U.S. Department of Transportation
National Highway Traffic Safety Administration

TRAFFIC SAFETY FACTS
Research Note

NHTSA

DOT HS 813 241

December 2021

Seat Belt Use in 2021 – Overall Results

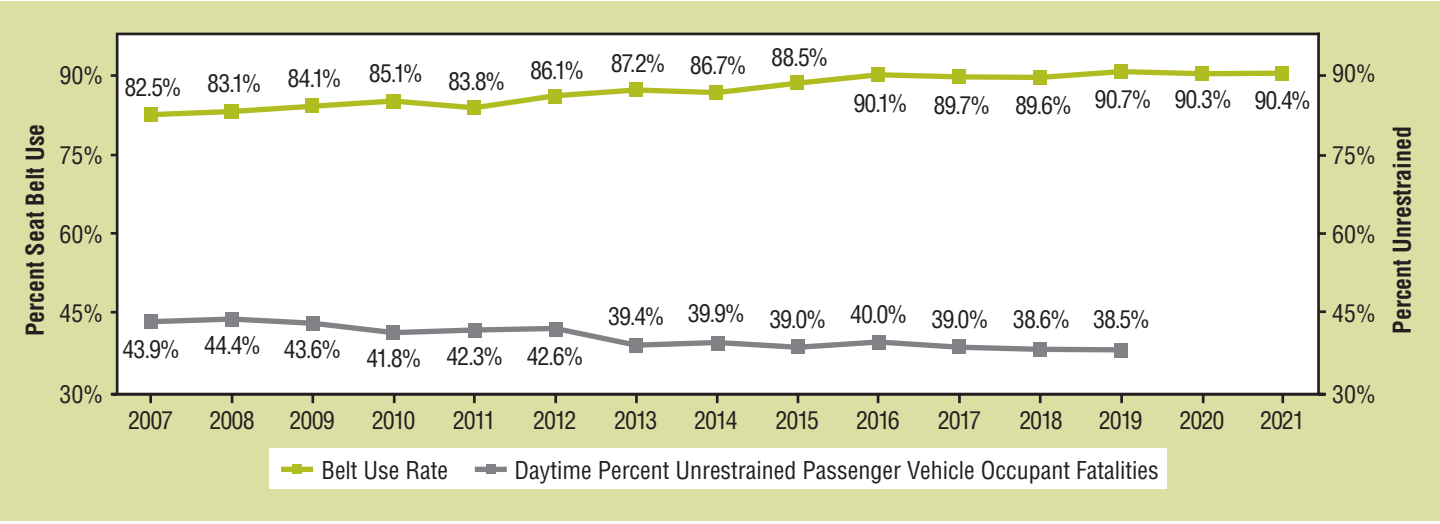
The national estimate of seat belt use by adult front-seat passengers in 2021 was 90.4 percent, not statistically different (at the 0.05 level) from 90.3 percent observed in 2020. The seat belt use rate estimate represents the percentage of occupants who are belted during an average daylight moment.

Figure 1 displays an increasing trend of seat belt use over a 15-year period, contrasted with a declining trend in the percentage of unrestrained passenger vehicle occupant fatalities during daytime.[1] The 2021 survey found no significant changes in seat belt use from 2020 to 2021 for any of the occupant categories listed in Table 1. Seat belt use continued to be higher in the west region compared to the other regions of the country (Figure 2). Seat belt use also continued to be higher in the States in which vehicles can be pulled over solely for occupants not using seat belts ("primary law States") compared to the States with weaker enforcement laws ("secondary law States") or no seat belt laws for adults (Figure 3).

The 2021 data collection occurred during the usual timeframe of early June, immediately following the *Click It or Ticket* campaign. The 2020 data collection occurred in August, two months later than usual, and without the *Click It or Ticket* campaign preceding it due to the coronavirus pandemic. The number of occupants observed in the 2021 survey rebounded by 9 percent following a decline in 2020.

These results are from the National Occupant Protection Use Survey (NOPUS), the only survey that provides 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.

Figure 1
National Seat Belt Use Rate and Daytime Percentage of Unrestrained Passenger Vehicle Occupant Fatalities



Source: NOPUS, FARS 2007–2018 Final File, FARS 2019 ARF

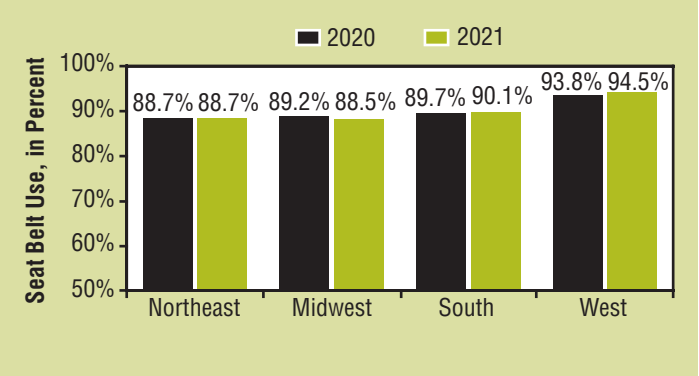
[1] The FARS 2020 and 2021 data on the percentages of unrestrained passenger vehicle occupant fatalities during daytime will be available in early 2022 and 2023.

