

PROGRESS REPORT

MULTIPLE JOBS, LONG HOURS IMPLICATED IN SLEEP CRASHES

Get much sleep last night? Been awake long? Do you work more than one job? If you answered "no, yes, and yes," you're at high risk for having a drowsy driving crash. A new study by the AAA Foundation for Traffic Safety isolates the factors associated with drivers who fall asleep behind the wheel. "It's the first time we've looked at what actually happens on the road instead of what happens in the lab," says AAA Foundation president David Willis.

The study, *Why Do People have Drowsy Driving Crashes? Input from Drivers Who Just Did*, was conducted by Jane C. Stutts, Jean W. Wilkins, and Bradley V. Vaughn at the University of North Carolina Highway Safety Research Center. Researchers identified four different groups: drivers who fell asleep and crashed, drivers who crashed because they were drowsy, drivers who crashed for some other reason, and drivers who had not had a crash in the past three years. Stutts's team interviewed more than 1,400 drivers over 18 about their sleep and driving habits.

Interviewers focused on seven basic factors: awareness of driving hazards; work/sleep schedules; quality of sleep; Epworth sleepiness scale (a series of questions that measure of how likely a person is to fall asleep); how many hours the driver spent behind the wheel; use of countermeasures; and circumstances surrounding the crash.

What the researchers found was that work and sleep schedules are associated with the risk of having a drowsy driving crash. Drivers who fell asleep behind the wheel were far more likely to work at more than one job, to work irregular hours (including night shifts), and to work more than 60 hours a week. They also were more likely to have had less than six hours of sleep the night before the crash and to have been awake for 20 hours.

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TOWN PUTS KIDS IN HELMETS

What do you do with a broken bike helmet? Show it to other bikers. "When I do educational stuff I bring a helmet with me and show them," says Brian Davis, the Community/School Liaison Officer for East Grand Rapids, Michigan, a town of about 10,000. Davis has a shelf of damaged helmets donated by families whose children were wearing the headgear when they fell. "I've had at least six cases of kids walking through the door with cracked helmets saying 'Thank you!'"

East Grand Rapids is a small town, Davis says, about 4 square miles, and because distances are short a lot of children bike to school. When they bike, nearly all the children wear helmets — because it's the law. In 1994 Connie Mattice, a trauma nurse coordinator, convinced the town council to pass the ordinance as part of a four-phase program involving legislation, enforcement, education, and incentives. "The idea came from the director of public safety, Peter Gallagher," Davis says. "We had head injuries, and we know that's a big problem with kids."

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Officer Brian Davis, community safety liaison, rewards helmet-wearing cyclist Joey Bartman with a "ticket" for free ice cream.

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SLEEP CRASSESS (continued)



Nearly all the drivers said they knew drowsy driving is a highway danger, ranking it just below drunk driving and about the same as aggressive driving. However, the drivers who had crashed were more likely to wait until they were on the road to deal with the problem, instead of planning ahead and getting enough sleep.

Perhaps most alarmingly, half of the drowsy drivers did not feel particularly sleepy in the few minutes before they crashed. "Drivers need to become more aware of signs they might fall asleep," Willis says.

KIDS IN HELMETS (continued)

The legislative phase involved convincing the council to mandate helmet use for riders under 18. "The legislation passed with a lot of support," Davis says. It took some time to get through, but since then "we have had absolutely no complaints about this." Enforcement involves a three-strikes system: Children get tickets for riding without a helmet. The first two offenses result only in parental notification. But the third citation in a year results in a fine of up to \$50. "Since the beginning of the program we've only had two, maybe three full citations," Davis reports.

To educate children about the ordinance Davis visits schools and explains to children how important it is to use a helmet. Finally, to give the kids an incentive to wear their helmets, police officers "ticket" helmet wearers with coupons good for a free ice cream cone at a local shop. "We have summer interns who help enforce the helmet program and hand out coupons," he says; they give out nearly 2,000 cone coupons per year.

Does the program work? "It's helping parents ensure their kids wear their helmets," Davis says. "Usually the kid goes out the garage door with their helmet on, they go down the street and it's off." Because of the program, kids' helmets are on when it counts — during a crash.

For more information about the East Grand Rapids program, contact Officer Davis at <pseg41@iserv.net>.

CELL CONVERSATION DELAYS BRAKING

A recent study shows that talking on a cell phone, and probably use of any voice-activated gadget, delays braking and could contribute to rear-end crashes. The study, conducted by Dave Lamble, Tatu Karanen, Matti Laaakso, and Heikki Summala at the University of Helsinki in Finland, tested the brake reaction times of drivers under three conditions: driving, driving while dialing a keypad, and driving while performing a cognitive task — in this case performing mental addition and telling a researcher the answer.

The study used a real-life situation, in which 19 drivers between 20 and 29 years old operated vehicles on actual roadways. (The test vehicles were equipped with dual passenger-side controls.) Drivers followed a lead car while they were performing the tasks; sensors measured how long it took them to hit the brakes when the car ahead slowed down.

Dialing and talking to the researcher both caused about a half-second delay in brake reaction time — which doesn't sound like much, except that it's 25 percent of the suggested following distance and plenty enough delay to cause a crash. And as the authors observed, these were drivers in a best-case scenario — they knew they would be expected to brake. The researchers suggested that drivers in real life probably experience even greater delays in reaction time.

The authors concluded that "neither a hands-free option nor a voice-controlled interface

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removes the problem of driver performance impairment when using a mobile phone in the car." What is needed, the authors say, is better education so drivers will be aware of the risks of using a car phone. The authors also pointed out that automakers are beginning to advertise voice-activated controls for e-mail and other services. Since the problem seems to be divided driver attention rather than looking away from the road, these features can also be expected to slow drivers' responses.

