



# **Drowsy Driving: How and why should your organisation take a more proactive approach to tackling this costly problem?**

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*“Four hours of lost sleep impairs a driver as much as drinking a six-pack of beer.”*

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## About this white paper

Depending on which piece of research you read between 20 and 40% of all accidents on the roads are attributable to driver fatigue. Insufficient sleep, poor individual choices, a simple adherence to ‘hours of service’ legislation, a lack of education and awareness, no understanding of the extent of the problem as well as toxic company cultures all contribute to this serious problem.

Despite widespread public acknowledgement that it is unacceptable to drive whilst tired recent surveys have shown that just over 4% of the population have fallen asleep at the wheel in the past 30 days and between 25 and 36 percent of workers regularly drive whilst drowsy to or from work.

My daily alerts frequently include details of tragic accidents all over the world as a result of driver fatigue. I’ve found that there appear to be three frequent themes: major accidents causing multiple deaths in public transportation, the dangers of driving after working a shift – especially a night shift and poor choices made by individuals.

In this paper we will take a look at some of the statistics, the costs, tell-tale signs and strategies to avoid drowsy driving. We will explain the relationship between sleep and drowsy driving and give examples of accidents caused by driver fatigue.

Finally we will explore where your organisation is currently going wrong and what action your organisation should take on both a short term and medium term basis.



## Let's start with some stats

The Royal Society for the Prevention of Accidents (RoSPA) states that tiredness reduces reaction time, vigilance, alertness and concentration so the ability to perform attention-based activities (such as driving) is impaired. They also say that the speed at which information is processed is also reduced by tiredness and the quality of decision making may also be affected.

This is perhaps obvious but there is no harm in being reminded of these facts. Numerous surveys and studies show just how common, dangerous and costly drowsy driving is.

The (US) National Highway Transportation Safety Administration ("NHTSA") estimates that driver fatigue results in 100,000 accidents, 71,000 injuries and 1,550 deaths annually.

According to the Centres for Disease Control ("CDC") between 15 and 30 percent of fatal crashes involve drowsy drivers. In the UK RoSPA estimate that up to 20% of accidents and 25% of accidents resulting in serious injury or fatality are a result of fatigue.

Crashes due to fatigue are 50% more likely to result in death or serious injury because a driver who has fallen asleep cannot brake or swerve to avoid or reduce the impact of the crash.

The (US) National Transportation Safety Board ("NTSB") estimates that 30 to 40% of accidents involving trucks are a result of fatigue. They also estimate that 36% of coach collision deaths over the last 10 years were caused by driver fatigue.



These statistics demonstrate the impact of drowsy driving. If we want to reduce these final statistics then we also need to examine people's attitude towards and the incidence of drowsy driving.

The 2011 UK '*Think Road Safety*' campaign found that 79% of us think it unacceptable and 66% totally unacceptable to drive when tired. A similar poll by the American Automobile Association ("AAA") in 2010 found that 85% of people think it is unacceptable to drive while tired.

However, when we look at the statistics around the incidence of drowsy driving there seems to be a disconnect between what people say and what they do.

- The US National Sleep Foundation's ("NSF") 2005 *Sleep in America* poll found that 60% of the population have driven whilst drowsy in the past year and 25% of the population drive whilst drowsy to or from work at least a few days each month – rising to 36% in those working shifts
- In a 2009-10 survey by CDC of 147,000 respondents 4.2% admitted to falling asleep at the wheel at least once in the previous 30 days, similar to figures from the (2010) AAA and (2012) NHTSA surveys, which found that 11% of drivers admitted to falling asleep in the previous 12 months
- The Think campaign also found that 37% of respondents had continued to drive when too tired.

Is the disconnect between the attitudes towards driving when tired and the incidence of drowsy driving attributable to a lack of knowledge which would serve to better inform drivers of the risks? If we could present the risks and statistics in a way people could relate to then we believe you would see the incidence of drowsy driving fall.