Table 1
Seat Belt Use by Major Characteristics

Occupant Group[1]	2020 Belt Use[2]	2020 95% Confidence Interval[3]	2021 Belt Use[2]	2021 95% Confidence Interval[3]	2020–2021 Change in Percentage Points	2020–2021 Change 95% Confidence Interval[4]	2020–2021 Change P-Value[5]
All Occupants	90.3%	(88.7, 91.7)	90.4%	(88.9, 91.7)	0.1	(-1.5, 1.7)	0.90
Drivers	90.5%	(88.8, 91.9)	90.6%	(89.0, 92.0)	0.1	(-1.4, 1.7)	0.85
Right-Front Passengers	89.6%	(87.9, 91.1)	89.4%	(87.7, 90.9)	-0.1	(-2.2, 2.0)	0.90
Occupants in States With[6]							
Primary Enforcement Laws	91.1%	(89.2, 92.6)	91.0%	(89.5, 92.3)	-0.1	(-1.5, 1.4)	0.94
Secondary/No Enforcement Laws	87.6%	(83.8, 90.6)	88.0%	(82.6, 92.0)	0.5	(-4.5, 5.4)	0.85
Occupants Traveling on							
Expressways	93.5%	(92.1, 94.7)	94.2%	(93.1, 95.2)	0.7	(-0.7, 2.0)	0.32
Surface Streets	88.1%	(85.9, 89.9)	87.5%	(85.6, 89.2)	-0.6	(-2.6, 1.4)	0.54
Occupants Traveling in							
Fast Traffic	92.4%	(90.9, 93.7)	92.9%	(91.6, 94.1)	0.5	(-1.0, 1.9)	0.51
Medium Speed Traffic	89.0%	(86.9, 90.8)	88.3%	(86.1, 90.1)	-0.7	(-2.8, 1.4)	0.49
Slow Traffic	86.5%	(83.4, 89.1)	86.4%	(83.6, 88.7)	-0.1	(-3.5, 3.2)	0.93
Occupants Traveling in							
Heavy Traffic	92.2%	(90.6, 93.5)	92.0%	(90.6, 93.3)	-0.1	(-1.2, 1.0)	0.84
Moderately Dense Traffic	88.9%	(86.8, 90.8)	89.3%	(87.1, 91.2)	0.4	(-2.1, 2.9)	0.75
Light Traffic	83.1%	(79.4, 86.2)	81.6%	(78.3, 84.5)	-1.4	(-5.8, 2.9)	0.50
Occupants Traveling Through							
Not Clear Weather Conditions	91.4%	(88.6, 93.5)	90.5%	(87.0, 93.2)	-0.8	(-4.6, 3.0)	0.65
Clear Weather Conditions	90.1%	(88.6, 91.5)	90.4%	(88.8, 91.7)	0.2	(-1.5, 2.0)	0.79
Occupants in							
Passenger Cars	91.0%	(89.3, 92.4)	90.8%	(89.4, 91.9)	-0.2	(-1.9, 1.5)	0.80
Vans and SUVs	92.0%	(90.6, 93.2)	92.4%	(90.9, 93.7)	0.4	(-0.9, 1.7)	0.56
Pickup Trucks	85.5%	(82.8, 87.8)	85.1%	(82.0, 87.7)	-0.4	(-3.4, 2.6)	0.78
Occupants in							
Northeast	88.7%	(83.2, 92.6)	88.7%	(84.5, 91.9)	0.0	(-4.3, 4.3)	1.00
Midwest	89.2%	(85.7, 92.0)	88.5%	(84.6, 91.5)	-0.8	(-5.1, 3.6)	0.72
South	89.7%	(86.9, 91.9)	90.1%	(87.6, 92.1)	0.4	(-2.1, 3.0)	0.74
West	93.8%	(92.8, 94.7)	94.5%	(93.2, 95.6)	0.7	(-0.5, 2.0)	0.25
Occupants in							
Urban Areas	90.5%	(88.9, 92.0)	90.5%	(88.8, 92.0)	0.0	(-1.3, 1.3)	1.00
Rural Areas	89.9%	(87.3, 92.0)	90.1%	(87.8, 92.1)	0.3	(-2.4, 2.9)	0.84
Occupants Traveling During							
Weekdays	90.2%	(88.5, 91.7)	90.0%	(88.3, 91.5)	-0.2	(-1.8, 1.4)	0.80
Weekday Rush Hours	89.7%	(87.9, 91.2)	90.1%	(88.6, 91.5)	0.4	(-1.1, 1.9)	0.56
Weekday Non-Rush Hours	90.6%	(88.6, 92.2)	89.8%	(87.5, 91.8)	-0.7	(-2.8, 1.4)	0.49
Weekends	90.5%	(88.8, 92.0)	91.3%	(89.7, 92.7)	0.8	(-1.4, 2.9)	0.47

