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Driving Through the Eyes of Teens

A Closer Look

Second in a Series on Teen Driver Safety Issues

A Research Report of The Children's Hospital of Philadelphia and State Farm®

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Driving Through the Eyes of Teens *A Closer Look*

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About The Young Driver Research Initiative

Motor vehicle crashes remain the No. 1 cause of death for adolescents. Teen drivers (ages 16 to 19) are involved in fatal crashes at four times the rate of adult drivers (ages 25 to 69). Many teen driver-related injuries and deaths are preventable. The Children's Hospital of Philadelphia (CHOP) and State Farm Insurance Companies® are committed to helping teens stay safe on the road. Through a unique academic-industry alliance called the Young Driver Research Initiative (YDRI), we are working to advance science to reduce teen driver-related crashes. This science fuels our efforts to develop and disseminate evidence-based interventions, education, and policy to promote safe driving-related behaviors among teens and their parents.

Teen driving is a complex issue, and most experts advocate for a comprehensive approach, one that addresses not only driving concerns, but also adolescent cognitive, emotional, and social development. To answer this call to action, we assembled a multidisciplinary team comprised of experts in the fields of injury prevention; traffic safety; adolescent health; advocacy; behavioral science; biostatistics; communications; education; engineering; epidemiology, and public health. The team brings together the strengths of one of the nation's leading pediatric hospital and research institutes with the nation's largest auto insurer. YDRI employs a comprehensive, rigorous method to both analyze factors associated with teen crashes and develop interventions to change behaviors that contribute to these crashes, positioning the alliance as a unique contributor to the field of teen driver safety research.

Central to our research is the Teen-Centered Method. To get the teen viewpoint on driving, in 2006 we conducted 45 focus groups with teens across the country to create the National Young Driver Survey (NYDS). This landmark survey was administered in 68 randomly selected public high schools across the country that agreed to participate. Within each school, one ninth grade classroom, two 10th grade classrooms, and one 11th grade classroom were randomly chosen for a total sample of 5,665 students. The weighted data are representative of all 10.6 million public high school students in the U.S. It is the most comprehensive current description of youth perceptions of teen driving.

In the first report of this study, *Driving Through the Eyes of Teens* (available at www.chop.edu/youngdrivers and www.statefarm.com/teendriving), we described preliminary findings about the teen experience around driving through their eyes and in their words. From the number of hours they drive to the types of distractions they see, teens shared their perceptions with us.

New Data Confirms Teen Perspectives

In this follow-up report, we describe illuminating results from published studies that use the NYDS data. After examining attitudes about 25 risky driving situations, researchers gained important insight into factors that teens perceive as crash contributors. A growing body of evidence from this survey also points to the important role parents play in raising safe teen drivers, from the pre-driving phase through full licensure. Findings from the NYDS have been published in peer-reviewed scientific and medical journals. The results of that research included in this report reinforce and deepen our ongoing key messages for parents:

- Parents need to be sure their teens receive at least 50 hours of supervised practice under a wide variety of conditions while learning to drive, as well as careful monitoring for the first year after obtaining their full license.
- Parents need to work with teens to set driving limits and to gradually introduce new privileges when earned.
- Parents need to lead by example. Always wear a seat belt. Don't talk on a cell phone while driving. Don't speed. Follow the rules of the road.

Key Findings Analyses of the NYDS data are helping YDRI researchers develop effective interventions, education, and policy for teens and their parents. Key findings highlighted in this report include:

■ **Teens don't consider themselves inexperienced drivers.** Although 60 percent of teens believe inexperience heavily influences safety, only 15 percent consider their peers to be inexperienced.

■ **Parents play a crucial role in teen driving safety.** Teens who say their parents set rules and monitor their activities in a helpful, supportive way are half as likely to be in a crash and 71 percent less likely to drive intoxicated than teens who describe their parents as less involved.

■ **Limiting primary access to vehicles during the first 6 to 12 months of driving is important.** Teens who are the main driver of a vehicle are more than twice as likely to report having been in a crash than teens who share a car with family members. Since nearly three out of every four teens in the U.S. are the main driver of a vehicle according to our survey, this represents a significant opportunity for parents to control a major crash factor.

■ **Unlicensed teen drivers engage in more unsafe driving behaviors than licensed teen drivers.** These behaviors include not wearing seat belts and speeding, which may explain why these teens are overrepresented in fatal crashes.

A summary of key findings from other papers recently published by the Young Driver Research Initiative at CHOP is also included in this report. CHOP and State Farm regularly share their evidence-based research with the traffic safety practitioner community to advance the science and increase awareness of this public health crisis and to advocate for stricter Graduated Driver Licensing (GDL) laws, a proven strategy to prevent teen driver crashes.

This special report is designed for anyone who has an interest in teen driver safety, including advocates, educators, researchers, parents, and the media. It is supported by downloadable resources to share with others to help keep teens safe on the road. Access these resources at **www.chop.edu/youngdrivers** and **www.statefarm.com/teendriving**. For more information on study design or data interpretation, please contact us at youngdrivers@email.chop.edu.

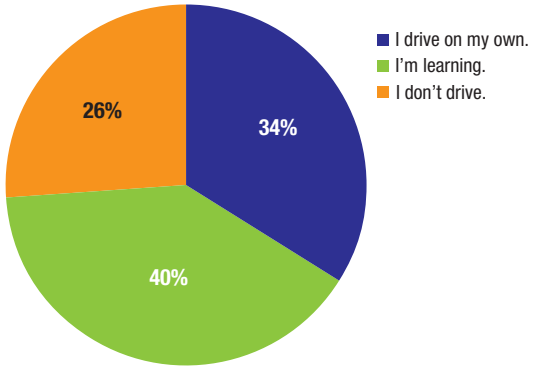
After examining attitudes about 25 risky driving situations, researchers gained important insight into factors teens perceive as crash contributors.

Teens Talk

A total of 5,665 students responded to the National Young Driver Survey. Teens in 45 focus groups helped us to understand driving safety issues that mattered to them. Their views helped shape our survey. The facing page reveals some of their experience with driving.

