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## **Foreword - Why you should read this book**

Driver fatigue is a major safety hazard for all drivers. Fatigue crashes tend to be severe with little or no braking or avoidance action. The risk of death or serious injury to a driver and passenger or the occupants of other vehicles in a fatigue related crash is very high.

To understand how to recognise and prevent fatigue becoming a hazard for you, it is important to look at the causes. Fatigue and tiredness are signals from our body that we need sleep. Just like when our body needs food we get hungry and when our body needs water we get thirsty. Willpower cannot overcome these signals.

By understanding the processes that make us tired, you should be better able to plan and manage your daily routines to minimise the risk of fatigue. You will be a more professional driver.

This handbook is designed to help you achieve this. It suggests lifestyle changes and other steps that you should consider to help you manage your fatigue.

Don't think of this as being just for yourself. Your family depend on you and the community depend on you to be alert and in control of your vehicle at all times.

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## ***Staying alive on the road***



Australians live busy lives, trying to balance the demands of family and work and still find time to enjoy their leisure ... and to sleep!

Economic pressures and expectations mean people are generally working longer hours than a couple of decades ago.

Many are also getting less sleep. Before the modern world had electricity, people in Westernised countries averaged over 9 hours sleep per night. By the 1950s they were averaging 7½ to 8 hours. Now many Australians would consider 8 hours sleep a luxury.

The combination of working long hours and not getting adequate sleep can do a lot more than just make us irritable so that we growl at our spouse or the kids. For people who drive for a living the combination can be a fatal one.

In the trucking industry, trucks are becoming mobile warehouses as sellers keep minimum stocks and work on a 'just-in-time' principle. It can mean more pressures on companies and drivers with expectations of longer hours at the wheel.



In this booklet we call 'loss of alertness, drowsy driving and falling asleep at the wheel' – **fatigue**. Any of these things can happen to you when you are 'fatigued', and they lead to poor judgement, slower reactions and decreased driving skill levels.

### Survival Times for Humans

No Food	3 - 4 weeks
No Water	3 - 4 days
No Shelter	3 - 4 hours
No Sleep at the wheel of a vehicle	3 - 4 seconds

If you are a driver and you become drowsy you can drift into 'micro-sleep', which is a brief nap that lasts around **3 to 5 seconds**. At 100 km per hour that's 100 metres of travel and plenty of time to run into a tree or, heaven forbid, a bus full of school children.

*A northbound semi-trailer crossed over the centre line and collided with 2 southbound vehicles. The first vehicle hit was a school bus full of children. Six died and 10 had severe injuries. The truck driver was killed. He had had 1½ hours sleep over the 36 hours before the accident. He had been working for 12 hours and driving for 7.*

***An extreme example and an actual incident***

So driver fatigue is a major road safety problem. But it's often difficult to be certain that tiredness has been a cause in a crash. For example, when a fatal crash involves a single vehicle that runs off the road, there is no easy way to know whether the driver lost concentration or fell asleep.

***Sleep is as important to the transport industry as diesel and oil***

Main Roads WA has analysed all crashes involving trucks to find out how many were likely to have been caused by fatigue.

In 3 recent years there were 102 truck crashes in WA that caused deaths. Fifteen of these were likely to have been due to fatigue. There were many others where fatigue was almost certainly a factor, but where this could not be proved.

In the same period there were 488 truck crashes resulting in serious injury, and 55 of those were likely to have been caused by fatigue.

There were many more truck crashes that were not so serious and we can be sure that fatigue was also a factor in many of them.

So in WA, fatigue is involved in about 15% of fatal truck crashes and about 11% of serious injury crashes. As you would expect, fatigue is more of a problem on country roads than in towns and cities, with about 35% of rural truck crashes probably caused by fatigue.

The whole issue is really about managing the road transport system in its entirety to ensure that no driver has a schedule or work load that is so demanding as to be dangerous. If any part of this system fails so that a driver makes an error in judgement or skill through fatigue, the results can be fatal and very costly.

Traditionally the main method of managing fatigue in the transport industry has been to restrict drivers' hours of work. For example, in the eastern states there are prescribed hours for drivers, and work hours must be recorded in log books. While there is some merit in this system, it does not provide a comprehensive approach to managing driver fatigue that incorporates all aspects, such as education and training.

In Western Australia, the State Government, the transport industry and unions have developed a **Code of Practice and Regulations** which will be used in conjunction with the **Occupational Safety and Health Act** as an all-encompassing strategy for managing driver fatigue.



## ***The effects of fatigue***

We have defined fatigue as ‘loss of alertness, drowsy driving and falling sleep at the wheel’. It is certainly all of these things and more.

### **Loss of Alertness**

- this means you cannot respond quickly and safely to an emergency and may miss spotting dangers. You may also be less efficient at controlling your vehicle, eg changing gears, lane tracking and maintaining constant speed.

