



## The Effect of Passengers on Teen Driver Behavior

A number of studies have shown that passengers substantially increase the risk of crashes for young, novice drivers. This increased risk may result from distractions that young passengers create for drivers. Alternatively, the presence of passengers may increase the likelihood of teenage drivers engaging in explicitly risky behaviors, for example, by actively encouraging the drivers to take risks. A better understanding of the nature of passengers' influence on teenage driving will help develop strategies to reduce young drivers' increased crash risks.

The National Highway Traffic Safety Administration analyzed data collected through an earlier naturalistic driving study (Goodwin, Foss, Margolis, & Waller, 2010). Over a six-month study period, event-based data recorders collected 24,085 driving clips, of which 4,466 were selected for analysis. Each clip included video, audio, and accelerometer data from a 20-second segment of driving. The coding system used to analyze the clips included detailed information about the vehicle occupants, and a number of verbal and nonverbal driving behaviors potentially related to the presence of passengers. The sample included 52 drivers: 38 newly licensed teens and 14 high-school-age siblings.

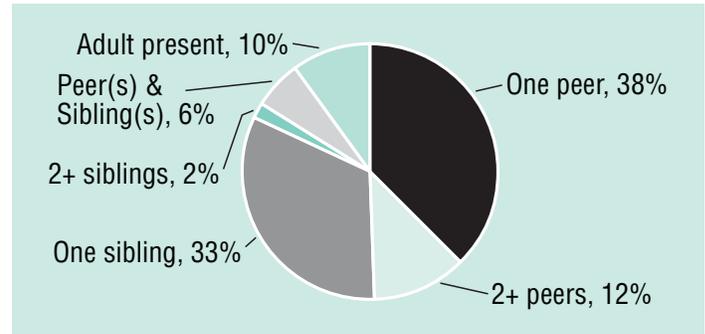
### Frequency and Types of Passengers

Teens drove alone in two-thirds (65%) of all clips. Teenage peers were the most commonly carried passengers, present in 20% of clips. Siblings were present in 15% of clips, and parents or other adults were present in just 3% of clips. Males were more likely than females to carry multiple passengers.

### Potentially Risky Driving Behaviors

Nine potentially risky driving behaviors were examined in the driving clips—speeding faster than other moving vehicles, speeding too fast for the situation, following too closely, failure to yield, weaving, erratic driving, risky maneuver, goofing or showing off, and racing. The frequency of individual risky behaviors was low. In total, teen drivers engaged in at least one of the potentially risky driving behaviors in 7.2% of all clips. Males did so more often than females (9.0% versus 6.5%).

**Figure 1: Distribution of Passengers When a Passenger Was Present**



**Table 1: Association of Potentially Risky Driving Behaviors And Passenger Combinations**

Passenger combination	% of clips with at least one risky driving behavior	Odds ratio (95% CI)
No passengers	5.7%	1.00 (reference)
One teenage peer	13.0%	2.48 (1.61, 3.84)
Two or more teenage peers	15.5%	3.05 (1.98, 4.49)
One sibling	6.9%	1.24 (0.86, 1.79)
Two or more siblings	8.3%	1.51 (0.69, 3.31)
Teenage peer(s) & Sibling(s)	8.5%	1.55 (1.01, 2.41)
Parent or other adult present	5.5%	0.92 (0.42, 2.04)

### Passengers and Risk-Taking

As shown above, a teenage driver was two-and-a-half times more likely to engage in one or more potentially risky behaviors when driving with one teenage peer compared to when driving alone. When driving with multiple teenage peers, the likelihood increased to three times (15.5% of clips). However, passengers encouraged the teenage driver to take risks in only 1% of clips. In most of these cases, the "risky" suggestion by the passenger was related to speed (e.g., "Gun it!"). The low occurrence of passengers actively encouraging the teenage driver to take risks suggests the mere presence of peers may have been more influential on the frequency of risky driving behaviors.

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## Passengers and Distractions

Several distractions for teen drivers were more common in the presence of peers. In comparison to driving with a parent/adult, loud conversation was 5 times more likely and horseplay was 9 times more likely with multiple teenage peers in the vehicle. However, some potential distractions were less common in the presence of teenage peers, such as loud, potentially distracting music and electronic device use by drivers.

## Helpful Comments by Passengers

Helpful statements on the part of passengers were 10 times more common than statements encouraging risk-taking behavior. Teenage peers assisted the driver in approximately 12% of clips, usually by helping the driver to navigate, but occasionally by pointing out potential hazards or giving warnings.

## Passenger Comments on “Bad” Behavior

Teenage peers commented negatively on the driver’s behavior in about 8% of clips. There were many more instances of passengers assisting the driver—or admonishing the driver for “bad” behavior—than actively encouraging the driver to do something risky. Although teenage peers may have created or increased certain types of potential distractions for drivers such as loud conversation and horseplay, they also appeared to decrease potential distractions in other ways by trying to be helpful and commenting on “bad” behaviors.

## Violations of License Restrictions

Overall, teens generally complied with the one-passenger restriction. Violations were observed in just 7% of clips. Although most teens did violate the passenger restriction at some point, a sizeable proportion of the sample—about 30%—virtually never violated the restriction. Violations of the 9 p.m. night restriction were also infrequent (7% of clips). However, nighttime violations were 3 times more common when teens were carrying multiple teenage peers than when they were driving alone.

## Difference Between Teenage Peers and Siblings

Although most States now have restrictions limiting the number of passengers a young driver may carry, most

allow newly licensed drivers to carry family members. It is unclear whether this exemption affects the safety of young drivers and their siblings. In general, the presence of siblings was unrelated to most of the driver-and-passenger behaviors examined. For example, teen drivers were no more or less likely to engage in risky driving behaviors when carrying siblings than when driving alone. When teens transported both siblings and peers, however, loud conversation and horseplay were more prevalent than when teens were carrying parents or adults. These findings suggest exemptions for siblings from passenger restrictions may have little overall effect on teen driving behaviors.

## Limitations

This study had several limitations. First, teens may have changed their driving behavior because of the presence of the data recorder. Second, the sample was small, included a disproportionate percent of females, and was overrepresented by families with higher-level educations and higher incomes. These sample characteristics suggest caution in generalizing the findings to teenage drivers broadly.

## Conclusions

Risky driving behaviors by teenage drivers were more common in the presence of teenage peers. However, some of the mechanisms commonly thought to explain the increased crash risk when carrying passengers were rare, such as instances of deliberate encouragement for the driver to take risks. Several potential distractions were common when teenage peers were present, including loud conversation and horseplay. Other distractions, such as electronic device use, were less common in the presence of passengers. Siblings appeared to have little effect on the behavior of teen drivers.

## How to Order

Download a copy of *The Effect of Passengers on Teen Driver Behavior* (56 pages), prepared by TransAnalytics, LLC, and the University of North Carolina Highway Safety Research Center, from [www.nhtsa.gov/staticfiles/nti/pdf/811540.pdf](http://www.nhtsa.gov/staticfiles/nti/pdf/811540.pdf).



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