Traffic Safety Facts
Research Note

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Seat Belt Use in 2008—Demographic Results

Seat belt use in the United States for occupants under 70 years of age increased in 2008. Seat belt use for occupants ages 8–15 stood at 83 percent in 2008 (up from 82% in 2007), at 80 percent for occupants ages 16–24 (up from 77% in 2007) and at 84 percent for occupants ages 25–69 (up from 83% in 2007). While not statistically significant, these increases are a positive sign that more people are buckling up. Seat belt use among occupants age 70 and older decreased from 88 percent in 2007 to 84 percent in 2008, a statistically significant result. These results are from the National Occupant Protection Use Survey (NOPUS), which provides the only nationwide probability-based observed data on seat belt use in the United States. The NOPUS is conducted annually by the National Center for Statistics and Analysis of the National Highway Traffic Safety Administration.

The 2008 survey also found the following:

- Seat belt use continued to be lower among 16- to 24-year-olds than other age groups.
- Seat belt use continued to be lower among Blacks than other races.
- Seat belt use continued to be higher among females than males.
- Seat belt use continued to be lower among drivers driving alone than among drivers with passengers.

Figure 1
Seat Belt Use by Age in 2007 and 2008

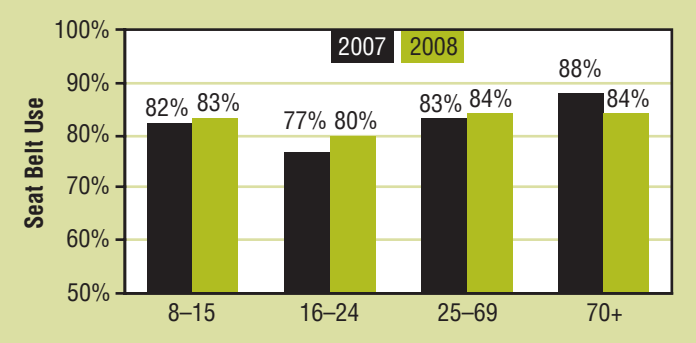


Figure 2
Seat Belt Use by Gender

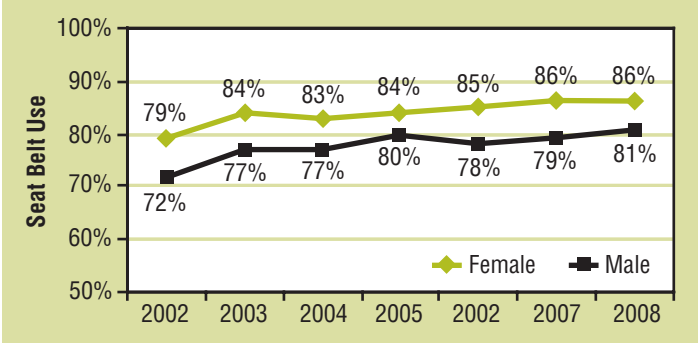


Figure 3
Seat Belt Use by Race

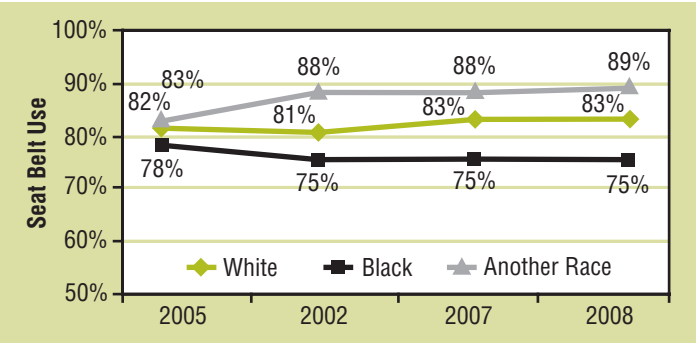
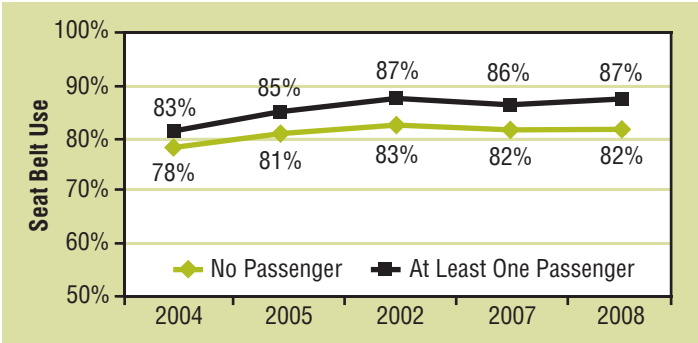


