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Traffic Safety Facts
Research Note

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Driver Cell Phone Use in 2004 — Overall Results

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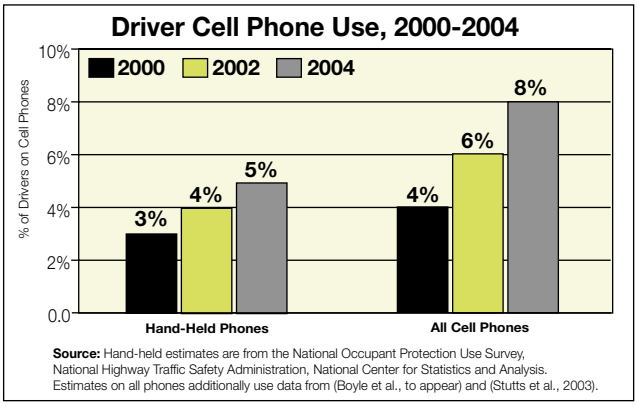
During the typical daylight moment in 2004, 5% of drivers on the road were holding cellular phones to their ears, compared to 4% in 2002, and 3% in 2000. These results are from the National Occupant Protection Use Survey (NOPUS), which provides the only probability-based observed data on driver cell phone use in the United States. The NOPUS is conducted annually by the National Center for Statistics and Analysis in the National Highway Traffic Safety Administration (NHTSA).

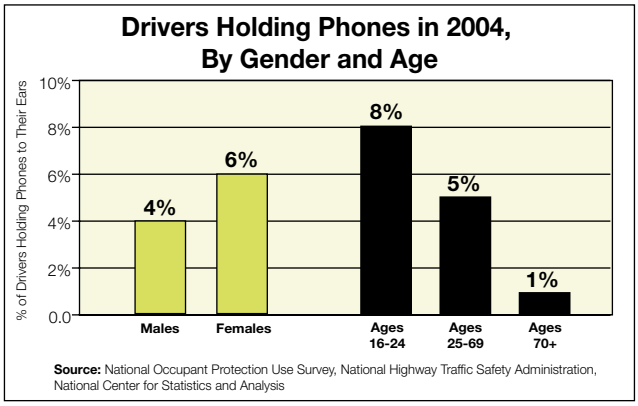
The NOPUS's finding of 5% use of hand-held phones in 2004 translates into an estimated 800,000 vehicles on the road during the typical daylight moment in 2004 driven by someone holding a phone. It also means that approximately 8% of drivers were using wireless phones in some manner, whether they were holding the phone or using some hands-free device. These results were obtained by combining results from the NOPUS with data from the National Household Travel Survey and the research studies (Boyle et al., to appear) and (Stutts et al., 2003).

The 2004 NOPUS also found the following:

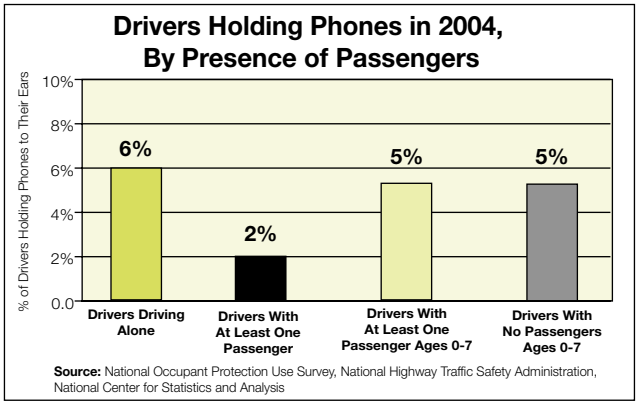
- Hand-held cell phone use increased among drivers between the ages of 16 and 24, from 5% in 2002 to 8% in 2004.
- Hand-held cell phone use increased among female drivers, from 4% in 2002 to 6% in 2004.
- Drivers are more likely to use their phones when they are driving alone. In 2004, 6% of drivers observed driving alone were holding cell phones, compared to 2% among drivers who had at least one passenger.
- In the first nationwide observed estimate of driver headset use, the NOPUS found that 0.4% of drivers were speaking with headsets on in 2004.