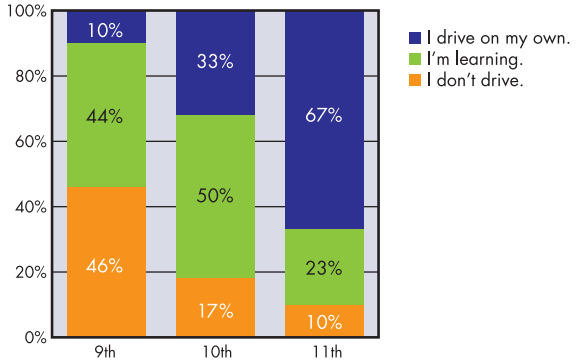
All data described in this report are weighted, meaning that the sample is representative of all 10.6 million U.S. public school students in the ninth through 11th grades. Our sample includes teens who have never driven, are learning to drive, and drive independently. Please see the Study Methods section on page 23 for a more detailed description of the sampling and weighting plan.

Experience with driving



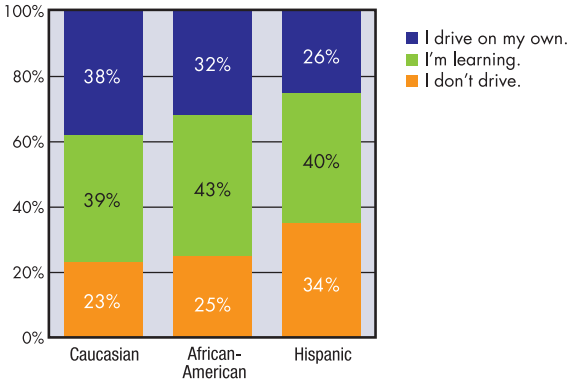
- Three-quarters of surveyed teens who learned or are learning to drive received instruction from their mom, dad, both parents, or stepparents.
- Fifty-six percent of drivers (those learning to drive or who drive on their own) have had at least some type of formal driver education, including classroom-based or behind-the-wheel instruction.
- Thirty-four percent of drivers have had more than one type of instruction.

Driving status by grade



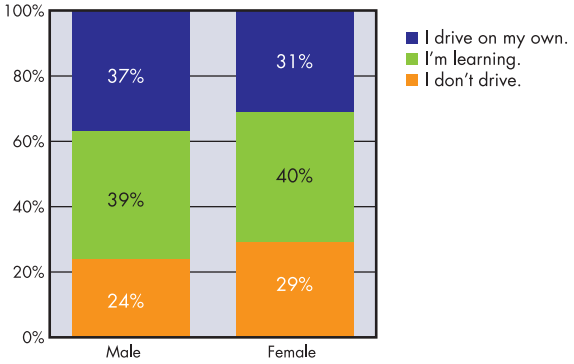
- Nearly three-fourths of ninth through 11th graders are learning to drive or are already driving.
- More than half of ninth graders say they are drivers.
- Two-thirds of 11th graders say they drive on their own, twice the proportion of 10th graders.
- Only 10 percent of 11th graders do not drive.

Driving status by race/ethnicity



- Driving status is similar for Caucasians and African Americans.
- Hispanic teens are less likely to be driving than Caucasian or African-American teens.

Driving status by gender



- Boys tend to learn to drive and receive their licenses at an earlier age than girls.

The Teen Perspective

This landmark study from YDRI informs us that we need to more effectively convey driving safety messages to various teen populations. To reach teens with safety messages viewed as authentic and reliable, adults must first understand how teens perceive safety and risk. Using the Teen-Centered Method, we gave adolescents the opportunity to generate and prioritize ideas, including those researchers may have missed. The method allowed them to share their experiences by describing the factors they believe affect safety and how often they see other teens exhibit these behaviors. Some of their answers provide insight into the teen driving environment and highlight the need for the traffic safety community to develop more effective ways to share crash risk information with teens of all backgrounds.

Distractions can be deadly.

Teens need to keep their focus on the road. Since most teens lack driving experience, anything that lessens that focus can be a dangerous distraction. Of the top 25 factors teens believe affect safety, 17 cause the driver to become distracted. Eleven take the driver's eyes and focus off the road (e.g., text messaging, talking on a cell phone, teen passengers). Of these, five are actions the driver is directly responsible for taking, and six are related to passengers.*

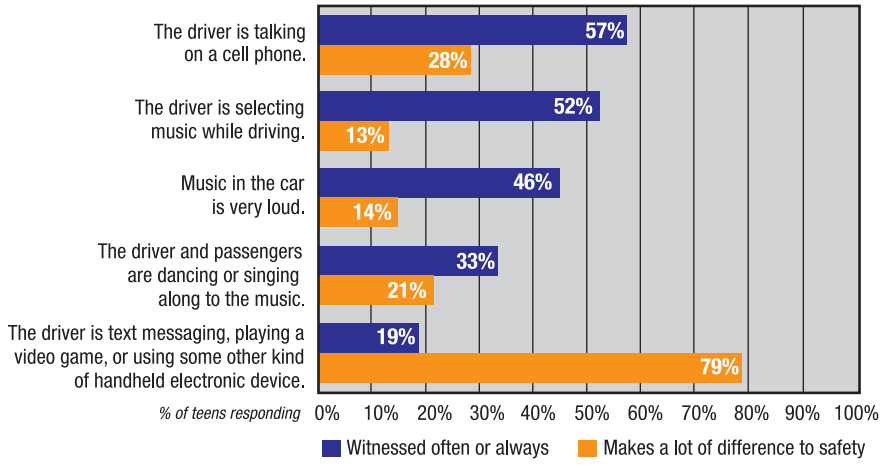
*Dancing or singing along to the music is done by both drivers and passengers.

Six other factors reduce the driver's ability to concentrate on the road (e.g., driving while intoxicated, tired, or highly emotional).

