor vehicle safety information, contact the Auto Safety Hotline at 1-800-424-9393.

Other fact sheets available from the National Center for Statistics and Analysis are *Overview*, *Alcohol*, *Older Population*, *Speeding*, *Children*, *Young Drivers*, *Pedestrians*, *Pedalcyclists*, *Motorcycles*, *Large Trucks*, *School Transportation-Related Crashes*, *State Traffic Data*, and *State Alcohol Estimates*. Detailed data on motor vehicle traffic crashes are published annually in *Traffic Safety Facts: A Compilation of Motor Vehicle Crash Data from the Fatality Analysis Reporting System and the General Estimates System*. The fact sheets and annual *Traffic Safety Facts* report can be accessed online at <http://www.nhtsa.dot.gov/people/nca>.