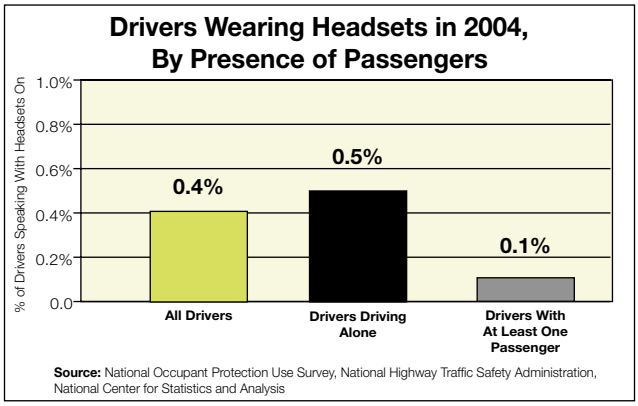
Source: Hand-held estimates are from the National Occupant Protection Use Survey, National Highway Traffic Safety Administration, National Center for Statistics and Analysis. Estimates on all phones additionally use data from (Boyle et al., to appear) and (Stutts et al., 2003).



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



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



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

Drivers Holding Phones, by Major Characteristics

Driver Group[1]	2000		2002		2000-2002 Change		2004		2000-2004 Change		2002-2004 Change	
	Drivers Holding Phones[2]	Significantly High (H) and Low (L) Use Rates[3]	Drivers Holding Phones[2]	Significantly High (H) and Low (L) Use Rates[3]	Change, in Percentage Points	Confidence in a Change in Use[4]	Drivers Holding Phones[2]	Significantly High (H) and Low (L) Use Rates[3]	Change, in Percentage Points	Confidence in a Change in Use[4]	Change, in Percentage Points	Confidence in a Change in Use[4]
All Drivers	3%		4%		1	77%	5%		2	98%	1	78%
Males	3%		4%		1	81%	4%		1	93%	0	0%
Females	3%		4%		1	59%	6%		3	98%	2	92%
Drivers Who Appear to Be[5]												
Ages 16-24	3%		5%		2	83%	8%	H	5	99%	3	99%
Ages 25-69	3%		4%		1	70%	5%		2	96%	1	59%
Ages 70 and Up	1%	L	1%	L	0	0%	1%	L	0	0%	0	0%
Drivers Who Appear to Be[5]												
White	4%	H	4%		0	0%	5%		1	81%	1	85%
Black	2%		5%		3	95%	5%		3	94%	0	0%
Members of Other Races	2%		5%		3	87%	3%	L	1	78%	-2	66%
Drivers on												
Expressway Exit Ramps	NA		4%		NA		6%		NA		2	93%
Surface Streets	3%		4%		1	73%	5%		2	87%	1	40%
Drivers Traveling Through												
Light Precipitation	3%		3%		0	0%	5%		2	46%	2	64%
Fog	NA		5%		NA		NA		NA		NA	
Clear Weather Conditions	3%		4%		1	76%	5%		2	98%	1	75%
Drivers of												
Passenger Cars	3%		4%		1	77%	4%		1	89%	0	0%
Vans & SUVs	5%	H	5%		0	0%	6%		1	60%	1	64%
Pickup Trucks	2%		3%		1	72%	5%		3	99%	2	99%
Drivers in the												
Northeast	3%		3%	L	0	0%	3%	L	0	0%	0	0%
Midwest	4%		5%		1	44%	5%		1	39%	0	0%
South	4%		3%		-1	13%	6%		2	82%	3	92%
West	2%		5%		3	87%	6%		4	99%	1	33%
Drivers in												
Urban Areas	2%		5%		3	94%	7%		5	99%	2	98%
Suburban Areas	3%		5%		2	61%	4%		1	50%	-1	18%
Rural Areas	3%		2%	L	-1	52%	6%		3	92%	4	98%
Drivers Traveling During												
Weekdays	3%		4%		1	56%	5%		2	95%	1	80%
Weekday Rush Hours	2%	L	3%		1	57%	5%		3	99%	2	99%
Weekday Non-Rush Hours	5%	H	5%		0	0%	5%		0	0%	0	0%
Weekends	2%		4%		2	78%	3%		1	97%	-1	29%
Drivers of Vehicles in Which[6]												
They Are the Sole Occupant	NA		NA		NA		6%	H	NA		NA	
There Is At Least One Passenger	NA		NA		NA		2%	L	NA		NA	
Drivers of Vehicles in Which[6]												
There Is At Least One 0-7 Year Old Passenger	NA		3%		NA		5%		NA		2	63%
There Are No 0-7 Year Old Passengers	NA		4%		NA		5%		NA		1	82%

[1] Drivers of passenger vehicles with no commercial or government markings stopped at a stop sign or stoplight between the hours of 8 AM and 6 PM.
[2] The percent of drivers who appeared to be holding a phone to their ear.
[3] Rates flagged with an "H" or "L" are statistically high or low in their category at a 90% confidence level.
[4] The degree of statistical confidence that the use rates in the two specified time periods, e.g. 2000 vs. 2002, differ.
[5] Based on the subjective characterization of observers.
[6] Among passengers observed in the right front seat and the second row of seats.
NA: Data not collected or not sufficient to produce a reliable estimate.
Source: National Occupant Protection Use Survey, National Highway Traffic Safety Administration, National Center for Statistics and Analysis

