

Asleep at the Wheel - The Tragic Consequences!



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Falling asleep at the wheel or drowsy driving is dangerous and leads to thousands of deaths and injuries each year, which are preventable given sufficient information and motivation. Our goal should be to establish a comprehensive and strategic effort to end drowsy and sleepy driving crashes and deaths. This article highlights the conclusions of a recent meeting of sleep experts and highway safety professionals and describes first steps and future plans to address this issue. It also sets out the legal situation regarding sleepiness/fatigue in Ireland and the UK. It offers advice from both the Road Safety Authority (RSA) and Dr. M. Breun, Clinical Psychologist on ways to combat tiredness while driving. Finally, a conclusion is given.

Asleep at the Wheel - The Tragic Consequences!

Tom Harrington LL B F Inst. MTD (August 2020)

“We spend around one third of our lifetime sleeping, and that’s because we need to. When we’re not getting enough sleep we become a risk on the road to ourselves and others. Tiredness including drowsy driving is a contributing factor in between 16-20% of all road crashes in Victoria; Australia. It might surprise you to know that studies show someone who has been awake for 17 hours has the same level of impairment as someone with a blood alcohol concentration of 0.05. Many people think fatigue is only a problem for long-distance drives; however it is just as relevant for short-distance drives. People generally don’t become fatigued from driving. Usually they are already tired when they get behind the wheel from long hours, shift work, lack of sleep, sleep apnoea or physically demanding roles”.¹

Introduction

I t’s your nightmare scenario. You’re making your way home late at night. It’s a long drive and your eyes are feeling heavy and you’re nodding off. You think that you should stop but you reason that you’re almost home and you really want to get home before midnight. You think that opening the window and turning up the radio might help. It doesn’t. The next thing you know; you wake up in hospital. Police officers tell you that you veered into oncoming traffic and collided head-on with another vehicle, killing the driver. For just a split second you have fallen asleep and unfortunately that’s all it may take to cause a potentially fatal accident. What you’ve experienced is a possible micro sleep (MS) which is a temporary episode of sleep or drowsiness which may last for a fraction of a second or up to seven seconds or more, where an individual fails to respond to some arbitrary sensory input and becomes unconscious. Micro sleeps occur when an individual loses awareness and subsequently gains awareness after a brief lapse in consciousness, or when there are sudden shifts between states of wakefulness and sleep. In behavioral terms, micro sleeps manifest as droopy eyes, slow eyelid-closure, and head nodding. We all hope to never be involved in such an accident but drivers take risks every day. 99% of the time there are no real consequences, but that 1% is all it may take to have disastrous consequences which may ruin lives.

¹ *Avoiding driver fatigue*. Transport Accident Commission. iac.vic.gov.au

The fast-paced, full-on schedules of most people's working week leave us feeling pretty tired. Yet, you've still got to make it through those long commutes and even longer road trips. However, when you find yourself tired or sleepy, driving can be deadly. If you've ever been driving and found yourself constantly yawning, missing turnings or unable to keep your head up and eyes on the road, then you're one of the many people at risk of falling asleep at the wheel. It's a scenario that prompts several questions about culpability given that there can be no *mens rea* (guilty mind - criminal intent) when someone is asleep. But make no mistake; falling asleep at the wheel can have serious legal ramifications.

Drowsiness

Beirness, Simpson, & Desmond (2005)² defined drowsiness or sleepiness as an urge to fall sleep as the result of a biological need, and a physiological state of the body that is irresistible due to the lack of sleep. It was suggested that sleepiness was the second most frequent reason for both single and multiple motor vehicle crashes, where drinking and driving was the most frequent cause (**Dingus, Hardee, & Wierwille, 1987**).³ According to **Akerstedt and Haraldsson (2001)**,⁴ sleep-related crashes are often found more severe and fatal. Actually, a survey study found that a majority of respondents(58.6%) admitted driving while tired or drowsy, 14.5% admitted having fallen asleep while driving over the past year, and nearly 2% were involved in crashes due to fatigue or drowsy driving in Ontario (**Vanlaar, Simpson, Mayhew, & Robertson, 2008**).⁵ It was also reported that 2.6% of the drivers who involved in fatal crashes were drowsy, ill, fatigued, asleep, or blackout in 2011 (FARS, 2011). Therefore, the threat of drowsy driving is very serious to traffic safety. The risk of drowsiness has been explored by **Shinar (1978)**.⁶ He argued that when people are drowsy, their capacity to process information is limited, not in the amount of information to see and to attend, but in the rate at which people process the information. The total amount of attentional capacity could be distributed among various driving and non-driving tasks in a drowsy driver. For example, a driver would be more attentive after a good night's sleep; on the reverse side, lack of sleep will decrease the driver's attentional capacity, slow down reaction time, reduce awareness, and impair judgment.

