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Q&A: Driver Fatigue

The Question:

So what is the recommended maximum daily driving time?

This Q&A has been produced to help drivers with the decision to keep driving or not when experiencing fatigue, and manage fatigue while driving on the job.

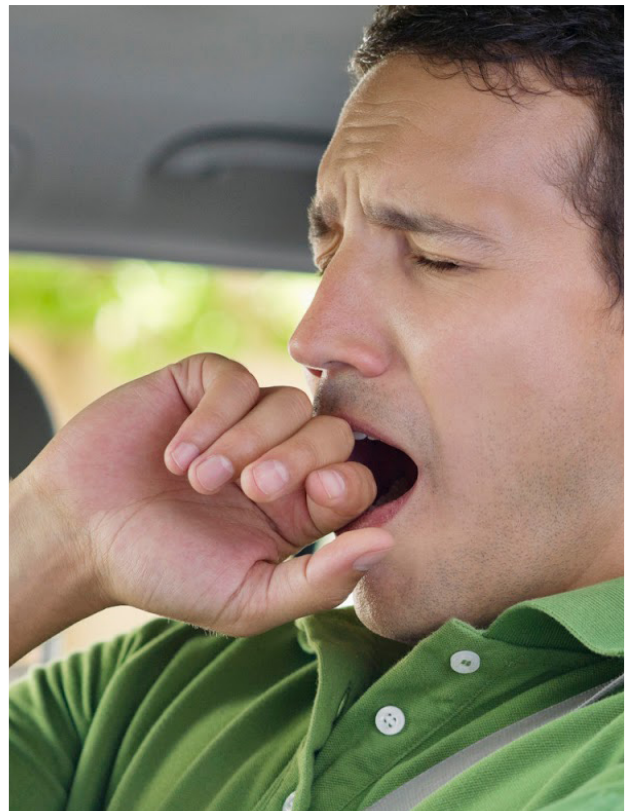
Scope of the problem:

Fatigue is a loss of alertness that reduces human performance and may or may not end up in sleep. Fatigue is one of the leading factors contributing to road crashes. Fatigue has the following problematic effects on driving performance;

- Slowed reaction time
- Shorter attention span
- Less effective memory
- Narrowing of attention
- Less effective reasoning and decision making

Fatigue related road incidents alone cost \$3billion each year.

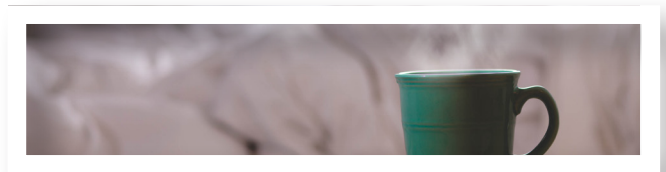
- According to the TAC, 20% of all fatal road accidents in Victoria involve driver fatigue.
- As stated by MACofSA, fatigue is estimated to be a contributing factor in approximately 30% of fatal crashes and up to 15% of serious injuries.
- CARRSQ have said that sleepiness contributes to 20-30% of all deaths and severe injuries on the road.



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Did you know?

Fatigue is 4 times more likely to contribute to impairment at work than drugs or alcohol



Origins of Fatigue

- Sleep deprivation (less than 6-9hrs sleep)
- Working long hours because of pride in work
- Working long hours and when tired because of inaccurate risk perception
- Long distance driving
- Vehicle comfort
- Road environment
- Stress
- Unpredictability of work (call outs)
- Irregularity of shift timing (e.g. variable start times)

Symptoms of Fatigue

- Yawning
- Sore or heavy eyes
- Slower reaction times
- Daydreaming and lack of concentration
- Poor perceptual-motor control
- Impatience
- Impaired judgement and performance
- Stiffness and cramps

Avoiding Fatigue when driving

- Prepare with adequate sleep
- Rest regularly – before becoming tired
- Only drive for 2 hours at a time
- Limit driving to less than 8 hours per day
- Alternate driving tasks
- Avoid driving at ‘danger’ times – midnight to 6am and post-lunch
- Avoid direct sun on the body – use shading
- Beware of the effects of monotony – aim for optimal cognitive demand by talking, sharing driving, taking regular breaks, ‘interesting’ routes
- Emergency measures – caffeine and napping

Warning: The benefit of caffeine does not last long and despite keeping you from falling asleep, caffeine is no substitute for sleep. Relying on stimulants instead of sleep can be very dangerous. Driving sometimes becomes erratic when stimulants are taken and your chances of having an accident increase.