Figure 4
Passenger Effect on Seat Belt Use



Source for the four charts: National Occupant Protection Use Servey, National Highway Traffic Safety Administration, National Center for Statistics and Analysis

Seat belt use nationwide was 83 percent in 2008, a slight gain from the 2007 use rate of 82 percent. This research note presents the demographic breakouts of the 83 percent national rate. For information of the 2008 use rates in terms of region, vehicle type, etc., please see the companion publication "Seat Belt Use in 2008—Overall Results," which is available at http://www-nrd.nhtsa.dot.gov/CMSWeb/index.aspx.

Table 1
Passenger Vehicle Occupant Seat Belt Use by Demographic and Other Characteristics

Occupant Group[1]	2007		2008		2007–2008 Change	
	Belt Use[2]	Confidence That Use Is High or Low in Group[3]	Belt Use[2]	Confidence That Use Is High or Low in Group[3]	Change in Percentage Points	Confidence in a Change in Use[4]
All Occupants	82%		83%		1	49%
Males	79%	**100%**	81%	**100%**	2	73%
Females	86%	**100%**	86%	**100%**	0	4%
Occupants Who Appear to Be						
Age 8–15	82%	57%	83%	55%	1	11%
Age 16–24	77%	**100%**	80%	**96%**	3	89%
Age 25–69	83%	88%	84%	**94%**	1	54%
Age 70 and Older	88%	**100%**	84%	73%	-4	**98%**
Occupants Who Appear to Be						
White	83%	62%	83%	58%	0	40%
Black	75%	**100%**	75%	**100%**	0	10%
Members of Other Races	88%	**100%**	89%	**100%**	1	27%
Drivers With						
No Passengers	82%	**100%**	82%	**100%**	0	38%
At Least One Passenger	86%	**100%**	87%	**100%**	1	64%
Drivers With						
No Passengers	82%	**100%**	82%	**100%**	0	38%
Passengers All Under Age 8	87%	**100%**	89%	**100%**	2	64%
Passengers All Age 8 and Older	85%	**100%**	86%	**100%**	1	62%
Some Passengers Under Age 8 and Some Age 8 or Older	88%	**100%**	88%	**99%**	0	7%
Drivers Age 16–24 With						
No Passengers	79%	82%	81%	**91%**	2	78%
Passengers All Age 16–24	78%	70%	80%	85%	2	50%
At Least One Passenger Not Age 16–24	83%	**98%**	87%	**100%**	4	67%
Occupants Age 16–24 When						
All Occupants Are Age 16–24	77%	76%	80%	**98%**	3	79%
At Least One Occupant Is Not Age 16–24	78%	76%	83%	**98%**	5	**94%**

[1] Drivers and right-front passengers of passenger vehicles with no commercial or government markings.
[2] Use of shoulder belts observed between 7 a.m. and 6 p.m.
[3] The level of statistical confidence that use in the occupant group (e.g., occupants who appear to be White) is higher or lower than use in the corresponding complementary occupant groups (e.g., combined occupants who appear to be Black or members of other races). Confidence levels that meet or exceed 90 percent are formatted in boldface type. Confidence levels are rounded to the nearest percentage point, and so levels reported as "100 percent" confidence are between 99.5 percent and 100 percent.
[4] The degree of statistical confidence that the 2008 use rate is different from the 2007 rate. Confidence levels that meet or exceed 90% are formatted in boldface type.

Source: National Occupant Protection Use Survey, National Highway Traffic Safety Administration, National Center for Statistics and Analysis

Survey Methodology

The National Occupant Protection Use Survey is the only nationwide probability-based observational survey of seat belt use in the United States. The survey observes usage as it actually occurs at a random selection of roadway sites, and so provides the best tracking of the extent to which vehicle occupants in this country are buckling up.