² Beirness, Simpson, & Desmond (2005). *The road safety monitor 2004. Drowsy Driving*. Ottawa, Ontario: Traffic Research Foundation.

³ Beirness, Simpson, & Desmond (2005). *Detection of models for onboard detection of driver impairment*. Accident Prevention and Analysis. . 19, 271-283.

⁴ *International consensus on fatigue and the rise of traffic accidents: the significance of fatigue for transportation safety is underestimated*. *Lakartidningen*, 198 (25), 3014-3017.

⁵ (Vanlaar, Simpson, Mayhew, & Robertson, 2008). *Fatigue and drowsy driving: a survey of attitudes opinions and behaviours*. *Journal of Safety Research*, 39 (4), pp.303-309.

⁶ Shinar, David (1978). *Psychology on the road: The human factor in traffic safety*. Wiley, New York.

This helps explain why crashes are often more severe under drowsy driving conditions. In addition, **Romer (2003)**⁷ found that those who were involved in drowsy driving also had tendencies towards sensation-seeking, impulsive decision-making, and low parental supervision.

Higher Impact Speed

Throughout Europe, falling asleep whilst driving accounts for around 20% serious collisions under monotonous driving conditions – this incidence rises to around half of the collisions on UK motorways early morning, during the daily trough of our body clock, between two and 6 am. Sleep-related collisions are worse owing to the higher impact speed, and thus are more likely to result in death and serious injury. Many of these collisions are work-related (e.g. trucks, goods vehicle and company car drivers). Around half are caused by healthy men under 30 years old especially when driving in the small hours of the morning, compounded by driving well beyond usual bed-time. These younger drivers not only take more risks in driving sleepy, believing that that they are ‘good drivers’, but don’t realize that sleep loss is more profound in its effects at their age. Drivers on night-shift work and driving home after night-shifts are also particularly vulnerable especially during the first night of a night shift. Older drivers are also more susceptible mid-afternoon during another dip in the body clock, which becomes more evident beyond about 60 years of age.⁸

Sleep Does Not Occur Spontaneously

‘Highway hypnosis’ does not exist. One cannot be hypnotized by the roadway – it is sleepiness. ‘Driving without awareness’ – unable to remember driving for the last 10 minutes or so, is not a sign of falling asleep, merely that the driver was probably on a familiar route with the mind on other matters; still competent to drive. This happens to us when watching a dull TV programme or reading a newspaper, to the extent that nothing may be remembered, but we are still alert to any new stimulus.⁹ With the possible exception of certain clinical conditions (e.g. narcolepsy), sleep does not occur spontaneously from an alert state. There is a feeling of (often profound) sleepiness beforehand. It is not possible to be alert one minute and asleep the next. Sleep is portended by a feeling of increasing sleepiness. However, despite being very sleepy, drivers, especially young male adult drivers will often deny the likelihood of actually falling asleep and believe that they can successfully fight sleep.

⁷ *Reducing adolescent risk: toward an integrated approach*. Sage Press. Thousand Oaks, CA. pp.1-8.

⁸ Jim Horne. *Falling asleep at the wheel*. Loughborough Sleep Research Centre. www.enviro.nyu.edu/en/...

⁹ Jim Horne. *Falling asleep at the wheel*. Loughborough Sleep Research Centre. www.enviro.nyu.edu/en/...