CLUB RECYCLES PROGRESS REPORT

"I can always use fresh material," says Chuck Mai, Managing Director of Public and Government Relations for AAA Oklahoma. Mai uses items from the Progress Report in his column for the Daily Oklahoman in Oklahoma City.

He's been writing the monthly column for about four years now. "They began a community section and I noticed they had a column in there by a doctor," Mai says. "I made some overtures with the idea that this could be a opportunity for AAA." Mai's column was originally called "Staying on the Road" but recently changed to "Getting There" so Mai could cover all modes of transportation, including airline issues and cruise ships.

"I try to begin with an incident from my personal experience or something that was in the news," Mai says. "For example, a woman was in a bad crash and a county commissioner was quoted as saying 'If she had been wearing her seat belt she would have been killed.' So that gave me the opportunity to write about how important it is to wear a seat belt." Another time, Mai's four-year-old son said, "Look, that car is smiling!" Mai then wrote about child safety and how preschool kids think cars can see them.

"Most newspapers are very willing to entertain consideration of outside sources for columns," Mai says. "It's a community service on the part of the newspaper. It helps that we are a not-for-profit organization and we are looking out for the little guy, the consumer." Mai encourages anyone to contact their local paper about writing a column; he's also considering contributing to the weekly newspapers and to a radio show.

Mai says, "I hope readers will pass columns along to family members or co-workers who are the risk takers." With that in mind, Mai writes each column with a dash of humor. "It makes for

better conversation if someone can say 'I read something funny this morning,' rather than 'I read something really tragic.'"

AAA MICHIGAN PROGRAM PREVENTS CRASHES, ONE INTERSECTION AT A TIME

Traffic safety people talk about the "three E's" — engineering, education, and enforcement. By focusing on the first E, AAA Michigan has used relative inexpensive to dramatically cut crashes at problem intersections.

"It started from a conversation with our former CEO Ron Steffens and Dennis Archer, the mayor of Detroit," explains David Feber, Transportation Engineering Manager for AAA Michigan. "Mayor Archer complained that insurance rates were far too high in the city of Detroit; we looked at the data and agreed." Detroit's crash rates were double those in the rest of southeast Michigan, so AAA began working with the city to change that. A partnership was formed with the Michigan Department of Transportation, the City of Detroit, the City of Grand Rapids, Wayne County, the Southeast Michigan Council of Governments, Wayne State University, and the Michigan Office of Highway Safety Planning, to identify and upgrade problem locations.

The model was a project funded by the insurance company in British Columbia, Canada. AAA Michigan insures 22 percent of Michigan motorists, more than any other company in the state, so it also has a strong financial incentive to improve safety and cut claims.

AAA's engineers worked with city officials in Detroit and Grand Rapids, along with state and county governments in the target areas. Engineers identified high-crash intersections from state police crash data and insurance records. Consultants studied the problem areas, designed the projects, and estimated the cost. The goal for AAA was a two-to-one direct benefit in three years — in other words, the club would recoup its money in a year and a half because there would be fewer insurance claims at that intersection.



Bigger and better-timed signal lights reduce crashes and red-lightrunning.

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PREVENTING CRASHES (continued)

BIG RESULTS FROM SIMPLE FIXES

The program has produced astonishing results: During the first 27 months of the four demonstration projects in Detroit, crashes decreased by 47 percent, with a 50 percent reduction in injuries. “The interesting part of the program is that most of these very large crash reductions have been done with low-cost projects,” Feber says. “You don’t have to spend a million bucks.”

The first few intersections cost approximately \$35,000 each — chump change compared to most traffic infrastructure improvements. And as you might expect from the relatively low cost, most of the intersection improvements are simple. “Typically, we upgrade,” Feber says. For traffic lights, “We go from 8” to 12” lenses so they’re 50 percent larger. We re-stripe left turn lanes with pavement markings, retime the traffic signals, and add something called an all-red clearance interval, where you leave both sides red for a second or two while the signals are changing.” Intersections also get better signs and improved pedestrian signals, and parking that can block drivers’ ability to see oncoming traffic is eliminated.

AAA’s contribution of \$1.5 million seed money generated funding of \$14 million from Federal, state, and local sources. Feber stresses that the revamped intersections are intended as demonstrations: “We can’t re-engineer all the intersections, nor should we. We’re hoping to transfer this model to road authorities throughout the state to replicate these same principles.” The City of Detroit has already asked for

help identifying their high-crash locations, and Feber hopes other jurisdictions will also re-engineer problem intersections.

“The biggest savings is really from a societal perspective, from the reduced injuries,” Feber says. “As the severity of an injury gets worse the insurance costs get less and the societal costs get higher.” The estimated societal savings of the AAA seed projects is \$100 million, Feber says.

REDUCED RED LIGHT RUNNING

To Feber’s surprise, redesigning the intersections also reduced red-light running. “Interestingly enough, we’ve seen red-light violations decrease by approximately 50 percent,” he says. Feber explains that “the larger signal heads are more visible, and we’ve placed them in more conspicuous places. What we’re finding is that not all motorists are running red lights because they are aggressive. Some are running the light because they’re not paying attention.” Retiming the amber phase also helped: “You have to decide to stop when you see the yellow,” Feber says. “So there’s an optimal length of the amber phase where people can make that decision safely. If it’s too short or too long you get more red light violators.”

Feber thinks that an engineering safety audit should be conducted before installing red light cameras. “We have to make sure that the motorist has every fair chance of stopping before we ever put up a camera. Some intersections are designed so motorists tend to violate the red — we can reduce that through engineering rather than enforcement.”

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