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## Counting the cost of drowsy driving

Drowsy driving has very clear repercussions – in terms of human and monetary costs from an individual and organisational perspective. Even a minor accident is likely to result in repair costs and costs associated with a vehicle being off the road whilst it is being repaired. Combined with a likely increase in insurance premiums even minor accidents are costly.

Where accidents result in death or injury then you need to factor in the costs of medical expenses (or medical insurance premiums), temporary staff expenses or reduced productivity from existing staff. There may also be costs in relation to redundancy, death in service, recruitment, trauma counselling and back to work initiatives not to mention additional management time.

In 1994 an article entitled *The cost of sleep-related accidents: a report for the National Commission on Sleep Disorders Research* in the *Journal Sleep* estimated that the costs of automobile accidents in the US, attributed to sleepiness, are between \$29 and \$38 billion every year.



## The Relationship between sleep and drowsy driving

I suspect you will understand that if we are not fully alert we are going to be more dangerous on the road. The quantity and quality of sleep we obtain is intrinsically linked to our alertness the following day. The consensus is that we need between 7 and 9 hours of uninterrupted sleep every night to be able to function at our best the following day.

We have a in-built biomechanical mechanism that ensures we obtain the sleep we need. When we do not achieve sufficient good quality sleep our in-built mechanism sends signals to our brain that we need sleep. This causes sleepiness.

Allied to this in-built 'sleep regulator' our circadian rhythm also dictates times of day when our alertness peaks and troughs. So even if we obtain sufficient good quality sleep there are certain times of day when we are naturally less alert. This happens during the hours of darkness (especially 02:00 to 06:00) and for a brief period in the afternoon. Our body temperature naturally drops and we feel more drowsy.

As we said earlier tiredness reduces reaction time, vigilance, alertness and concentration. All of these are needed to be able to drive safely.



## The hidden curse of sleep disorders

Statistics show that across the developed world the majority of the population is not now achieving the recommended amount of good quality sleep. Factor in the increasing incidence of sleep disorders and you have a recipe for an increase in accidents as a result of drowsy driving.

Sleep disorders, especially obstructive sleep apnoea can be extremely difficult to pick up. It is often only a partner who can tell if someone suffers from sleep apnoea (assuming that they are aware of the symptoms). Yet this disorder can cause people to wake up hundreds of times a night, which has a debilitating effect on their ability to function the next day.

There has also been an alarming rise in insomnia. Poor sleep habits, not allowing a sufficient amount of time to achieve the sleep we need and the extensive use of sleeping pills as a first resort have all contributed to the rise in insomnia.

Poor sleep and sleep disorders, especially undiagnosed sleep disorders WILL be affecting your staff. We recommend you find out the extent to which they impact your organisation.



## Examples showing the tragic result of drowsy driving

As we said in the introduction there appear to be three frequent themes: major accidents causing multiple deaths in public transportation, the dangers of driving after working a shift, especially a night shift and poor choices made by individuals.

### Major accidents causing multiple deaths in public transportation

- In August 2011 a double-decker sleeper bus in China hit the back of a methanol tanker. The driver was driving whilst tired and failed to brake in time. A methanol leak caused electrical equipment in the bus to short circuit and both vehicles caught alight. 36 people died
- Bus crashes in The Bronx, Oregon, Virginia and Illinois in recent years shine a light on the pressures in the American bus and coach industry. Low wages make long working hours a common phenomenon. Hours of service legislation, are routinely disregarded or distorted
- A campaign by the online newspaper The Oregonian uncovered the extent of driver fatigue in TriMet metropolitan bus and light rail staff. They found 21 incidences of drivers falling asleep at the wheel in just three and half years.





## Shift working and drowsy driving

According to the UK Department of Transport, staff working night shifts are 5.5 times more likely to have a sleep-related crash.