Research has shown unequivocally that drivers who fall asleep in the small hours of the morning declare beforehand that they felt sleepy. They reach a point of ‘fighting sleep’ by performing acts such as opening the window (for fresh air), turning up the radio, stretching etc, which by the very nature of these acts must demonstrate to the driver that they are sleepy. Sleep is a dangerous state, and all living organisms are provided with behaviours necessary to ensure that they do not fall asleep spontaneously, and have forewarning to allow them to reach a place of relative safety. Sleepiness itself clouds ones memory, and it is common for sleepy drivers to have little subsequent recollection of the sleepiness, let alone having then fallen asleep at the wheel. Sleepy drivers do know at the time that they are sleepy. This phenomenon applies to us all, as few of us can remember how sleepy we were before bed-time last night and, particularly, when this became noticeable. The same applies to hunger and thirst – we can seldom remember either in any detail a few hours after a meal or drink, even though it was clear at the time that we were hungry or thirsty. The reason is that the human brain does not have the capacity to remember such pointless information after the consummatory acts of sleeping, eating and drinking. Sleepiness can also impair a driver’s perception of the risk they are undergoing, creating a feeling of optimism about driving capability. When a driver feels the need to open the window, turn up the radio etc, then this is the time to stop driving and take a break. ¹⁰ (*Did you know it is possible to sleep with your eyes wide open Ed.*)

Micro Sleeps

Falling asleep at the wheel culminates in a series ‘micro sleeps’, typified by slow closure of the eyelids followed by slow opening (also called ‘eye-rolling’), usually lasting about 5-7 seconds in total, but this can be for much longer as micro sleeps progress (see below). Needless to say the eyes are unseeing, the brain is in light sleep and steering movements cease and the vehicle may drift (see above). If the driver wakes up in time there will be momentary confusion and sudden, violent braking and/or steering correction. The driver may become more alert for a while; often only for a minute or so, when another micro sleep(s) appears. The process repeats itself, with micro sleeps becoming longer and, maybe, a collision. Sometimes, in sleepy drivers determined to stay awake, micro sleeps appear (as before) without eye closure, but with a blank, trance-like staring through the windscreen. Again, the eyes are unseeing. ‘Head nodding’ does not always occur during micro sleeps as the inclination of the driver’s seat and the driver’s posture may counteract this tendency.

¹⁰ Jim Horne, Loughborough University, Sleep research centre. *Falling asleep at the wheel*. jimhorne.co.uk

Neurobiological Need to Sleep

In the literature many definitions are used for fatigue. The concepts of “fatigue”,¹¹ “sleepiness” and “drowsiness” are often used interchangeably. Sleepiness is an aspect of fatigue which is perhaps easiest to define. Sleepiness can be defined as the neurobiological need to sleep (NHTSA, 2001),¹² resulting from physiological wake and sleep drives (Johns, M. W. 2000).¹³ Fatigue has been, from the beginning, associated with task performance. In addition, fatigue also has a psychological meaning, for example, not having the energy to do anything and a subjectively experienced reluctance to continue with a task (Brown, 1994).¹⁴ Thus, sleepiness is the drive for sleep while fatigue can be seen as a signal from the body that we should end the on-going activity whether it is physical activity, mental activity or just being awake. Although the causes of fatigue and sleepiness may be different, the effects of sleepiness and fatigue are very much the same, namely a decrease in mental and physical performance capacity. There are many diverse sources and forms of fatigue as well as many endogenous and exogenous factors that influence its effects and intensity. Therefore, future studies need to use a more comprehensive conceptualization of fatigue in a multidisciplinary research setting according to (Smolensky et al., 2011).¹⁵

The Sleep Awake Cycle

Sleep provides the body and mind with the necessary time to rest, recuperate and reenergize for the next day. In the adult general population, seven to eight consecutive hours are considered a healthy length of time spent asleep. During the wake period, signs of sleepiness indicate the likelihood of falling asleep. Sleep and wakefulness are essentially determined by two independent regulatory mechanisms: the ‘body clock’ and ‘sleep pressure’ (also known as sleep homeostasis): the body clock, physically located in the brain, is responsible for 24-hour rhythms, known as circadian rhythms, which control several functions including sleep and wakefulness.

¹¹ Fatigue is a lingering or continuing tiredness that is constant and limiting. With fatigue, you have unexplained, persistent and relapsing exhaustion. It’s similar to how you feel when you have the flu or have missed a lot of sleep over a period of time. If you have chronic fatigue or systemic exertion intolerance disease (SEID), you may wake up in the morning feeling as though you had not slept at all. *How tired is too tired*. webmd.com. (Last accessed 17 August 2020).

