Caffeine 'can significantly protect against crash risk' for long distance heavy vehicle drivers, study says

19 March 2013

Long distance commercial drivers who consume caffeinated substances such as coffee or energy drinks, to stay awake while driving, are significantly less likely to crash than those who do not, even though they drive longer distances and sleep less, finds a study published today in *BMJ*.

Long distance drivers routinely experience monotonous and extended driving periods in a sedentary position, which has been associated with wake time drowsiness, increasing the likelihood of crashing.

Caffeine is one of the most commonly used stimulants worldwide that has been shown to increase alertness in shift workers. However, it can also affect the quantity and quality of sleep. Studies have recognised that the use of caffeine is an effective strategy for improving alertness, but have been inconclusive in relation to the effects of caffeine to reduce the likelihood of injury.

Researchers from Australia therefore carried out a study of long distance commercial vehicle drivers, investigating, among other factors, the effects of caffeine on the likelihood of a crash.

The study was conducted between 2008 and 2011 in New South Wales and Western Australia. Participants were long distance drivers whose vehicle mass was at least 12 tonnes. The study compared 530 drivers who crashed their vehicle while on a long distance trip (cases) with 517 drivers who had not had a crash in the previous 12 months (controls).

Forty three percent of drivers reported consuming substances containing caffeine, such as tea, coffee, caffeine tablets, or energy drinks for the express purpose of staying awake. Lisa Sharwood (The George Institute, University of Sydney), lead author of the paper, says that this suggests drivers are making behavioural adaptation in order to manage their fatigue. "This may seem effective in enhancing their alertness, but it should be considered carefully in the context of a safe and healthy fatigue management strategy; energy drinks and coffee certainly don't replace the need for sleep".

Case drivers were, on average, nearly two years younger than control drivers and were more likely to have had a least one crash in the past five years. Control drivers had more driving experience, and tended to drive longer distances than case drivers, but reported fewer hours sleep per night and more difficulty staying awake while driving.

After adjusting for factors such as age, sleep patterns, symptoms of sleep apnoea, kilometres driven, breaks taken, and night driving schedules, the researchers found that drivers who consumed caffeine to help them stay awake were 63% less likely to crash than drivers who did not take caffeinated substances.

Heavy cigarette smoking alone showed a

relationship with crash risk, though this did not remain after adjusting for several confounding factors. However, having a previous crash in the past five years increased the risk of crash by 81% and this remained significant.

The researchers conclude that the consumption of caffeinated substances "can significantly protect against crash risk for the long distance commercial driver" and this has "important implications for the improvement of fatigue management strategies for this and similar populations." They do say, however, that the benefit is only useful for a short time and that having regular breaks, napping and appropriate work schedules are strongly recommended.

More information: Use of caffeinated substances and risk of crashes in long distance drivers of commercial vehicles: case-control study, *BMJ*, 2013.

Provided by British Medical Journal