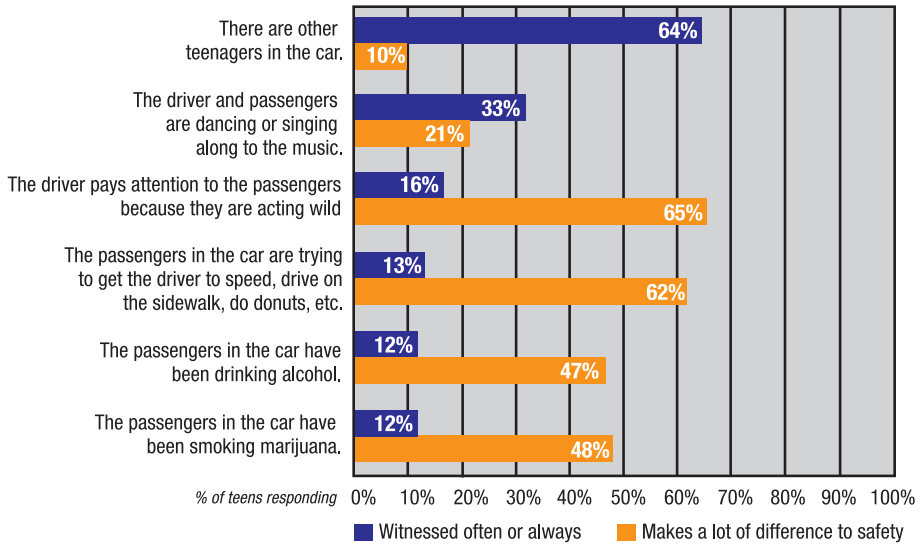
Interestingly, 25 percent of teens report that when parents are passengers in their car, it makes them nervous and serves as a major factor in driving safety. While this may have implications for meaningful practice driving, previous research shows that drivers are at their lowest lifetime crash risk during the supervised learner period.

Source: National Young Driver Survey: Teen Perspective and Experience With Factors that Affect Driving Safety. *Pediatrics*. May 2008.

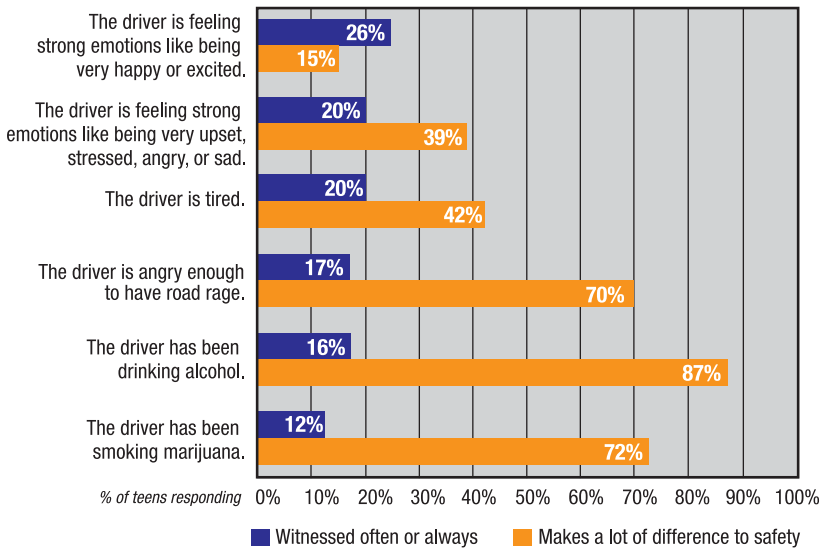
Things drivers do that take their eyes and focus off the road



Things passengers do that take the driver's eyes and focus off the road



Factors that reduce the driver's ability to concentrate on the road



Teens believe some distractions are more dangerous than others.

- Only 10 percent of teens correctly view passengers as potentially hazardous. However, many more do acknowledge that certain passenger behaviors increase risk, such as "acting wild" (65 percent) or encouraging the driver to speed (62 percent).

- While only 28 percent of teens correctly believe that talking on a cell phone while driving makes a major difference to driving safety, the overwhelming majority (79 percent) recognize text messaging while driving as a very dangerous behavior.

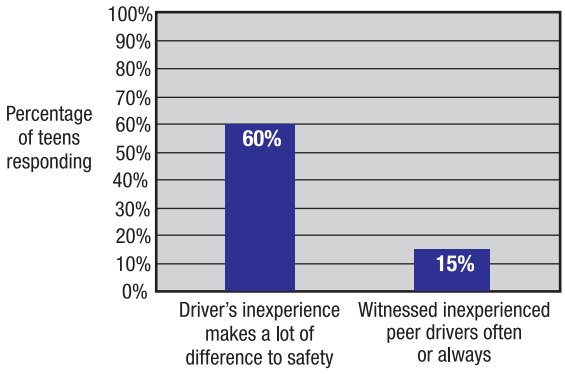
- Most teens (87 percent) understand the danger of driving while intoxicated, but 16 percent still report often seeing this behavior.

After examining these charts, note that some factors teens consider most dangerous (e.g., drinking and driving) are infrequently seen, whereas others perceived as relatively safe (e.g., teen passengers and cell phones) are commonly encountered. Frequent exposure could lead to safety messages seeming less believable when dire predicted consequences are not realized. This may change youths' perceptions of risk. This poses the challenge of creating strategies that acknowledge teens' experience, while also helping them to better judge increased risk.

If we understand teens' misperceptions, we can address them.

The teens revealed a striking lack of awareness of how inexperience among teen drivers affects safety. Although 60 percent believe inexperience heavily influences safety, only 15 percent report exposure to inexperienced drivers (despite the fact that nearly all teenage drivers are inexperienced). To know how to address this knowledge gap, we need to better understand what teens believe merits "experience" and then develop ways to correct any misconceptions. Our qualitative research suggests some teens believe getting a license makes them experienced. We need to first help them understand that the experience needed to become a good driver is gained well beyond licensure and to encourage gaining this experience in the most effective way.

Inexperience and Safety

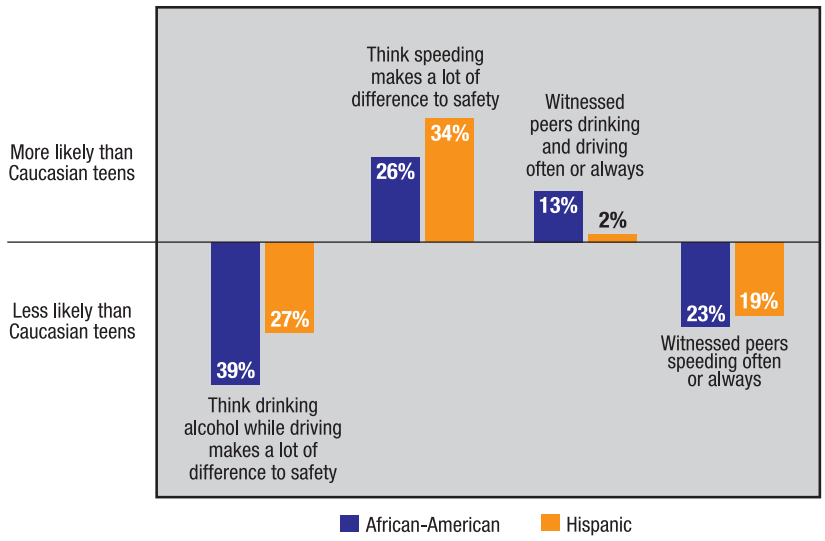


The teens revealed a striking lack of awareness of how inexperience affects teen driver safety.