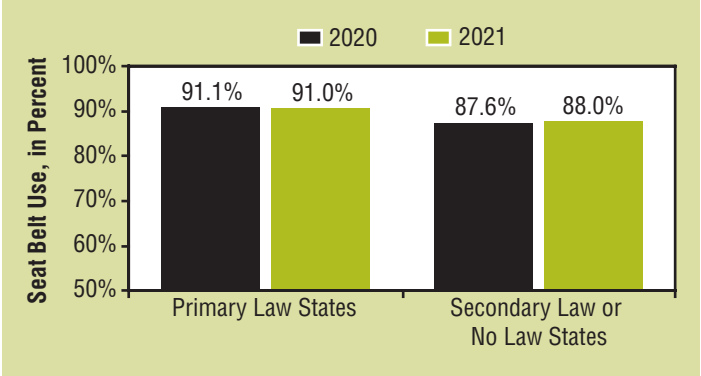
[1] Drivers and right-front passengers of all observed passenger vehicles
[2] Shoulder belt use observed from 7 a.m. to 6 p.m.
[3] The Wilson Confidence Interval has the form: $\{(2n_{EFF}p + t^2) \pm t\sqrt{(t^2 + 4n_{EFF}pq)}\}/2(n_{EFF} + t^2)$, where p is the estimated percentage of Belt Use, $n_{EFF} = n/DEFF$ is the effective sample size (where n is the sample size and DEFF is the design effect), $t \equiv t_{1-\alpha/2}(df)$, is a multiplier from the t-distribution with df degrees of freedom, and $q = 1 - p$. For percentages, these endpoints are multiplied by 100.
[4] The regular symmetric interval was used for the estimated change in percentage point, which is in the form: $p \pm t_{1-\alpha/2}(df)\sqrt{v(p)}$, where p is the estimated change in percentage point, $v(p)$ is its estimated variance, and $t_{1-\alpha/2}(df)$ is a multiplier from the t-distribution with df degrees of freedom.
[5] A p-value of 0.05 or less indicates that there is a statistically significant difference (at the alpha=0.05 level) between the year-over-year estimates for the group in question, **indicated with bold type**.
[6] Use rates reflect the laws in effect at the time data were collected.
Data Source: NOPUS, NCSA, 2020, 2021

Figure 2
Seat Belt Use by Region



Source: NOPUS

Figure 3
Seat Belt Use by Law Type



Source: NOPUS

Survey Methodology

NOPUS is the only nationwide probability-based observational survey of seat belt use in the United States. The survey observes seat belt use as it actually occurs at randomly selected roadway sites and thus provides the best tracking of the extent to which passenger vehicle occupants in the United States are buckling up.

The survey data are collected by sending trained observers to probabilistically sampled roadways, who observe passenger vehicles from 7 a.m. to 6 p.m. Observations are made either while standing at the roadside or, in the case of expressways, while riding in a vehicle in the traffic. In order to capture the true behavior of passenger vehicle occupants, the NOPUS observers do not stop vehicles or interview occupants. The 2021 NOPUS data were collected from June 7 to June 25, 2021, while the 2020 NOPUS data were collected from July 27 to August 16, 2020, which is 2 months later than usual due to the onset of the coronavirus pandemic. Also, the 2020 NOPUS did not have the *Click It or Ticket* campaign preceding it.

The NOPUS uses a complex, multistage probability sample, statistical data editing, imputation of unknown values, and complex estimation procedures. Table 2 shows the observed sample sizes of the 2021 NOPUS Moving Traffic Survey. A total of 127,081 occupants were observed in the 103,828 vehicles, which are respectively 9 percent and 11 percent more than the 2020 sample due to reduced traffic volume from the pandemic in 2020.

Because the NOPUS sites were selected probabilistically, we can test the statistical significance of the results. Statistically significant changes in seat belt use between 2020 to 2021 are identified in Table 1 by a *p*-value that is 0.05 or less in the table's far-right column.

Table 2
Sites, Vehicles, and Occupants* Observed

Numbers of	2020	2021	Percentage Change
Sites Observed	1,875	1,873	-0.11%
Vehicles Observed	93,812	103,828	10.68%
Occupants Observed*	116,394	127,081	9.18%

*Drivers and right-front passengers only.