Table 2
Sites, Vehicles, and Occupants Observed

Numbers of	2007	2008	Percentage Change
Sites Observed	1,534	1,504	-2%
Vehicles Observed	58,216	55,199	-5%
Occupants Observed	81,646	79,286	-3%
Front Seat	74,506	71,144	-5%

The survey data is collected by sending trained observers to probabilistically sampled intersections controlled by stop signs or stoplights, where vehicle occupants are observed from the roadside. Data is collected between 7 a.m. and 6 p.m. Only stopped vehicles are observed to permit time to collect the variety of information required by the survey, including subjective assessments of vehicle occupants' age and race. Observers collect data on the driver, right-front passenger, and up to two passengers in the second row of seats. Observers do not interview vehicle occupants, so that the NOPUS can capture the untainted behavior of occupants. The 2008 NOPUS data was collected between June 2 and June 22, while the 2007 data was collected between June 4 and June 25, 2007.

Although the data was collected solely from vehicles stopped at intersections controlled by stop signs or stoplights, the estimates in this publication concerning seat belt use in the front seat reflect use by occupants in transit on all types of roadways. This is accomplished by making adjustments using data from another portion of the survey that observes belt use in vehicles in transit on general roadways.

Because the NOPUS sites were chosen through probabilistic means, we can analyze the statistical significance of its results. Statistically significant changes in belt use between 2007 and 2008 are identified in the table "Passenger Vehicle Occupant Seat Belt Use by Demographic and Other Characteristics" by having a result that is 90 percent or greater in the table's column 7. Statistical confidence levels that seat belt use in a given occupant group (e.g., occupants who appear to be White) is higher or lower than in the complementary occupant groups (e.g., combined occupants who appear to be Black or members of other races) are provided in columns 3 and 5. Such comparisons are made within categories delineated by changes in row shading in the table.

The NOPUS uses a complex multistage probability sample, statistical data editing, imputation of unknown values, and complex estimation and variance estimation procedures. The 2008 NOPUS continued the transition to the newly designed sample of observation sites, which was implemented in 2006. The 2008 results reflect the partial incorporation of a set of observation sites from the new design (about 60%) and a set of the observation sites from the old design (about 40%). Data from 2005 and prior years was obtained from the old observation sites only.

Data collection, estimation, and variance estimation for the NOPUS are conducted by Westat, Inc., under the direction of the National Center for Statistics and Analysis in NHTSA under Federal contract number DTNH22-07-D-00057.

Definitions

Vehicle occupants observed in the survey were counted as "belted" if they appeared to have a shoulder belt across the front of the body. NOPUS does not observe the use of lap belts because these restraints cannot be reliably observed from the roadside.

The racial categories "Black," "White," and "Other Races" appearing in the table reflect subjective characterizations by roadside observers regarding the race of vehicle occupants. Likewise observers recorded the age group (8–15 years; 16–24 years; 25–69 years; and 70 years or older) that best fit their visual assessment of each observed occupant.

For More Information

This research note was written by Timothy M. Pickrell, a mathematical statistician in the Mathematical Analysis Division, National Center for Statistics and Analysis, NHTSA, and by Tony Jianqiang Ye, a contractor employed by URC Enterprises, working with the Mathematical Analysis Division, National Center for Statistics and Analysis, NHTSA. For questions regarding the information presented in this document, please contact timothy.pickrell@dot.gov.

Detailed analyses of the data in this publication, as well as additional data and information on the survey design and analysis procedures, will be available in upcoming publications to be posted at the Web site http://www-nrd.nhtsa.dot.gov/CMSWeb/index.aspx in 2009.

Seat belts are approximately 50-percent effective at preventing fatality and save approximately 15,000 lives each year. (Traffic Safety Facts: 2007 Data, NHTSA, DOT HS 810991). For more information on the campaign by NHTSA and the States to increase seat belt use, see http://www.nhtsa.gov/portal/site/nhtsa/menuitem.ce4a601cdfe97fc239d17110cba046a0.

NOPUS also observes other types of restraints, such as motorcycle helmets and child restraints, and observes driver electronic device use. This publication is part of a series that presents overall results from the survey on these topics. Please see other notes in the series such as "Motorcycle Helmet Use in 2008—Overall Results" for the latest data on these topics.

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