- In 2010 a volunteer Fire Fighter was heading home after a night shift in his pickup truck near Montreal. Apparently on cruise control, the truck ploughed through a line of six members of a triathlon club who were out cycling that morning killing three and injuring three others
- Earlier this year a nurse died in a head on crash after apparently falling asleep at the wheel. She had completed a 10-hour night shift, been to the local stables and had then given a talk to students at the University of Hull about a nursing career
- In Australia the Royal Flying Doctor Service is reporting an increase in call outs to deal with miners involved in road traffic accidents who are jumping into their cars after long and demanding shifts and driving long distances.

## Drowsy driving and poor individual choices (The Selby Rail Crash)

- In 2001 at 06:10 Gary Hart's Land Rover left the motorway and plummeted down an embankment onto the railway line. Two minutes later the Newcastle to London train hit the trailer causing it to leave the track and career into the path of a freight train
- Having ruled out the claim of a mechanical fault telephone records revealed that Mr Hart had been on the phone and internet up to 03:58 before leaving at 04:30. As a result 6 commuters and 4 railway staff lost their lives. He was found guilty of 10 counts of causing death by dangerous driving and jailed for 5 years.

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## Tell-tale signs of drowsy driving

As the statistics would suggest most people will probably have experienced drowsiness whilst driving. Signs include frequent yawning, eyelids drooping, straining your eyes to focus on the road, memory lapses or frequently hitting the rumble strips. If you have experienced some of the signs of drowsy driving and have continued your journey you are at risk of microsleeps.

These can last from fractions of a second to up to 2 seconds and result in a total loss of alertness. At 70 miles per hour (110 Km / hr) you will travel 31 metres per second.

When the police investigate road accidents they say typical signs of a fatigue-related accident include the vehicle leaving the road, lack of braking (evidenced by a lack of skid marks) and no evidence of an attempt being made to avoid crashing. This is why fatigue-related accidents tend to have more serious consequences.

## Strategies to avoid drowsy driving

Take a look at just about any survey on strategies people take to prevent tiredness when driving and the number one measure people use to counter drowsy driving is rolling down the window. Almost invariably the second most common answer will be turning up the music.

Other common countermeasures include: stopping to take a quick walk, talking to a passenger, stopping to splash cold water on their face, slapping or pinching yourself. Taking shoes off, adjusting the seat so it is uncomfortable and changing lanes more frequently are amongst other strange but common strategies.



The reality is that in laboratory test NONE of the countermeasures listed above have been shown to reduce drowsiness or improve alertness. In 1998 the NHTSA convened a panel of 14 experts to discuss drowsy driving. The panel found no evidence of effectiveness for commonly accepted remedial approaches.

Experts agree that the most successful countermeasure is to prevent drowsiness with adequate sleep before a journey. Taking a nap before a journey and avoiding driving in the early morning can also help. In extreme cases the current advice is to stop to sleep in a roadside hotel or, where continuation of a journey is necessary, to drink a caffeinated drink and immediately take a 15 to 20 minute nap.

## **So the obvious question – what are organisations currently doing wrong?**

Whilst many facets to this answer they can all broadly be grouped into two words – company culture.

Too many employers follow “hours of service rules” as the sole benchmark for tackling fatigue. Similarly, many simply expect their staff to report to work well-rested and fit for duty. But the reality is there may be circumstances beyond the employee’s control which cause significant fatigue.

Newborn children, untreated sleep disorders or just bad sleep habits which hinder the quantity and quality of sleep they obtain on a regular basis will all increase the incidence of drowsy driving. Employers must provide help so that their staff can report well-rested and fit for duty.



## Think for a moment...

When was the last time one of your staff told you that they felt too tired to drive? If you cannot recall the last time then it suggests your company culture is wrong. We will all have times when we sleep badly – it happens.

If someone has recently reported to work and said they feel too tired to drive what was your reaction? Perhaps it was a comforting arm around the shoulder and telling them to “do their best” or worse still “man up.” Again, bad culture.