Data collection, estimation, and variance estimation for the NOPUS are conducted by Westat, Inc., under the direction of NHTSA's National Center for Statistics and Analysis under Federal contract number 693JJ918D000001.

Definitions

Under NOPUS observation protocols, a driver or right-front passenger is considered "belted" if a shoulder belt appears to be across the front of the body.

A jurisdiction that can enforce traffic laws, such as a State or the District of Columbia, has a "primary enforcement" law if occupants can be ticketed simply for not using their seat belts. Under "secondary enforcement" laws, vehicles must be stopped for another violation, such as an expired license tag, before an occupant can be cited for seat belt nonuse. As of May 31, 2021, primary laws were in effect in 34 States and the District of Columbia, 15 States had secondary laws, and 1 State (New Hampshire) effectively has no adult seat belt law. In New Hampshire, it is legal for occupants over age 18 to ride unbelted (Highway Loss Data Institute, 2021). Table 3 provides a list of the States with "primary enforcement" laws.

Table 3
States With Primary Enforcement Seat Belt Laws*

Alabama	Hawaii	Michigan	Rhode Island
Alaska	Illinois	Minnesota	South Carolina
Arkansas	Indiana	Mississippi	Tennessee
California	Iowa	New Jersey	Texas
Connecticut	Kansas	New Mexico	Utah
Delaware	Kentucky	New York	Washington
District of Columbia	Louisiana	North Carolina	West Virginia
Florida	Maine	Oklahoma	Wisconsin
Georgia	Maryland	Oregon	

*States with laws in effect as of May 31, 2021.

"Expressways" are defined to be roadways with limited access, while "surface streets" comprise all other roadways.

A roadway is defined to have "fast traffic" if during the observation period the average speed of passenger vehicles that pass the observer exceeds 50 mph, with "medium-speed traffic" defined as 31 to 50 mph, and "slow traffic" defined as 30 mph or slower.

A roadway is defined to have "heavy traffic" if the average number of vehicles on the roadway during the observation period is greater than 5 per lane per mile, with "moderately dense traffic" defined as greater than 1 but less than or equal to 5 vehicles per lane per mile, and "light traffic" as less than or equal to 1 vehicle per lane per mile.

As of 2018 "Not Clear Weather Conditions" includes sites where light precipitation or light fog is present.

The survey uses the following definitions of geographic regions, defined by the States below.

Northeast:	CT, MA, ME, NH, NJ, NY, PA, RI, VT
Midwest:	IA, KS, IL, IN, MI, MN, MO, ND, NE, OH, SD, WI
South:	AL, AR, DC, DE, FL, GA, KY, LA, MD, MS, NC, OK, SC, TN, TX, VA, WV
West:	AK, AZ, CA, CO, HI, ID, MT, NM, NV, OR, UT, WA, WY

Urban and Rural area classifications are based on Census's 2010 urban area classification. Urban areas are comprised of Urban (Census-identified Urbanized Areas of 50,000 or more people) or suburban (Census-identified Urban Clusters of at least 2,500 and less than 50,000 people). Rural areas are not designated as Urban Areas or Urban Clusters.

"Weekday Rush hours" are defined to be 7 a.m. to 9:30 a.m. and 3:30 to 6 p.m. on weekdays, while "Weekday Non-Rush Hours" comprise all other weekday hours (9:30 a.m. to 3:30 p.m.).

Seat belt use rates reflect the State laws in effect at the time of data collection.

References

Highway Loss Data Institute. (2021, October). Seat belt and child seat laws by State (Web page). Insurance Institute for Highway Safety. Available at www.iihs.org/topics/seat-belts/seat-belt-law-table

National Center for Statistics and Analysis. (2019, March). *Lives saved in 2017 by restraint use and minimum-drinking-age laws* (Traffic Safety Facts CrashStats. Report No. DOT HS 812 683). National Highway Traffic Safety Administration. https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812683

For More Information

For questions regarding the information presented in this document, please contact ncsaweb@dot.gov.

Additional data and information on the survey design and analysis procedures will be available in upcoming publications to be posted at the website https://crashstats.nhtsa.dot.gov/#/.

Research has found that lap/shoulder seat 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. In 2017 the use of seat belts in passenger vehicles saved an estimated 14,955 lives of occupants 5 and older (National Center for Statistics and Analysis, 2019). For more information on the campaign by NHTSA and the States to increase seat belt use, see www.nhtsa.gov/CIOT.

The NOPUS also observes other types of restraints, such as child restraints and motorcycle helmets, and observes driver electronic device use. This publication is part of a series that presents overall results from the survey on these topics. Please refer to the upcoming research notes and technical reports in the series, such as "Motorcycle Helmet Use in 2021–Overall Results," for the latest data on these topics.

The suggested APA format citation for this document is:

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This research note and other general information on highway traffic safety may be accessed at: https://crashstats.nhtsa.dot.gov/

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