Public health messages need to be targeted to various teen groups.

Our study found that certain teen populations do not clearly understand the potential danger of certain crash risks, such as speeding and intoxicated driving. This may be because public health messages are not fully resonating with them. This suggests a need to target messages and interventions in a culturally competent way.

Subgroups of teens see risk differently



- On average, teens report rarely seeing their peers drink and drive. However:
  - African-American and Hispanic teens view drinking alcohol while driving as less risky than Caucasian teens.
  - African-American teens are somewhat more likely to report seeing peers drink and drive than Caucasian teens.
- Caucasian teens are less likely to view speeding as hazardous than African-American and Hispanic teens.

Teens offer insights that can guide us to more effectively reach them.

Adolescent input can ensure that programs or interventions resonate with youths. Teens describe a hierarchy of increasing danger for some of the distractions that most concern us. They do not view cell phones as dangerous, but do believe cell phone use that triggers strong emotional responses is particularly dangerous and text messaging is hazardous. They do not view peer passengers as dangerous but do understand that their behaviors can pose varying levels of danger (See graphs on page 7). This suggests that conditions lumped together too casually may decrease the effectiveness of our messages and that we may better reach teenagers by addressing the nuances they perceive. Policymakers, however, must also understand that higher level risks (e.g., passengers acting wild) cannot occur if lower risk conditions are not allowed (e.g., no teen passengers during the first 6 to 12 months of independent driving).

A CALL TO ACTION

- Include teens in policy and program development around driving. Value their wisdom but address their misperceptions regarding driving safety, particularly inexperience.
- Reinforce messages that highlight the dangers of driving while intoxicated and encourage seat belt use. Add new messages about the dangers of driving while talking or texting on a cell phone and other distractions, including other teen passengers.
- Advocate for strong Graduated Driver Licensing (GDL) laws in your state.

Downloadable resources to share with families are available at www.chop.edu/youngdrivers and www.statefarm.com/teendriving.

Parents Really Do Matter

Researchers have long known that parenting style (the parents' approach to raising their teens) has a strong influence on the likelihood of teens avoiding or taking part in risky behaviors, such as smoking or drinking. This paper takes this concept further, adding safe teen driving to the list of health behaviors that parenting style can affect. These findings make a significant contribution to a small but growing body of research linking parenting style and teen driver safety. Parenting style matters, according to teens, and it may even save their lives by lowering crash risk.

Source: Associations Between Parenting Style and Adolescent Driving Safety-Related Behaviors and Attitudes. *Pediatrics*. October 2009.

What the National Young Driver Survey asked.

In order to understand the link between parenting style and driving, the NYDS asked teen respondents to assess their parents according to the following four statements:

- My parents give me help and support when I need it.
- In my family, there are clear rules about what I can and cannot do.
- My parents keep track of where I am when I am not in school and away from home.
- My parents want to know who I am with when I am not in school and away from home.

We divided teens into four groups, based on how they described their parents with regard to monitoring, rule setting, and support. The groups are labeled to be consistent with the literature on parenting style.

Parenting styles: the balance between support and control

INCREASING SUPPORT

The Permissive Parent is highly supportive but makes few rules and trusts rather than monitors.

"I trust you'll do the right thing."

The Authoritative Parent is highly supportive AND closely monitors and sets rules.

"I care, and I'll give you the freedoms you earn; but, for safety-related issues, you'll do as I say."

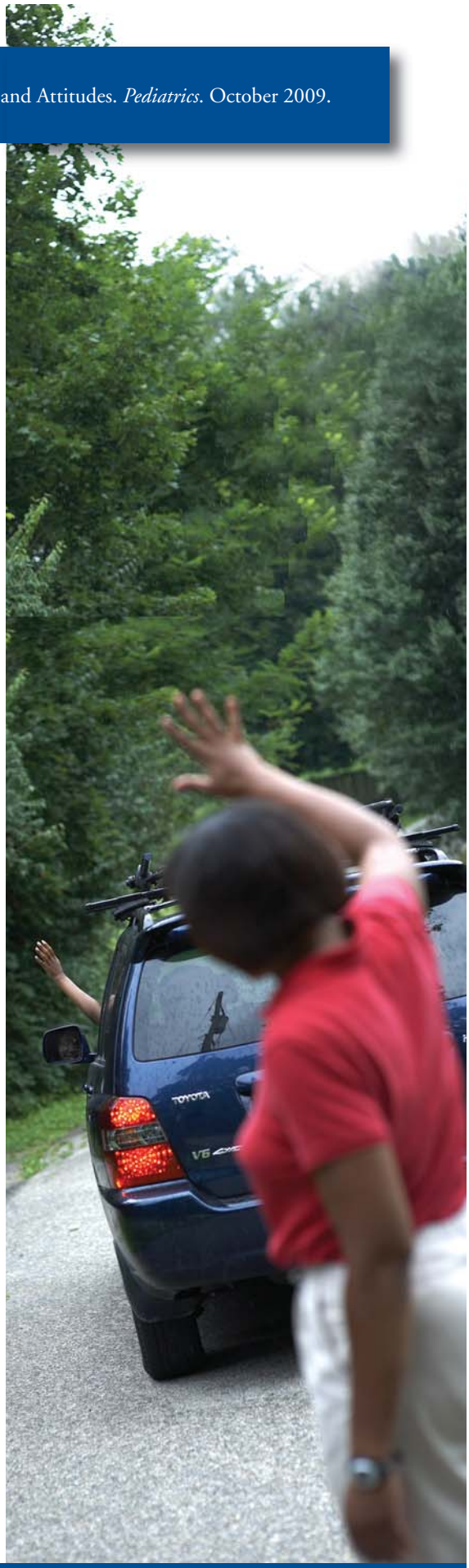
The Uninvolved Parent sets few rules, does not monitor, and offers little active support.

"Kids will be kids — you'll learn from your mistakes."