¹² NHTSA (2001) *Drowsy driving and automobile crashes*. Report of the NCSDR/NHTSA expert panel on driver fatigue and sleepiness. National Highway Traffic Safety Administration NHTSA, Washington DC. http://www.nhtsa.dot.gov/people/injury/drowsy_driving1/Drowsy.html

¹³ Johns M. W. (2000). *A sleep psychologist’s view of drowsy driving*. Transportation Research Part F, 3, pp. 241-249. ec.europa.eu

¹⁴ Brown, (1994), Driver fatigue, ergonomics.1994, pp.298-314. ec.europa.eu

¹⁵ Smolensky, Michael H. et al (2011). *Sleep disorders, medical conditions and road accident risk. Accident analysis & prevention*. researchgate.net

The circadian rhythm in sleepiness peaks in the early hours of the morning (2-6 am), with another rise mid-afternoon (2-4 pm). Sleep pressure is the amount of fatigue that accumulates progressively throughout the day, due to daytime cerebral/mental activity mainly. As waking duration increases, sleep pressure increases, which progressively increases the feelings of daytime sleepiness. The sleep/wake cycle is thus a response to the dynamic balance between both regulatory mechanisms. On top of these integrated factors of influence, sleepiness can be influenced by a variety of external factors, which tend to add up exponentially. Behavioural factors (such as a disturbed sleep-wake schedule), sleep disorders (for instance sleep apnoea syndrome), drugs (for instance hypnotics or anxiolytics) or alcohol intake –all account for increased sleepiness. When drivers are affected by sleepiness or fatigue, their performance can become seriously impaired, especially at attention and decision-making. They are prone to a loss of alertness, difficulty keeping their eyes in focus, loss of concentration and wandering

Impaired Cognition & Performance

Sleepiness is an inescapable biological phenomenon with profound effects on the mind and body. Whether sleepiness is caused by sleep restriction due to a baby crying all night, a late shift at work, a teenager staying up with friends, or a long fatiguing drive to a relative's house for the holidays—the negative ramifications are ubiquitous and include: impaired cognition and performance, automobile crashes, accidents at work, and other physical and mental health consequences. Most importantly, the longer someone remains awake—especially during the night and early morning—the more likely the negative outcomes become. Much like alcohol, sleepiness can seriously affect driver performance. But unlike alcohol-impaired driving, every member of the motoring public has probably driven drowsy at some point in their life—and for many this has occurred on multiple occasions. Drowsy driving contributes to motor vehicle crashes in one of two ways. The first, and most obvious, is a driver falling asleep and running off the road or into another car or obstacle. Even a brief intrusion of sleep while driving can lead to serious consequences. The second involves the decrements in cognition and behavior that impair driving skill and increase accident risk.

“To Get More & Better Sleep,”

The lack of sleep leads to attentional lapses and poor decision making.

A recent study objectively measured driving performance in a car on a vehicle test-track following a night-shift.¹⁶ In addition to multiple significant indicators of drowsiness, the participants also made significantly more lane excursions, experienced more near-crash events, and had their drives terminated by experimenters because of failure to maintain safe control of the vehicle more frequently than a control group. Several studies over the last two decades estimated time frame-specific, self-reported prevalence of falling asleep while driving. Insufficient sleep has serious effects on safety, health, and quality of life. While the solution, “to get more and better sleep,” is simple, garnering public attention is difficult when societal values seldom align with getting sufficient sleep. In the modern 24/7 economy with an emphasis on work, growing commutes, and expanding channels of communication and entertainment, many people find it difficult to get the sleep they need.¹⁷ Effectively dealing with the problem requires a broad change in societal norms involving sleep in general and attitudes about drowsy driving in particular. Over the last two decades public and private organizations have made a number of attempts to address drowsy and sleepy driving. These efforts include: stakeholder meetings, public information campaigns, development of detection and alerting technology, revised hours-of-service regulations for commercial drivers, workplace fatigue management programmes, and passage of laws to address the issue. These programmes, technologies, regulations and laws have contributed in varying degrees to reducing drowsy driving. However, effective strategies are lacking that address the problem among the general driving public. The traffic safety community has developed effective methods to change behavior related to drinking and driving, seat belt use, and other safety risks, but this community has lacked the scientific foundation necessary to address drowsy driving in an effective, widespread and organized manner. Meanwhile the sleep science community has long recognized the criticality of drowsy driving but has lacked techniques for achieving nationwide change in driver behavior. What is needed to change the national conversation on drowsy driving is a coordinated effort involving the traffic safety and sleep/circadian science communities.