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Microsleeps

A microsleep is a brief and unintended episode of sleep, it can cost you your life if you are behind the wheel. A microsleep is characterized by head snapping, nodding or closing your eyes, and they commonly occur when you are trying to stay awake while performing monotonous tasks, including driving. Microsleeps can last from a fraction of a second to a few minutes. During a four-second microsleep, a car travelling at 100 km/h will travel 111 meters while completely out of the driver's control. The best way to avoid microsleep is to get enough sleep prior to leaving for your trip.

Sleep Debt

Everyone needs approximately eight hours of sleep a night to function effectively. When you reduced the amount you sleep at night, you start to accumulate a sleep debt. A sleep debt is the difference between the hours of sleep you need to get and the hours of sleep you do get. When you have a sleep debt, you tendency to fall asleep increases. Increasing the risk of microsleeps. The longer the sleep debt, the higher the tendency to fall asleep. A sleep debt can only be erased by having more sleep. But a sleep debt cannot be erased in only one night, to settle a short term sleep debt you need to pay back all the hours of sleep you have missed across a few days and then get back into a regular routine of enough sleep.

Did you know?

Sleep debt cannot be erased in one night.



Night shift workers have **6 times** the risk of a fatigue crash



Driving for more than **11 hours** doubles the risk of a crash



Being awake for **17 hours** creates impairment that will double the risk of a crash



People who sleep less than **6 hours** have **3 times** the risk of fatigue crash



People who sleep less than **5 hours** have **5 times** the risk of fatigue crash

For more information about Sleep, read the NRSPP's Thought Leadership: Sleep: the missing link in fighting fatigue www.nrspp.org.au/Pool/Resources/NRSPP-Sleep-final.pdf

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Duty of Care and Regulations

Both employers and employees have a duty of care in relation to working hours under the OHS Act and associated regulations and codes of practice and can be fined for breaching the Act. The operating standards included in the regulations provide a guide to industry on how to plan trip schedules and rosters for commercial vehicle drivers that best manage fatigue. The standards emphasize the importance of sleep and timing of work and rest.

How long can I keep going?

This depends on how often you want to drive. For one long journey, you may be able to go for 12 or 14 hours, if you are driving in the daytime, have adequate breaks and you have had a good night's sleep. If you are driving at night after a day's work, 3 or 4 hours may be too much. Recent research suggests 9 to 10 hours as a maximum. If you are driving on several successive days, you should not go beyond this limit.



What can I do?

Avoid the kind of driving conditions that the professional driver finds difficult and dangerous. This means:

- do not start a long trip at night after a day's work; if you must do this, make sure you get to bed early the night before;
- not more than 10 hours on the road, unless you can share the driving with someone else;
- do not try to keep going after your first drowsy spell; the next will come quickly, and if you survive that, the next will come even more quickly;
- don't drink alcohol until the journey is over.

What causes drivers to fall asleep?

There are several factors:

- A spell of 10 hours or more driving at the wheel. The risk of having a crash increases sharply if you drive for more than 10 hours.
- Long spells of driving on several days in a row. It becomes more likely that a driver will fall asleep as s/he extends into the third, fourth, fifth or later day of a period of driving duty.
- Older drivers, say, over 50, are more likely to fall asleep than younger drivers.
- Less than the usual amount of sleep makes a driver more likely to fall asleep at the wheel some time during the following day.
- Consumption of alcohol - even in moderate amounts - increases the tendency to fall asleep.