The Authoritarian Parent sets many rules and closely monitors but offers little support.

"You'll do as I say."

INCREASING CONTROL



What does it mean to be a supportive parent?

"Parental support" can be defined in many ways. A growing body of literature finds that teens who describe their parents as "supportive" are loving and responsive. They can be counted on to be helpful.

New views on parental monitoring

We used to think "monitoring" mainly involved asking questions and watching closely. Now we know that parents are much more likely to know what's going on if teens choose to share this information with them. They must be willing to tell their parents the truth. Teens are much more likely to do this if parents make it clear that rules exist to keep them safe, not to control them.

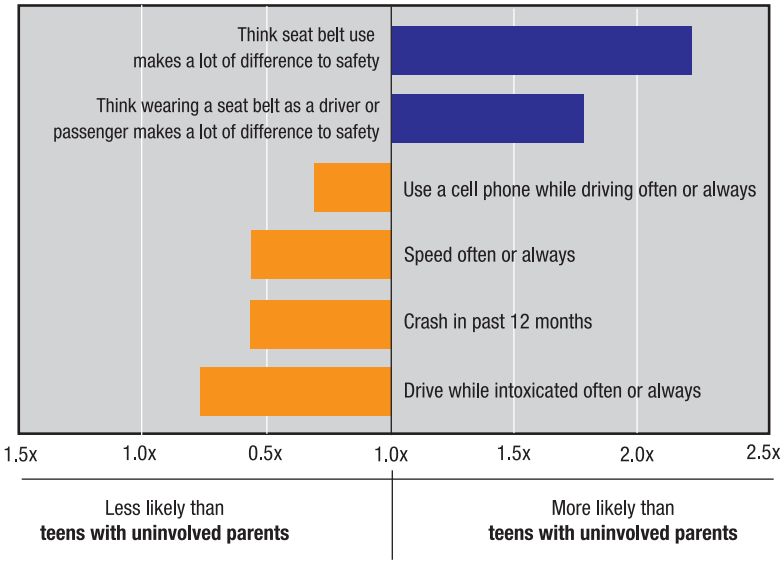
Parenting style can affect teens' crash risk.

Teens who say their parents set rules and monitor where they are going and with whom in a helpful, supportive way are half as likely to be in a crash and 71 percent less likely to drive intoxicated than teens who describe their parents as less involved (offer little support, do not set rules or monitor).

Rules and monitoring matter.

- Teens who say their parents are authoritative or authoritarian are nearly twice as likely to wear a seat belt as a driver or passenger as teens who say their parents are uninvolved.
- These teens are also nearly twice as likely to believe that buckling up affects safety as compared to teens who perceive their parents as uninvolved.
- Teens who report having authoritative or authoritarian parents speed about half as often as teens who view their parents as permissive or uninvolved.

Safety, risk perceptions, and behaviors of teens with authoritative parents



Parents may cut their teen drivers' crash risk in half if they set driving rules and monitor them in a supportive, non-controlling way.

Support alone isn't good enough when it comes to driving safety. Teens need rules and follow-through.

Teens who describe their parents as permissive do not significantly differ in crash risk or safety belt use from those teens who view their parents as uninvolved.

Parents who monitor and set appropriate rules in a supportive way protect their teens.

Authoritarian parents do provide a protective effect on safety. But authoritative parents have a significantly higher effect on safety.

It's about safety, not control.

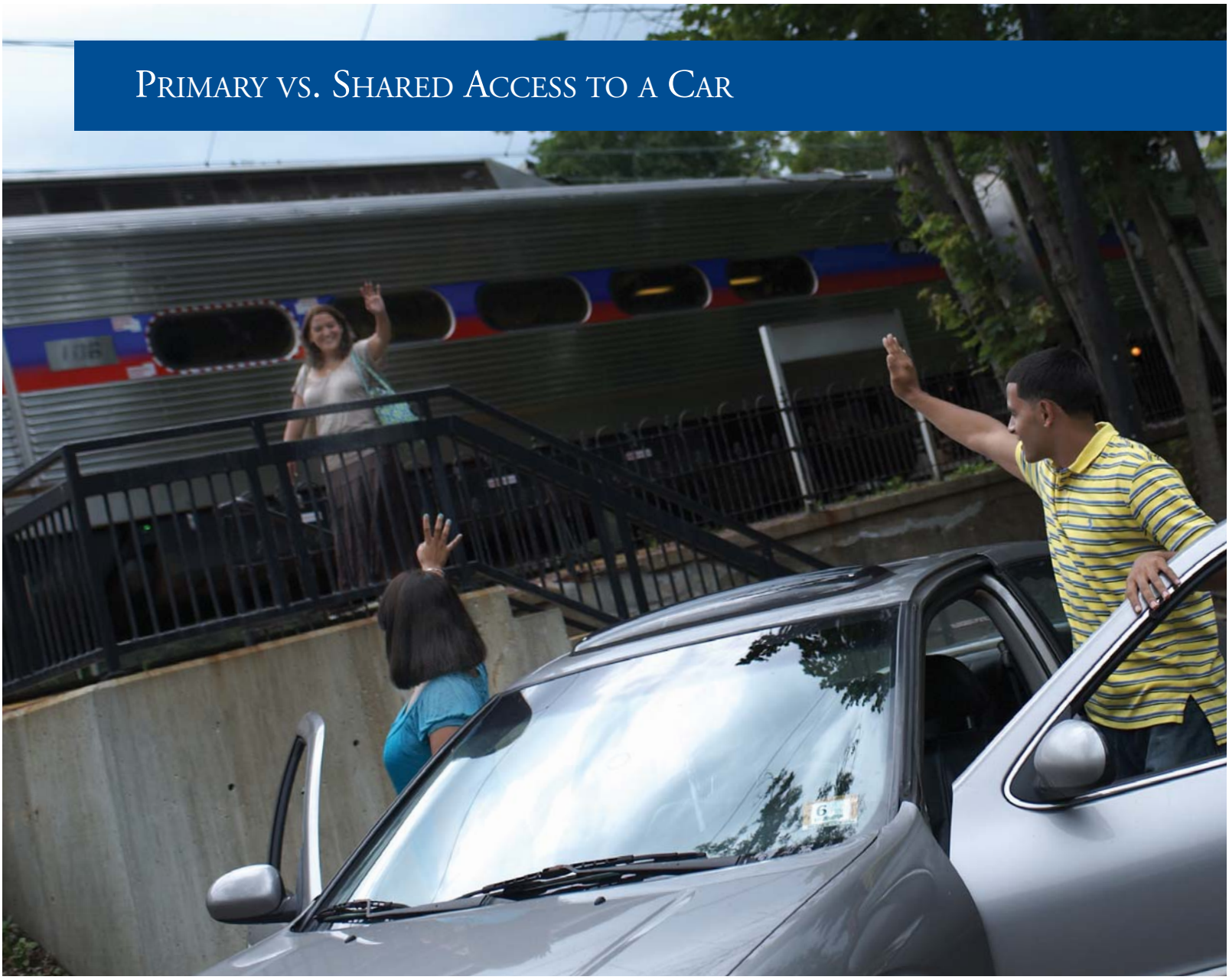
Setting and enforcing rules and monitoring teens' driving habits are most effective in reducing crash risk when teens understand that these limits are in place because their parents care about them and want them to be safe.

