Sleepy medical staff run increased risks of accidents driving home after a night shift

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The drowsiness experienced by medical staff who have been on night duty can make their driving dangerous, French researchers have found. The first study to use simulated driving tests on medical staff returning home after a night shift showed that, under the monotonous driving conditions similar to those experienced on autoroutes (motorways or highways), it was more difficult for them to hold a straight line while driving than it was when they had not been working overnight. They also had greater difficulty in controlling their speed when driving in monotonous conditions.

Dr. Ségolène Arzalier-Daret, from the Department of Anaesthesiology and Intensive Care, Caen Teaching Hospital, Caen, France, will tell the annual conference of the European Society of Anaesthesiology tomorrow (Sunday) that she hopes her research will raise awareness among medical staff about the dangers of driving when sleep deprived. "Sleepiness at the wheel is a public health problem in France, the first cause of death on the autoroute network in 2009, and responsible for many crashes in towns the same year. There have been a number of campaigns to promote knowledge of this problem, but these statistics show us that there is a long way to go."

Dr. Arzalier-Daret and her team looked at the driving skills of 30 anaesthesia trainees in a sleep-deprived condition (SDC) and after a night of normal sleep. All tests were carried out in a simulated driving laboratory at 8am. Participants drove for 15 minutes in urban conditions, followed by the monotonous conditions of 60 minutes on the autoroute.

The researchers then analysed the participants' reaction times, average speed and the numbers of crashes in urban conditions, and the deviation of lateral position (failure to keep to a straight line) and variations in speed in autoroute conditions.

"We found that there were differences between those who had had a normal sleep and those who were sleep-deprived because of working overnight," says Dr. Arzalier-Daret. "In urban conditions, sleep-deprived drivers drove at an average of 2km per hour slower than those who had had a normal night's sleep, perhaps because they were aware that their driving skills might have been affected. Lateral deviation and speed variations were more significant in sleep-deprived drivers under monotonous conditions than in those who had slept normally. We know from official statistics that road accidents peak between 8 and 9 am*, so it is particularly worrying that the trainees normally finish their shift around this time."

Apart from the acute sleep deprivation suffered by the participants in the study, medical staff who are regularly on call at night often suffer from chronic sleep deprivation, say the researchers. They suggest that hospital staff should have the opportunity to rest in the hospital before driving home, particularly if they live more than 20 minutes away. "The differences in driving skills between those who were sleep deprived and those who were not appeared after 20 minutes (lateral deviation) and 30 minutes (speed)," Dr. Arzalier-Daret will say, "and we believe that staff who live further than 20 minutes' drive from their place of work should have the opportunity to rest before taking the wheel after a shift of night duty."

Drinking a coffee between half an hour to one hour before driving also helps to avoid drowsiness, the researchers say, but safest of all would be for employers to provide taxis home, as happens at some hospitals in the United States. Reducing the number of hours worked consecutively, as

has happened in Canada where night duty hours have been cut from 24 to 16 would also help, but this could lead to staffing problems at a time when there are already shortages.

"Car manufacturers and road authorities can also play their part, by making electronic systems to alert the driver to sideways movement of their vehicle more widely available, changing road markings and installing bands that give off audible warnings when a driver accidentally enters the hard shoulder," says Dr. Arzalier-Daret.

Although the study was simulated, the researchers believe that the results are likely to be replicated in real life. The study subjects also completed a questionnaire in which 13% said that they had gone to sleep at the wheel after night duty, 11% had had an accident when leaving work after their shift, and 6% attributed that accident to going to sleep. Going to sleep at the wheel is likely to be under-estimated because, if the sleep episode is very brief, drivers are not always conscious of it.

"Personally, I don't like driving home after work after a night shift, though I only live five minutes away," says Dr. Arzalier-Daret. "Even though our study didn't show any definitive proof that driving conduct was altered in town, as opposed to on the autoroute, I know that I have driven on autopilot and haven't remembered anything about the journey when I arrived home. And epidemiological studies show that fatal accidents due to somnolence mainly happen in town and on short journeys.

"I hope that our work will help to raise awareness of the dangers of driving when tired, and that employers of those who have to work night shifts will take measures to protect their staff from these dangers," she will conclude.

More information: *Observatoire national interministériel de sécurité

routière. La sécurité routière en France, bilan de l´année 2009. La documentation Française 2010. Synthèse générale:8-34.

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