¹⁶ Lee, M. L. *et al.* *High risk of near-crash driving events following night-shift work.* Proc Natl Acad Sci USA. 2016; 113 (1): 76-181

¹⁷ Lee, M. L. *et al.* *High risk of near-crash driving events following night-shift work.* Proc Natl Acad Sci USA. 2016; 113 (1): 76-181

Irish Legislation & the RSA

Under s.53-(1) Road Traffic Act 1961,

“A person shall not drive a vehicle in a public place at a speed or in a manner which, having regard to all the circumstances of the case (including the nature, condition and use of the place and the amount of traffic which then actually is or might reasonably be expected then to be therein) is dangerous to the public.

In Ireland it is an offence to drive dangerously in a public place and that includes falling asleep at the wheel. If you're convicted of dangerous driving, you could be fined up to €5,000, or be imprisoned for up to six months or both. If you are convicted of dangerous driving causing death or serious bodily harm, you could be fined up to €20,000 and imprisoned for up to 10 years or both. According to the Road Safety Authority (RSA), you should never drive if you're fighting sleep. Because when you start fighting sleep at the wheel, you're impairment is as dangerous as driving over the legal alcohol limit. Their advice is: ¹⁸

- Stop and take a nap for 15 minutes.
- To really make the most of your break take a caffeine drink before the nap (150mgs of caffeine e.g. two cups of coffee. *(It has been argued that the coffee should be taken after the nap, so as not to impede sleep Ed.)*)
- After the nap, get some fresh air and stretch your legs.

By following all the above advice you should be able to drive for another hour or more. A new RSA campaign focuses on driver fatigue and offers similar advice to motorists on the dangers of driving when tired in the form of an easy-to-remember slogan – ***Stop, Sip, Sleep.***

- ***Stop:*** park in a safe place, preferably somewhere where you are able to take refreshment.
- ***Sip:*** take a caffeine drink (150 mg of caffeine e.g. 2 cups of coffee).
- ***Sleep:*** and then a 15 minute nap (most important)—set your mobile phone alarm to wake you. After the nap, the caffeine should have started to take effect.

¹⁸ *Think rolling down the window will keep you awake? Think again. RSA & Gardai launch Bank Holiday Campaign. rsa.ie*

By following all of the above advice you should be able to drive for another hour or so. However, these recommendations are really only to be used as a temporary remedy to avoid trouble, NOT as a technique to regularly drive longer hours for the purposes of work. Fatigue which is different to sleepiness is physical and mental impairment brought about by inadequate rest over a period of time; people need seven-eight hours' proper sleep every night and take appropriate breaks while at work in order to counteract the effects.

UK Law

Under UK legislation (s.2 of the Road Traffic Act 1988) states:

“A person is regarded as driving dangerously if the standard of driving falls below what would be expected of a competent and careful driver and it would be obvious to a competent and careful driver that driving in that way could be dangerous”.

You must tell DVLA if you have: ¹⁹

- Confirmed moderate or severe obstructive sleep apnoea syndrome (OSAS), with excessive sleepiness
- Either narcolepsy or cataplexy, or both
- Or any other sleep condition that has caused excessive sleepiness for at least 3 months - including suspected or confirmed mild Obstructive Sleep Apnoea Syndrome (OSAS).
- Medication that you're taking that has caused excessive sleepiness for at least 3 months (or has caused excessive sleepiness in the past)

You must not drive until you're free from excessive sleepiness or until your symptoms are under control and you're strictly following any necessary treatment. Any accident that occurs as a result of falling asleep at the wheel is usually classified as 'dangerous driving'. It can include driving aggressively, overtaking in dangerous locations and racing other vehicles. It also covers "driving when unfit, including having an injury, being unable to see clearly, not taking prescribed drugs, or being sleepy. Dangerous driving offences will be dealt with by the Magistrates' Court or Crown Court, depending on the seriousness. If you're found guilty, you could be hit with an unlimited fine, a driving ban and up to 14 years in prison. The standard of driving needs to become “careless” or “dangerous”.