A CALL TO ACTION

- Help parents understand the importance of providing teens with lots of varied and supervised practice while learning to drive and careful monitoring for the first year after licensure.
- Work with parents to help them set limits with teen drivers during their first year behind the wheel and to gradually introduce new privileges as they are earned.
- Encourage parents to be role models and to be supportive, yet firm, with their teens.

Downloadable resources to share with families are available at www.chop.edu/youngdrivers and www.statefarm.com/teendriving.

Primary vs. Shared Access to a Car



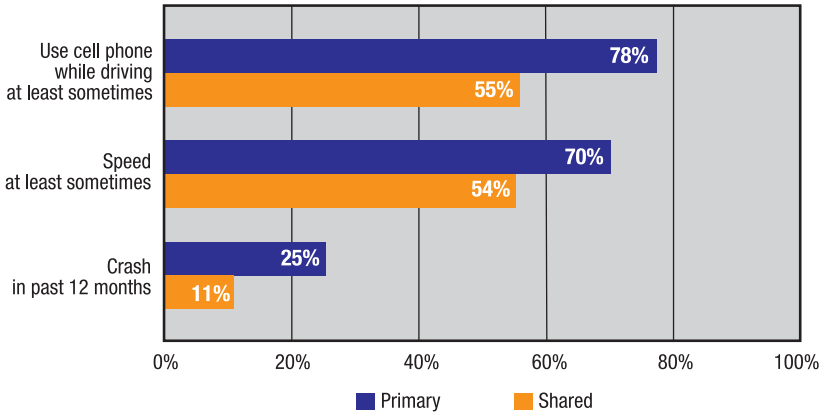
In this study we looked at a key decision faced by families: When considering safety issues, should teens be the main driver of a vehicle or should they share a car with other family members? We wanted to explore the impact of this decision on risky driving behavior and crashes.

- Primary access is defined as being the "main driver" of a vehicle rather than sharing a vehicle with other family members.
- Nearly three of every four teens in the U.S. (2.2 million ninth to 11th graders) have primary access to a vehicle.
- Teens with primary access drive more than teens with shared access, an average of 6.6 hours (an estimated 200 miles per week), compared to 4.3 hours (an estimated 130 miles per week).

The majority of teens with primary access to vehicles are A/B students and hold down jobs.

Source: Primary Versus Shared Access to Vehicles and Its Association With Risky Teen Driving Behavior and Crashes: A National Perspective. *Pediatrics*. October 2009.

Risk factors for teens based on access to a vehicle*



*Model controlled for amount of hours driven per week.

Teen drivers with primary access to a vehicle are more likely to use cell phones while driving and to speed than their peers who share a car. These are two known factors that make crashes more likely.

Teens with primary access to a vehicle are more than twice as likely to report having been in a crash than those who share a car.

No difference could be detected between teens with primary vs. shared access to a vehicle with regard to alcohol use while driving and seat belt use.

When compared to teens who share vehicles, those with primary access are more likely to speed and use cell phones, which explains, in part, why they are twice as likely to crash.

Closer Monitoring

When teens have to share a car, they have to ask to use it. This request for the car naturally leads to an opportunity for parents to monitor their teens' driving. When teens are the main drivers of vehicles, it may lead to less monitoring by parents. Also, teen drivers with primary access to a vehicle may become the neighborhood chauffeur. Transporting peer passengers is a common factor associated with teen crashes.

A CALL TO ACTION

- Encourage parents to control the keys. Limiting how much a teen drives is one way parents can affect a major crash factor. A teen with easy access to the keys is more than twice as likely to crash as a teen who shares a car with family members.

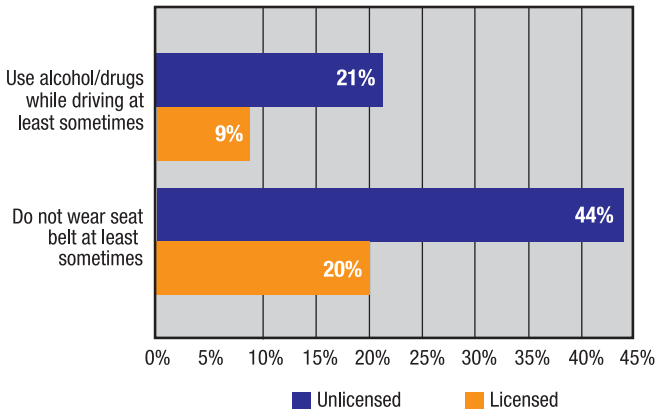
Downloadable resources to share with families are available at www.chop.edu/youngdrivers and www.statefarm.com/teendriving.

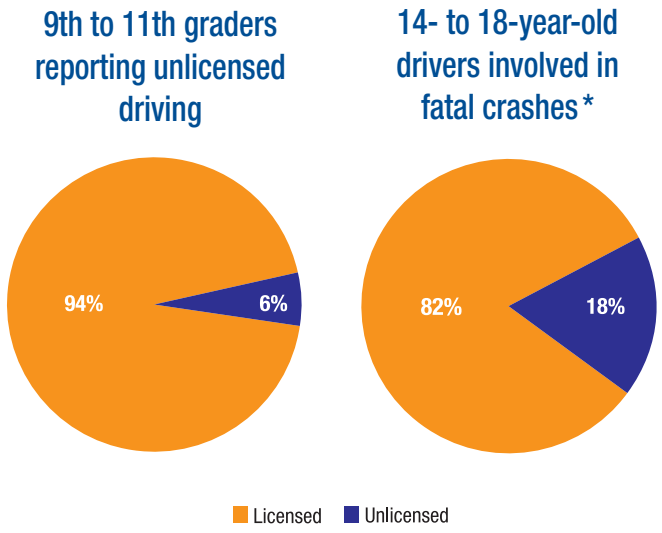
Who's Driving Without a License?