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Drivers Speaking with Headsets On, by Major Characteristics

Driver Group[1]	Headset Use[2]	Significantly High (H) and Low (L) Use Rates[3]
All Drivers	0.4%	
Males	0.5%	
Females	0.2%	
Drivers Who Appear to Be[4]		
Ages 16-24	0.8%	
Ages 25-69	0.3%	
Ages 70 and Up	NA	
Drivers Who Appear to Be[4]		
White	0.3%	
Black	0.8%	
Members of Other Races	0.2%	
Drivers on		
Expressway Exit Ramps	0.4%	
Surface Streets	0.3%	
Drivers Traveling Through		
Light Precipitation	0.1%	
Fog	NA	
Clear Weather Conditions	0.4%	
Drivers of		
Passenger Cars	0.4%	
Vans & SUVs	0.3%	
Pickup Trucks	0.4%	
Drivers in the		
Northeast	1.0%	
Midwest	0.2%	
South	0.4%	
West	0.3%	
Drivers in		
Urban Areas	0.9%	
Suburban Areas	0.2%	
Rural Areas	0.4%	
Drivers Traveling During		
Weekdays	0.4%	
Weekday Rush Hours	0.6%	
Weekday Non-Rush Hours	0.3%	
Weekends	0.2%	
Drivers of Vehicles in Which[5]		
They Are the Sole Occupant	0.5%	H
There Is At Least One Passenger	0.1%	L
Drivers of Vehicles in Which[5]		
There Is At Least One 0-7 Year Old Passenger	NA	
There Are No 0-7 Year Old Passengers	0.4%	

[1] Drivers of passenger vehicles with no commercial or government markings stopped at a stop sign or stoplight between the hours of 8 AM and 6 PM.

[2] The percent of drivers who appeared to be wearing a headset with a microphone, and who appeared to be speaking.

[3] Rates flagged with an "H" or "L" are statistically high or low in their category at a 90% confidence level.

[4] Based on the subjective characterization of observers.

[5] Among passengers observed in the right front seat and the second row of seats.

NA: Data not sufficient to produce a reliable estimate.

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 (NOPUS) is the only probability-based observational survey of driver cell phone 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 driver cell phone use in this country.

The survey data is collected by sending observers to a set of probabilistically sampled intersections controlled by a stop sign or stoplight,

Sites, Vehicles, and Motorists Observed

Numbers of	2002	2004	Change
Sites Observed	1,200	1,200	0%
Vehicles Observed	37,000	38,000	3%
Drivers Observed[1]			
Ages 16-24	4,000	5,000	25%
Ages 25-69	30,000	32,000	7%
Ages 70+	3,000	2,000	-33%

[1]Estimates do not sum to totals due to rounding.

where motorists are observed from the roadside. Data are collected between the hours of 8 AM and 6 PM. Only stopped vehicles are observed to permit time to collect the variety of information required by the survey, including subjective assessments of motorists' age and race. Observers collect data on the driver and observe the presence of a right front passenger and up to two passengers in the second row of seats. Observers do not interview motorists, so that the NOPUS captures the untainted behavior of vehicle occupants. The 2004 NOPUS data were collected between June 7 and July 11, 2004, excluding the period July 2-5.

Because the NOPUS sites were chosen through probabilistic means, we can analyze the statistical significance of its results. Statistically

significant increases in hand-held phone use during the periods 2000-2002, 2000-2004, and 2002-2004 are identified in the table "Drivers Holding Phones, by Major Characteristics" by a result that is 90% or greater in columns 7, 11, and 13, respectively. Significantly high and low levels of cell phone use, such as the higher hand-held use rates by drivers between the ages of 16 and 24 in 2004 compared to older drivers, are identified by H's and L's in columns 3, 5, and 9 of the table "Drivers Holding Phones, by Major Characteristics", and in column 3 of "Drivers Speaking with Headsets On, by Major Characteristics". Such comparisons are made within categories, such as age group, delineated by solid horizontal lines in the table. The exception to this is the grouping "Drivers Traveling During …", in which weekdays are compared to weekends, and weekday rush hour to weekday non-rush hour.

The NOPUS uses a complex multi-stage probability sample, statistical data editing, imputation of unknown values, and complex estimation and variance estimation procedures. See the NHTSA Technical Report referenced below for more information on these procedures.

The estimates of the numbers of drivers on phones and the percent of drivers using cell phones hands-free were derived via calculations that use data from the publications (Boyle et al., to appear) and (Stutts et al., 2003), and from the Department of Transportation's National Household Travel Survey. These calculations are explained in detail in the upcoming publication "Driver Cell Phone Use in 2004 – Analysis", expected to be published in the Spring of 2005.