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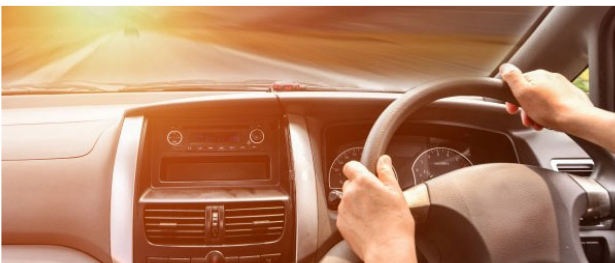
Workplace Fatigue Policy

A fatigue policy is not mandatory but may be an effective way to communicate the organization's procedures to workers. Consider including information about:

- roles and responsibilities of supervisors and workers
- maximum shift length, average weekly hours and total hours over a three-month period
- work-related travel
- control measures for specific tasks, jobs and operations
- self-assessment checklists
- procedures for reporting potential hazards and fatigue risks, and
- Procedures for managing fatigued workers, including what will happen if they are too fatigued to continue work (e.g. temporary task re-allocation).

A fatigue policy can be included with other work health and safety policies, for example policies on bullying, drugs and alcohol and fitness for work.

(Safe Work Australia, Guide for Managing the Risk of Fatigue at Work, 2013)



Factors to be taken into account

Worksafe WA (2004) recommends that in order to comply with the operating standards, scheduling and rostering must ensure that:

- A commercial vehicle driver is given at least 24 hours' notice to prepare for working time of 14 hours or more.
- A commercial vehicle driver is not permitted to exceed 168 hours of working time in any 14 day period.
- Total non-working time in any 72 hours is at least 27 hours.
- A solo commercial vehicle driver has least one continuous 7-hour period of non-work time in any 24-hour period and preferably between 10pm and 8am.
- Continuous periods of work time do not exceed 5 hours before a break of at least 10 minutes is taken.
- A schedule must allow for an average of 20 minutes breaks from driving for each 5 hours of work time for a commercial vehicle driver, and a minimum break from driving of at least 10 consecutive minutes at the end of 5 hours work time.
- Maximise the opportunity for sleep and to prepare for a trip by minimising very early departures.
- A commercial vehicle driver has at least two continuous period of 24 hours non-work time in 14 days.
- Minimise irregular or unfamiliar work rosters.
- Minimise schedules and rosters that depart from daytime operations when commercial vehicle drivers return from leave: commercial vehicle drivers returning from leave require time to adapt to working long hours especially at night.
- Ensure 24 continuous hours of non-work time between shift changes when commercial vehicle drivers work a continuous rotating shift system of 5 days or more.

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For more information

- Safe Work Australia, Guide For Managing the Risk of Fatigue at Work, 2013
- WorkSafe WA Code of Practice – Fatigue Management for Commercial Vehicle Drivers, 2004
- Transport for NSW. Thinking about hitting the road? Test how tired you might be before you get behind the wheel, get some tips to help avoid driving tired, and share your results with your friends at: <https://testyourtiredself.com.au/>
- 4. Traffic Accident Commission (TAC), <http://www.tac.vic.gov.au/road-safety/statistics/summaries/fatigue-statistics>, <http://www.tac.vic.gov.au/road-safety/tac-campaigns/fatigue>
- 5. CARRS-Q Sleepniess and Fatigue Fact Sheet, http://www.carrsq.qut.edu.au/publications/corporate/fatigue_fs.pdf
- 6. Motor Accident Commission of South Australia (MACofSA), <http://www.mac.sa.gov.au/campaigns/fatigue>

References

1. Elyria Kemp, Steven W. Kopp, Erasmus Kemp, (2013) "Six days on the road: Will I make it home safely tonight? Examining attitudes toward commercial transportation regulation and safety", The International Journal of Logistics Management, Vol. 24 Iss: 2, pp.210 – 229, <http://dx.doi.org/10.1108/IJLM-08-2012-0080>.
2. Guang Xiang Chen, Youjia Fang, Feng Guo, Richard J. Hanowski, The influence of daily sleep patterns of commercial truck drivers on driving performance, Accident Analysis & Prevention, Volume 91, June 2016, Pages 55-63, ISSN 0001-4575, <http://dx.doi.org/10.1016/j.aap.2016.02.027>.
3. Philippa H. Gander. Evolving Regulatory Approaches for Managing Fatigue Risk in Transport Operations. Reviews of Human Factors and Ergonomics June 2015 10: 253-271, doi:10.1177/1557234X15576510.