Source: Unlicensed Teen Drivers: Who Are They and How Do They Behave When Behind the Wheel? *Pediatrics*. November 2008.

Unlicensed teen drivers engage in more unsafe driving behaviors than licensed teen drivers. There are behaviors known to raise the risk of crashing, such as driving under the influence of alcohol or drugs and driving while drowsy. Other behaviors, such as not wearing seat belts or speeding, are known to increase the likelihood of injury or death if a crash occurs. The NYDS revealed that unlicensed teen drivers are more likely to drive under the influence of alcohol or drugs (raising their risk of crashing) and significantly less likely to wear seat belts (raising their risk of injury or death).

Risky driving behaviors based on licensure





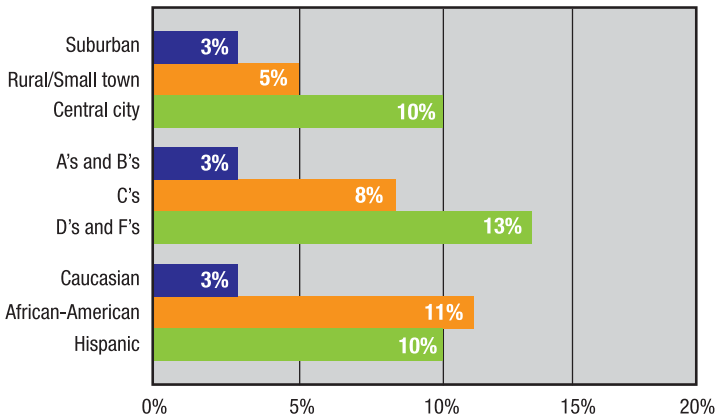
Data from the Fatality Analysis Reporting System (FARS, 2006), operated by the National Highway and Traffic Safety Administration

- Unlicensed teen drivers are overrepresented in fatal crashes.
- While 6 percent of ninth to 11th graders report unlicensed driving in our survey, 18 percent of 14- to 18-year-old drivers involved in fatal crashes in 2006 did not have a valid license.

Unlicensed driving demographics

African-American or Hispanic teens, those living in central cities or rural districts, and those reporting lower grades in school are more likely to report unlicensed driving. This group may represent a diverse population: high-risk drivers, as well as those needing to drive but unable to obtain or maintain licensure, possibly due to socioeconomic reasons.

Subgroups of teens reporting unlicensed driving



The licensure process provides an opportunity to promote safety.

Why does getting a license matter?

The licensure process provides an opportunity to promote safety. We need to develop effective outreach programs that guide all teens successfully through the licensure process. While a license itself does not offer enhanced safety, the licensure process may be protective if it exposes teens and their parents to Graduated Driver Licensing (GDL) laws and practices, as well as to a more systematic learning-to-drive process.

What keeps a teen from getting a license?

While this study began to quantify the problem and impact associated with unlicensed teen drivers, further research is needed to better understand barriers to licensing, both related and not related to driving, and ways to get all teen drivers into the licensing system. In particular, policies that impose fines for infractions should be reassessed. All teens should be able to learn how to become safe drivers regardless of their ability to pay.

Addressing the issue

Future research and outreach directed at teens from central city and rural areas may help us lower their crash injury and fatality risk. We need to better understand the barriers teens face in obtaining a license to develop effective interventions that promote safe driving.

A CALL TO ACTION

- Include teen driver safety as an important part of high school health curricula. Educators should steer students and parents towards the formal licensing process and provide information about the required amount of behind-the-wheel practice and the dangers of unlicensed driving.

- State and local agencies should explore issues in license suspension policies that make it difficult for some groups of teens to obtain a license and legally drive and then address them.

- Clinicians should consider screening for unlicensed driving when discussing health risk factors with adolescents. If identified, clinicians should counsel teens and their families about the importance of GDL and address unsafe driving behaviors.

Downloadable resources to share with families are available at www.chop.edu/youngdrivers and www.statefarm.com/teendriving.

Because this paper determined the prevalence and associated risk factors for unlicensed driving among ninth through 11th graders, it provides important information for the teen driver safety research and outreach community. Knowing who is driving unlicensed is the first step in preventing this unsafe practice in the future. The second step is developing effective interventions to reach this population of young drivers and those who influence them.

Other YDRI Findings

Knowing the risks can help parents and teens make smart decisions about which rides

■ The three biggest factors contributing to older child passengers dying in a crash are riding with a driver younger than age 16, not wearing seat belts, and riding on high speed roads.

■ Of the nearly 10,000 child passenger deaths (ages 12 to 17) studied by YDRI researchers, more than half (54.4 percent) were riding with a driver under age 20, nearly two-thirds were unrestrained, and more than three-quarters occurred on roads with posted speed limits above 45 m.p.h.

■ Passengers ages 12 to 17 are more likely to die in a car crash than younger children. This risk increases with each teenage year.

■ There's a clear tipping point that occurs between ages 12 and 14, when child passengers became much more likely to die in a crash than their younger counterparts.

Risk Factors for Death Among Older Children and Teenage Motor Vehicle Passengers. *Archives of Pediatric and Adolescent Medicine.* March 2008.

■ Teen drivers who currently smoke are more than twice as likely to have had a crash as nonsmokers, even after controlling for gender, race, ethnicity, income, length of licensure, and geography.

■ The connection between smoking and crash risk is not well understood, particularly involving young people. More research is needed to determine smoking's role for future teen driver safety intervention efforts.

■ When compared to drivers who sleep eight or more hours per night, those who sleep less are about one-third more likely to have been in a crash. Moreover, those who often drive alone while drowsy are one-third more likely to have been involved in a crash.

Teen Driver Crash Risk and Associations with Smoking and Drowsy Driving. *Accident Analysis and Prevention.* February 2008.