I recently heard a story of a driver reporting to work at a logistics company and telling his boss that he was exhausted – he’d been kept awake by his new-born son. The manager took him off driving duties and found another role for him to perform.

This is an example of where a strong company culture does not put their staff (or other road users) at risk. Sure it is easier to do in a larger firm. Smaller organisations should focus their resources on education, awareness and prevention. In any organisation the culture should encourage staff to raise safety concerns. If a problem becomes recurrent then the company should take additional measures to help that member of staff.

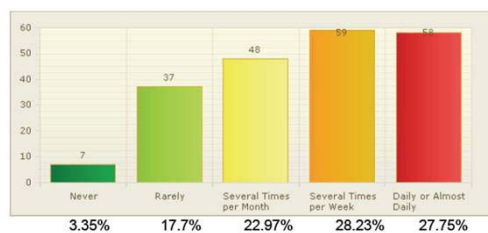
#### Fatigue Assessment

This is a summary of your assessment. Your total score reflects how you did relative to the maximum possible score you could have achieved for the questions you supplied answers to. The higher your score, the better you are doing at managing your daytime fatigue.

The Table is composed of ten of the tables from above. Each result from a factor is multiplied by a score 2-10 to give a score for that individual factor, which then also allows for a total score. Total maximum score is therefore 10 factors x 10 points = 100 points.

Fatigue Assessment Score						
Fatigue Factor	Very Poor 2	Poor 4	Fair 6	Good 8	Very Good 10	Your Score
Chronotype & Schedule	[Progress bar: 20% Very Poor, 80% Very Good]					10
Weeknight Sleep (hrs)	[Progress bar: 70% Very Poor, 30% Very Good]					7.00
Wake time Difference	[Progress bar: 20% Very Poor, 80% Very Good]					8.00
Sleepy at Work	[Progress bar: 50% Very Poor, 50% Very Good]					2
Fatigue Interference	[Progress bar: 75% Very Poor, 25% Very Good]					4
Exercise Frequency	[Progress bar: 60% Very Poor, 40% Very Good]					6

Frequency of Daytime Fatigue (# of Individuals) N = 209



Frequency of Fatigue Interfering with Work (# of Individuals) N = 209



## So what can you do to help your staff?

You don't necessarily need to spend a fortune. You can help make a serious difference with even a small outlay. Following the steps below will help save lives, lost working time and the livelihoods of you and your staff.

1. Assess staff to understand if you have a problem, the extent, impact and causes of the problem
2. Run education and awareness programmes for staff
3. Put in place / update or amend your policies and procedures
4. Change the company culture.

## So how can Third Pillar of Health help?

We have worked with leading sleep scientists in the US and UK to put together an online (or paper-based) assessment, based on validated questions. We will help you understand the incidence of drowsy driving, sleep quality and quantity, commuting times, the extent, impact and causes of tiredness and fatigue in staff. We will also help you understand the perception of the organisation's view on drowsy driving.

Education and awareness programmes should focus on different areas. These might include (but are not limited to): the legislative framework for drivers, government guidelines for driving and rest breaks, how to spot the signs of fatigue whilst driving, what to do if you are tired whilst driving, programmes to discuss sleep, drowsy driving countermeasures and the consequences of drowsy driving.



Your company should also have in place a comprehensive set of policies and procedures. For instance, what happens if a driver has an accident – is fatigue recorded, what happens if they report for duty and say they are feeling tired, what happens if someone is working a night shift or has a long commute after the shift? All these scenarios should be covered by your policies and procedures.

Once you have run an assessment you will be able to understand the problems that exist in the business. The next step is to make any necessary changes to the company culture at the same time as updating your policies and procedures.

We can help put in place a programme from as little as £10 per employee which will help save lives, lost working time and the livelihoods of you and your staff. Contact us today to find out more (details overleaf).



Please contact us in any way you like:

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Feel free to email us at the above address and request that we call you back

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