

Study: Driving While Tired a Leading Cause of Traffic Accidents



A new study not only confirms that fatigue is a factor in traffic accidents but also demonstrates that it's a bigger factor than previously thought, even in daytime crashes.

The driving study conducted by the Virginia Tech Transportation Institute's Center for Vulnerable Road User Safety found that fatigue is a cause of 20% of crashes, rather than the 2-3% previously estimated based on surveys, simulator studies and test tracks.

The study originally recruited 100 drivers who commuted into or out of the Northern Virginia/Washington, DC, metropolitan area to have their vehicles instrumented or receive a leased vehicle instrumented for the study. Because other family members and friends occasionally drove these vehicles, the study collected data on 132 additional drivers.

The data acquisition system used in the study was developed by Institute engineers and included five video channels, forward and rearward forward radar units, accelerometers, lane tracking software and an in-vehicle network sensor. The cameras were mounted unobtrusively in order to facilitate naturalistic driving behavior.

Researchers viewed more than 110,000 events in order to validate 10,548 events, including:

- 82 crashes, including 13 where the data was incomplete;
- 761 near crashes;
- 8,295 incidents, such as braking hard for slowing or stopped traffic; and
- 1,423 non-conflict events, such as running a stop light with no traffic present.

In addition, they viewed 20,000 randomly selected six-second segments of video, noting incidents of moderate to severe driver fatigue, which provided an estimate of the amount of time drivers were fatigued but not involved in a crash or near-crash.

The total number of subjects who were involved in fatigue-related crashes and near-crashes was 38, with 11 drivers accounting for 58% of all such events.

In 20% of all crashes and 16% of all near crashes, the driver showed signs of fatigue, such as eye-lid closure, head bobbing, severe loss of facial musculature and micro sleep (i.e., when your eyes drift shut and then pop open).

One surprising finding from the study was that there were significantly more crashes/near crashes due to fatigue during the day than at night.

Applying the findings to the population at-large, the results suggest that drivers are at a four times greater risk of a crash or near-crash if they choose to drive while fatigued.

One way to prevent drowsy driving by workers is through a fatigue risk management system, including a Model Fatigue Management Policy. You can also give workers this Model Notice on recognizing the signs of fatigue.