### **Drowsy Driving**

- drowsiness means feeling sleepy, but not actually being asleep. If you feel drowsy you may actually drift in and out of sleep occasionally without knowing it. Drivers have been studied when drowsy and found to be asleep for many seconds without being aware of it. This accounts for some quite common ‘ran-off-the-road’ crashes.

### **Falling Asleep at the**

- this happens in a number of crashes. These are typically very severe single vehicle crashes where there has been no attempt by the driver to



control the vehicle. The driver was clearly completely unaware of events before the crash. It is not often drivers will report they were asleep, but the evidence tells a different story.

### Poor Memory


- Being fatigued will also affect your memory. For example, you may suddenly become aware you have travelled 200 km without knowing it. This is not a problem in itself, but forgetting to make a delivery, a planned stop or forgetting where things are is a big problem in a hectic schedule.

### Bad Mood

- Being very fatigued can also make you irritable and not very good company at work or at home. You start to overreact to things around you.



***Driving is a complex mental and physical task that requires sustained levels of concentration and skill to maintain maximum performance. No responsible driver can afford to be fatigued.***



## ***What causes fatigue?***

The main causes of fatigue are:



### **Body Clock Factors**

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Working when you would normally be asleep.  
Sleeping when you would normally be awake.



### **Sleep Factors**

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Getting less than normal sleep.  
Getting poor sleep.



### **Work Factors**

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Working very long hours.  
No time to recover from work.



### **Health Factors**

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Medical sleep problems.  
General health and lifestyle issues.



In this booklet we will look at each of these factors in turn. But before we do, perhaps you are thinking, “I’ve never dozed off behind the wheel”, or “I think I get enough sleep”. If so, try taking this little test:

	<b>True</b>	<b>False</b>
1. I’m a careful driver, so I can drive safely when I’m a bit sleepy.	<input type="checkbox"/>	<input type="checkbox"/>
2. I can tell when I’m going to fall asleep.	<input type="checkbox"/>	<input type="checkbox"/>
3. Younger people need less sleep.	<input type="checkbox"/>	<input type="checkbox"/>
4. Older people need less sleep.	<input type="checkbox"/>	<input type="checkbox"/>
5. An alcoholic drink will help me sleep.	<input type="checkbox"/>	<input type="checkbox"/>
6. Caffeine replaces the need for sleep when driving.	<input type="checkbox"/>	<input type="checkbox"/>

All these statements are ‘false’. To learn more about sleep, read on.....



## B o d y C l o c k F a c t o r s

Your body runs on a natural biological cycle of 24-26 hours. This is called the Circadian Rhythm (circadian means 'about a day'). We'll refer to it as your 'body clock'.

We all have a body clock. Our Neanderthal ancestors had one. If they didn't wake up they could be eaten!

Your body clock synchronises your body rhythms and helps you to conserve resources. When the rhythms are out of 'synch' you get effects such as jet lag.



**You will have experienced the full effect of your body clock if you have flown to the eastern states. Jet lag is worse travelling to the east than to the west because your body can adjust more easily to going to sleep an hour later each evening than an hour earlier. One study found westbound travellers can take 2 to 4 days to recover, but eastbound travellers can take as long as 9 days to recover.**

Your body clock programs you to sleep at night and stay awake during the day. Inside your brain, just above your eyes, is a group of 10,000 nerve cells that program you to respond to night and day as the seasons change.

Your body temperature drops during the night and you get sleepy; then it rises during the day to help you feel alert.

At night your digestive system slows (because you are less likely to be eating) and your hormone production rises to repair your body. The hormone melatonin is the important one – it helps set your biological clock, increases at night and makes you want to sleep.

Your body clock is controlled partly by light and dark and partly by what you do. If you normally work from 9 to 5, some of the things that happen to you as a result of your body clock are:

- The morning light tells your body clock to make you more alert.
- During the morning your body clock keeps you alert.
- After lunch (siesta time) your body clock will turn your alertness down for a couple of hours.
- Your body clock will make you most alert in the late afternoon and early evening.
- Darkness in the evening tells your body clock to turn your alertness down again so you can get ready to sleep.
- After midnight your body clock will turn your body temperature and alertness right down so that you are switched off between 1 am and 6 am. At this time all your body functions are at their lowest level.



Research about our body clocks, including putting people into underground bunkers or caves, has all pointed to the following:

- Without external time your body clock tells you when to sleep, when to be active and when to have a nap.
- Without sunlight or clocks to guide you, your body will follow roughly a 24-hour cycle.

- People who have to work at night have trouble adjusting their body clocks. No matter how much sleep you get beforehand, you'll feel sleepy during the 1 am to 6 am period.
- Night shift workers can't get enough sleep during the day and feel sleepy at work.

### ***1 am - 6 am is the critical time***

Driving at night, sitting still in a dark cab, with the heater on and the gentle hum of the engine, all send signals telling you it's time to sleep.