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 DTNH22-00-D-07001.

Definitions

Drivers were counted as "using a hand-held phone" if they were holding to their ear what appeared to the observer to be a phone. In particular, drivers holding Personal Data Assistants PDAs or corded car phones to their ears might have been counted as holding a phone. (They would have been so counted if the PDA or car phone appeared to the observer to be some type of phone.) Drivers need not have been speaking into the phone to be counted as using the phone. Drivers who were dialing or otherwise manipulating a phone, but not holding it to their ear, were not counted as holding a phone, as such activity cannot be reliably observed from the roadside.

Drivers were counted as "using a headset" if they appeared to have on their head a device that had a microphone, and they appeared to be speaking. The microphone might be on a wand or other visible attachment. Devices identified as headsets need not have a headpiece (i.e. a piece of plastic running across the top of the head), and need not have a wire attached to them. Drivers identified by the survey as using headsets might have been, for instance, using voice-activated software on a laptop seated on the seat next to them, rather than speaking on a cell phone. Observers did not attempt to distinguish these two behaviors because they cannot be reliably distinguished from the roadside. Likewise, drivers identified as using headsets might have been speaking to a passenger or him- or herself, rather than speaking into the headset.

We note that there are means by which drivers can use a cell phone that would neither be recorded as holding a phone nor as using a headset in the NOPUS. For instance, some phones have a push-to-talk feature, in which the user pushes a button on the phone when s/he wishes to speak and releases the button when s/he wishes to hear the person(s) on the other end of the line via a speakerphone built into the cell phone. Additionally some cell phones have a built-in speakerphone via which a driver can converse on a phone hands-free. Drivers conversing on phones via either of these technologies would not appear to roadside observers to be holding phones to their ears (assuming the push-to-talk users are not holding the phone to their ear), and would not be wearing headsets.

The racial categories "Black", "White", and "Other Races" appearing in the tables reflect subjective characterizations by roadside observers regarding the race of motorists. 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 motorist.

"Expressways" are defined to be roadways with limited access, while "surface streets" comprise all other roadways. All expressway data in this report were collected at exit ramps having stop signs or stoplights.

Driver cell phone use is largely unrestricted by State laws. No States ban use outright. Two States and the District of Columbia ban the use of hand-held phones while driving. One of these bans took effect in 2001 (New York), and two in 2004 (New Jersey in May 2004 and D.C. in July 2004).

A small number of States otherwise restrict the manner of use, e.g., by requiring sound to travel unimpaired to at least one of the driver's ears or requiring at least one hand on the steering wheel at all times. A few States ban use in certain situations, such as when operating a school bus or public transit vehicle. In addition, some major cities have hand-held bans or otherwise restrict use.

Driving while using a headset is even less restricted by traffic laws. No States or major cities ban use outright. As with driver cell phone use, a small number of States restrict the manner of use, e.g., by requiring sound to travel unimpaired to at least one of the driver's ears, or ban certain types of use in certain situations, such as by banning cell phone use (whether hand-held or hands-free) when operating a school bus or public transit vehicle.

For More Information

For detailed analyses of the data in this publication, as well as additional data and information on the survey design and analysis procedures, see the upcoming publication "Driver Cell Phone Use in 2004 – Analysis", expected to be available at the website http://www-nrd.nhtsa.dot.gov/departments/nrd-30/ncsa/AvailInf.html in the Spring of 2005.

States with Laws Banning Hand-Held Cell Phone Use While Driving	
2002[1]	**2004[2]**
New York	New York
	New Jersey
	District of Columbia

[1]Laws in effect as of June 30, 2002.
[2]Laws in effect as of July 30, 2004.

The NOPUS also observes other types of restraints, such as safety belt use by adult motorists and the use of motorcycle helmets and child restraints. This publication is part of a series that presents overall results from the survey on these topics. Please see other members of the series, such as "Safety Belt Use in 2004 – Overall Results", and the corresponding NHTSA Technical Report "Safety Belt Use in 2004 –Overall Analysis", for the latest data on these topics.

References

Boyle, J., Vanderwolf, P., *2003 Motor Vehicle Occupant Safety Survey, Volume 4, Crash Injury and Emergency Medical Services Report, NHTSA Technical Report*, to appear.

Federal Highway Administration, *Nationwide Personal Transportation Survey*, 1995, and *National Household Travel Survey*, 2001.

Stutts, J., Hunter, W., Huang, H., *Cell Phone Use While Driving: Results of a Statewide Survey*, Transportation Research Board, Annual Meeting CD-ROM, 2003

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