■ The words "good" and "safe," frequently used in public health messaging for teen driving, may not have the intended meaning. It's not that teens don't hear the messages; instead, they interpret them through different cultural filters. We need to better understand these filters in order to develop effective public health messages for teen driving.

■ Words matter. Injury prevention specialists argue for the importance of word choice in developing teen driver safety messages. Innovative research methods enable researchers to describe some of the differences among word choices.

■ The teen sample far more strongly associated seat belt use with a "safe driver" rather than a "good driver."

Teen Perceptions of Good Drivers and Safe Drivers: Implications for Reaching Adolescents. *Injury Prevention.* February 2009.

A CALL TO ACTION

■ Promote safe teen passenger behavior. Go to **ridelikeafriend.com** and **www.statefarm.com/teendriving** for more information and to spread the word to teens and parents.

are safe and which rides are not.

A Look at Our Teen Sample

All data described in this report are weighted, meaning that the sample is representative of all U.S. public school students in the ninth through 11th grades, representing 10.6 million students. Our sample includes teens who are learning to drive and those who have been driving independently for several years, as well as those who have never driven and may be several years away from driving on their own.

Please see the Study Methods section on page 23 for a more detailed description of the sampling and weighting plan.

	CHARACTERISTIC	PERCENT
GENDER	Male	51%
	Female	49%
RACE/ ETHNICITY	African-American	16%
	Hispanic	16%
	Caucasian	62%
	Other	6%
GRADE	9	38%
	10	33%
	11	29%
AGE	14 and younger	13%
	15	34%
	16	31%
	17	18%
	18 and older	4%

Study Methods

The goal of the National Young Driver Survey was to learn more about teens' views on what is important to keep them safe in cars. It is part of The Children's Hospital of Philadelphia and State Farm's Young Driver Research Initiative, created to develop effective interventions that can be implemented nationally to help save young lives.

■ Survey Creation – Forty-five focus groups involving nearly 300 students were conducted among diverse populations across the country. The purpose of the focus groups was to hear teens' thoughts about the factors that make a difference in whether teens are safe in cars, and to ask them to prioritize the issues they raised. This unique student viewpoint formed the core of questions in the survey. Simultaneously, additional survey content was created based on an extensive literature review and input from an international panel of experts. Whenever possible, topics based on expert recommendations or the literature review were included as previously validated survey items. Items from the students, on the other hand, were included in their own words to ensure that their true meaning was preserved. The survey was designed as a paper-and-pencil questionnaire to be completed in less than one class period by students with an eighth-grade reading level, and responses were recorded on an optically scannable answer sheet. The survey was pilot-tested in diverse schools in Illinois and Pennsylvania prior to the national launch.

■ Study Sample – Students in public schools in grades nine through 11 were asked to participate in the survey. These grades were selected to include students who had reached the age by which many students begin to drive, as well as those students approaching that age. A nationally representative two-stage sample of schools and students was drawn. At the first stage, all public schools in the country were stratified into urban and rural categories. Schools were defined as urban if the ZIP code in which they were located was at least as urbanized as the median ZIP code in the U.S.; otherwise they were defined as rural. A stratified random sample of 120 schools was selected. Of these schools, 68 participated.

The second stage of sampling consisted of randomly choosing one ninth-grade class, two 10th-grade classes and one 11th-grade class within participating schools. Tenth-graders were over-sampled to provide more information about early drivers, as many students either begin their driving experience or substantially increase it in this grade.

A total of 5,665 students participated in the survey conducted in Spring 2006, yielding an overall student participation rate of 85 percent. When including the participation rates of both schools and the students, the overall response rate was calculated at 48 percent. When the data are weighted, the sample is representative of all 10.6 million public school students in ninth through 11th grades. Class size averaged 21 students.

■ Survey Administration – This study would not have been possible without the participation of dozens of schools and the help of their teachers across the country who administered the survey. Standardized survey administration procedures, based on those used for the Centers for Disease Control and Prevention's Youth Risk Behavior Surveillance Survey, were designed to protect student privacy and allow for anonymous participation. These procedures were followed at each school and in each participating classroom. Research indicates that when students know that procedures are in place to protect their privacy and to allow for anonymous participation, data of this nature can be gathered as reliably from adolescents as from adults. Internal analytical checks demonstrated strong reliability and face validity of the data collected. The survey and all associated procedures received approval from the Institutional Review Boards (IRB) of both The Children's Hospital of Philadelphia and ORC Macro, the survey research firm that conducted the survey. An IRB is an oversight group that makes sure the rights and welfare of research participants are protected.

■ Survey Analysis – All survey analyses were conducted at The Children's Hospital of Philadelphia after survey data were weighted to adjust for the variable probabilities of selection and differential nonresponse, which considered gender, race/ethnicity, and grade. The sampling weights were first computed as the reciprocal of the probability of selection for students. According to design, sampling weights were approximately equal for all students in a grade in a given stratum (rural or urban). All analyses were conducted using SPSS 14.0 for Windows (SPSS Inc., Chicago, Ill.); frequency percentages were rounded to the nearest whole number.

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To Learn More

Downloadable resources are available at www.chop.edu/youngdrivers and www.statefarm.com/teendriving.

Please share this information with colleagues, parents, educators, and others to help keep teens safe on the road.
For more information, please contact us at youngdrivers@email.chop.edu or betterteendriving.com.

Fact Sheets

- Developing Driving Experience
- Driving Lesson Timeline: A Coaching Guide for Parents
- Driving Practice Log
- Graduated Driver Licensing (GDL)
- Parenting Tips to Keep Teen Drivers Safe
- Risk Factors
- Set House Rules and Reduce Crash Risks for Your Teen
- Teach Your Teen to Be a Smart Passenger

Reports

- Driving: Through the Eyes of Teens
- Driving Through the Eyes of Teens, *A Closer Look*

Initiatives

- Project Ignition (www.sfprojectignition.com) is a grant program sponsored by State Farm and coordinated by the National Youth Leadership Council that uses service-learning to help address teen driver safety issues.

- National Teen Driver Safety Week, which takes place the third week of October, was established by Congress in 2007 to focus attention on the nation's epidemic of teen car crashes and to find solutions to lower teen drivers' fatal crash risk. It's supported by the Young Driver Research Initiative (YDRI), an alliance between The Children's Hospital of Philadelphia (CHOP) and State Farm Insurance Companies®.

- Ride Like A Friend/Drive Like You Care

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