¹⁹ Excessive sleepiness & driving. www.gov.uk

When you drive whilst tired, your standard of driving may be perfect right up until the point it is not and it is in that small window that accidents can happen. Falling asleep will no doubt result in your standard deteriorating and, in some tragic cases, result in a fatality. The first aspect of the case that the court must consider is whether it falls into the category of being “careless” or “dangerous”. Falling asleep is not sufficient alone to categorize it as dangerous as it is the standard of driving that results from falling asleep that is the important part. Just how bad did the standard get? Once the court has decided which category the case falls into, they will treat the fact that the motorist fell asleep as an aggravating factor of the case and this will have an impact on the penalty. It may come as a surprise to some, but death by careless driving (with sleep as an aggravating factor) can be dealt with in the magistrates’ court where they would likely impose a high level community order. Whilst that is a possibility, the reality is that the case would more than likely be sent up to the Crown Court as the fatality increases the seriousness of the offence enough to warrant greater powers of sentencing (the maximum the Magistrates’ Court can impose is 6 months in prison).

Driving Tired - Scotland

A new campaign has been launched in Scotland to tackle the issue of driver fatigue. The campaign has been devised by the Scottish Government and Road Safety Scotland on the back of statistics showing 14 people died on the country’s roads due to fatigue in 2018 – 9% of all road deaths. However experts estimate that the real figure is much higher, with up to 30% of all collisions involving driver fatigue. The new integrated campaign will run on multiple channels including social media and TV. Among the key messages are that many of the counter measures drivers use – including opening a window and turning up the radio – have been shown to be ineffective. The advertising features a close-up of a tired driver’s eye, with the road ahead reflected in it. After taking a long blink the road reappears in the eye, however the car drifts towards the centre of the road as the eye droops further and remains closed, resulting in a head on collision with another car and devastating consequences.

The campaign says:

***“We all know that we shouldn’t drive when we’re too tired, but sometimes weather, logistics, lack of alternatives or time constraints mean we do anyway.*”**

***“However, driving while fatigued or sleepy leads to impairment of driving performance by increasing reaction times and reducing attention, compromising decision-making and our ability to control the vehicle”.
“It’s incredibly risky.”²⁰***

Professor Jim Horne on Women v Men

New research shows that, yes, perhaps women do need more sleep than men, but why? And, more importantly, how much more sleep do women need? Do women use their brains more than men? Multi-tasking can be mentally and emotionally draining, but could it also be the reason women need more sleep than men. According to researchers at the Loughborough University UK- based Sleep Research Center, women do use their brains more than men – so much more so that, yes, they do require more sleep. In an interview with the New York Post, the director of the U.K. Sleep Research Center, Jim Horne explains:

“Women’s brains are wired differently, so their sleep need will be slightly greater. Women tend to multi-task—they do lots at once and are flexible, and so they use more of their actual brain than men do,”

Quantifying Drowsy Driving

The largest and most comprehensive naturalistic driving study to-date, the second Strategic Highway Research Program (SHRP2), was conducted by the Transportation Research Board from 2005 to 2016 and collected data at sites across the United States with varying geographic locations, both urban and rural roads, climate variation, and regional differences in transportation practices. The data set contains approximately 3,900 driver years from participants who ranged from 16 to 80 years old, with an estimated total of 2.5 million trip files. SHRP2 data offers an unparalleled view into the relationship between sleepy driving and crash risk. NHTSA is currently funding research with Westat, Inc., the University of Iowa, and the University of Wisconsin to explore drowsy driving in the SHRP2 data set. NHTSA hopes to better characterize the relationship between drowsy driving and crash risk and driver-critical reasons for crashes and near misses; understand variables that may help identify drowsy drivers in other data sets (e.g., fears); and identify individual differences that predict the likelihood of drowsy driving. NHTSA is also exploring these topics in New Jersey and Arkansas, the two States with drowsy-driving laws.

²⁰ *Driving tired kills, drivers in Scotland warned.* Road Safety GB, in association Think. roadsafetygb.org.uk

This is an important step in designing and deploying education and other countermeasures that will affect the incidence of drowsy driving across the United States.²¹ Beyond a national survey, collecting statewide drowsy driving data provides a powerful spotlight on the prevalence of drowsy driving within a State. Iowa posed drowsy-driving questions to people waiting in line at five different driver licensing stations as part of a statewide public awareness and attitude survey. Other States may explore how they too can better understand the attitudes and behaviour of drivers.

UK Study

There's some seriously sleepy--and dangerous--driving going on in the UK. A new study conducted by Brake and Cambridge Weight Plan²² indicates that millions of people on the road are nodding off behind the wheel. The study surveyed 1,000 drivers, and its results show that many UK drivers are ignoring signs of drowsiness while driving, putting themselves and others at risk for sleep-related accidents. Among the study's most alarming results are:

- 1 in 8 drivers (that's 4 million people!) has "nodded off" at the wheel, for a period of 2-30 seconds. (*They're called micro-sleeps. Ed.*)
- 1 in 4 respondents said they will actually begin a drive while already feeling tired.
- More than three-quarters--86 percent--of drivers will not stop to rest if they begin to feel sleepy behind the wheel.
- Nearly a third--29 percent--of drivers decide to keep driving despite feeling drowsy.
- 13 percent of participants reported suffering from a sleep-related health problem, such as insomnia or sleep apnea, putting them at even particular risk for drowsiness while driving.

So, who is most at risk for dangerously tired driving? Young people and men seem to be particularly prone to this kind of behavior. Researchers found that more than half of drivers ages 18-24 are likely to start a drive while already feeling tired.

²¹ *Asleep at the wheel – a national compendium of effects to eliminate drowsy driving.* US Department of Transportation. National Highway Transportation Safety Administration . nhtsa.gov

²² Dr. Michael J. Breun, Clinical Psychologist, Board Certified Sleep Specialist. 10 August 2011- updated 9 October 2011.

Men are twice as likely as women to nod off while driving, and twice as likely to choose to drive while feeling drowsy. People often don't take drowsy driving seriously enough.

The fact is, it can be as dangerous as driving drunk. Drowsy drivers share many of the same impairments as drunk drivers, including:

- Difficulty focusing
- Slowed reaction time
- Impaired judgment
- Increased moodiness (aka "Road Rage")

Sleepy driving is probably more commonplace than drunk driving, and it's unfortunately a great deal more acceptable. That's a dangerous combination. Estimates in the UK blame 1 in 5 fatal automobile accidents on drowsy driving; in the US, a recent study found that 1 in 6 fatal crashes were likely caused by drowsy drivers. Sleep-related accidents can be particularly dangerous because a dozing driver often has almost no time to react by braking or otherwise avoiding a collision. Beware the temptation to think you can power your way through a long drive with the help of caffeine or energy drinks. These beverages--especially those caffeine and sugar-laden energy drinks--provide at most a quick fix, and have their own side effects that can pose problems for your driving, your sleep, and your health. In addition to often containing excessive amounts of caffeine, the ever-popular energy drinks also are loaded with sugar. Sure, you'll get a short-term boost from a bottle of this stuff, but the sugar-crash that follows can make you feel even more tired, as well as jittery and anxious. A good, old-fashioned cup of coffee or tea can perk you up, but too much caffeine, especially later in the day, can interfere with your nighttime sleep, setting you up to feel drowsy the next day. You don't have to avoid these beverages altogether: a small cup of coffee or tea early in the day, ideally before 2 p.m., can give you the pick-me-up you're looking for without incurring the negative consequences of too much caffeine and sugar. Rather than relying on stimulants, follow these strategies to help keep you awake--and safe--on the road:²³

²³ Dr. Michael J. Breun, Clinical Psychologist, Board Certified Sleep Specialist. 10 August 2011- updated 9 October 2011.

1. ***Rest up.*** The simplest way to avoid the dangers of tired driving is to not allow yourself to fall behind in your sleep to begin with. If you know you'll be spending an extended period of time behind the wheel, plan ahead for some extra sleep. When planning your schedule for long drives, be sure to include time for rest breaks along the way.
2. ***Take breaks.*** Driving for hours on end is fatiguing, and the monotony can make you feel even more tired. Don't drive for more than a couple of hours without a 15-minute break. Take a few minutes to stretch, walk a bit, and get some fresh air.
3. ***Don't fight your drowsiness.*** If you feel the signs of sleepiness coming on, stop driving. Find a safe, legal and comfortable place to rest until you're able to continue your trip safely.
4. ***Don't ignore chronic tiredness.*** It's dangerous to ignore signs of sleepiness while driving, but frequent daytime tiredness should never be ignored, no matter what the circumstances. If you're regularly sleepy during the day, talk to your doctor.
5. ***Choose a safe, well-lit place for a nap.*** Drink a cold 6 oz. cup of drip coffee. Close your eyes for 25 minutes and nap - set an alarm on your phone.

When you wake, you will have reduced your sleep drive and the caffeine will kick in. You will be good for at least two hours. For safety's sake; it's time to start taking drowsy driving seriously, and to be honest about our own individual limitations while on the road. At the end of the day, there is no substitute for a good night's sleep. If you're having trouble sleeping, see your doctor. If think you just don't have time to sleep, think again.²⁴

Further Studies

In a research article entitled “*Evaluation of ‘In-Car’ Countermeasures to Sleepiness: Cold Air and Radio*”,²⁵ opening the vehicle’s window or listening to the radio/compact disc were among the most commonly used “helpful” methods employed by drivers for countering the effects of sleepiness.

²⁴ Dr. Michael J. Breun, Clinical Psychologist, Board Certified Sleep Specialist. 10 August 2011- updated 9 October 2011.

²⁵ L. A. Reyner & J. A. Horne, (Loughborough University. GB.)

The article goes on to say there is little scientific evidence to support the efficacy of these putative “in-car” countermeasures to sleepiness. Professor Jim Horne, Head of the Sleep Research Laboratory, Loughborough University UK advising the Road Safety Authority (RSA) Ireland has said that driver tiredness and fatigue could be a contributory factor in one in five crashes in Ireland. Research conducted on behalf of the RSA in December 2009, revealed that over one in ten drivers in Ireland (12%) have admitted falling asleep, or nodding off while driving. The European Transport Safety Council (ETSC) state that driver fatigue is conservatively estimated to be a factor in about 20% of road crashes in Europe. Furthermore, their incidence increases with the degree of seriousness of the crash. Fatigue is disproportionately represented in single vehicle crashes (25% of such crashes) but head-on collisions could also be fatigue related to a far greater extent than other types of crashes. According to Vic Road, Victoria, Australia, 21% of fatal crashes are thought to be fatigue-related and about 30% of severe single vehicle crashes in rural areas are believed to be linked to driver fatigue.

Driver Fatigue - The Silent Killer²⁶

Fatigue is the physical and mental impairment brought about by inadequate rest over a period of time. Ideally, each individual needs seven / eight hours of sleep each night. Drivers who are suffering from a sleep debt are at risk of "nodding off" whilst driving and substantially increasing their risk of being involved in a crash. If a driver persists in fighting sleep while driving the impairment level is the same as driving while over the drink drive limit. Eventually a driver will drift in and out of consciousness and experience ‘micro sleeps’ which can last for up to 10 seconds or more. Drivers can have a micro sleep with their eyes wide open. If a driver has a ‘micro sleep’ for just four seconds while travelling at a speed of 60mph, the car will have travelled 117 yards (351 feet) and he is totally oblivious to his surroundings and without proper control of his vehicle Tiredness related collisions are also 3 times more likely to be fatal or result in a serious injury because of the high impact speed and lack of avoiding action.

Conclusion

If you don't get enough sleep it will affect your ability to function in several different ways any of which can have dangerous consequences when you're driving.

²⁶ rsa.ie

Driving when tired and sleepy impairs judgment and reaction time so you may react slowly, brake late or miss a hazard altogether. This may explain why driving tired is a factor in a lot of rear - end crashes. Driving tired also affects your coordination so you might find yourself varying your speed - slowing down and speeding up - or your lane position, rather smoothly following a straight line. Crashes involving tired drivers are often at high speed and without any braking because the driver was asleep. Is it against the law to drive while tired? There isn't a specific offence of driving when tired but doing so significantly increases the chance of you committing other offences or causing a collision. Bear in mind that the penalty for driving dangerously in Ireland as a result of tiredness and sleepiness is €5,000, or imprisonment for up to six months or both. And if you are convicted of dangerous driving causing death or serious bodily harm, you could be fined up to €20,000 and imprisoned for up to 10 years or both. In the UK if you're found guilty of dangerous driving including sleepiness, you could be hit with an unlimited fine, a driving ban and up to 14 years in prison. Finally, the best advice available is to never drive if you're fighting sleep because when sleep overcomes you, you will nod off perhaps experiencing a micro-sleep or even longer and the consequences could well turn out to be tragic not just for yourself and your passengers but for other innocent road users as well.