Because your body clock is controlled partly by what you do as well as by daylight, you can change your body clock a bit. For example, if you normally go to bed at 8 pm and get up at 3 am, your body functions will be at their lowest before you normally get up. You have adjusted your body clock to a bit earlier than most people.



If you drive regularly at night, your body clock will change slightly so that you get some sleep during the day and work reasonably well at night. But, even if you consider yourself to be a 'night owl', you can't change your body clock to become a totally night person.

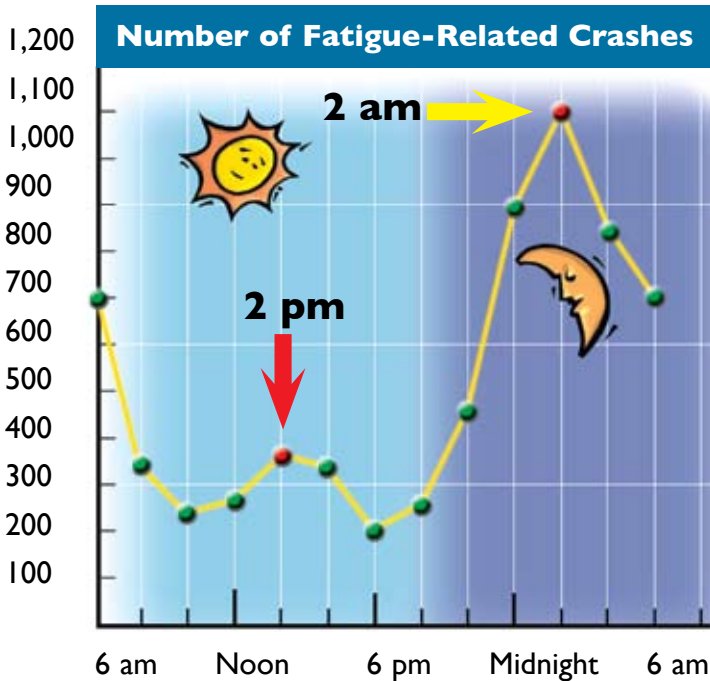
### ***You can't reverse your body clock***

What all this means for you, as a professional driver, is that you will be at your best, most alert and safest when working during the morning, the late afternoon and the early evening.

You will be at your worst between 1 am and 6 am when the body clock turns your alertness right down.

Road crash numbers show this is true. Although there are fewer drivers on the road between midnight and 6 am, statistics show they are much more likely to have a crash. (Some estimates suggest 20 times more likely.)

Because your body clock turns down alertness after lunch (the siesta period), there is also a small increase in road crash rates at this time too. Not surprisingly the crashes at night and during the siesta period are more likely to be single vehicle crashes.



If you have to drive at night, you have to make up your need for sleep during the day. You will certainly find it more difficult to get sleep during the day, although you may feel sleepy and can have a nap during the siesta period after lunch.

All the research shows you probably get around 2 hours less sleep than day drivers do; it will be poorer sleep and you will feel more tired.



## Sleep Factors

There is only one cure for fatigue. It's sleep.

There is only one way of preventing fatigue. It's getting enough sleep.

### ***Nothing beats a good long sleep***

Seven and a half hours sleep is generally recognised as an average and normal need. If you get much less than this you will suffer fatigue. You will feel tired during the day and especially after lunch; but you'll feel much worse at night when your body clock turns your alertness right down.

If you aren't getting enough sleep, you probably know it deep down but believe you can cope.

But remember, no matter what the job pressures, your job's not worth dying for and your family really can't do without you!

You may be one of those drivers who work very long hours and feel you don't have time for 7½ hours sleep. But you can't just sleep and drive and drive and sleep.

You need to wash, eat, do domestic things and talk to other people, and if you have little spare time you will probably do these at the expense of sleep.



A study of heavy vehicle drivers in WA showed that on any one day about half the drivers on the road worked more than 14 hours, and about 30% worked more than 16 hours.

This left only 8 hours for everything else they had to do. Twelve per cent said they got less than 4 hours sleep during the trip and 30% got less than 6 hours.

***30% of WA drivers are getting less than 6 hours sleep***

Drivers who got less than 6 hours sleep experienced 4 times as many dangerous situations while they were driving.

So, getting enough sleep is essential to safety; and you should aim to get 7½ continuous hours of sleep.

Transport schedules must take this into account. The schedule must include adequate time for 7 hours sleep and time for the driver's other essential activities.

If you are driving and getting little or no sleep at night, you are going to have to make up for it during the day. And because your body clock will turn your alertness up during the day, you will get less and poorer sleep. So, try and get as much sleep as possible at night, and take another nap during the afternoon siesta period if necessary.

You'll get good benefit from a nap that is about 15-20 minutes long but 30-40 minutes is even better. Just 5 minutes probably isn't long enough to provide much benefit. Taking naps at every opportunity can help compensate for those nights when you didn't get enough sleep. But remember naps are not a substitute for 7½ hours of continuous sleep at night.

***Power naps can compensate, but are not a substitute***

Do try to avoid schedules that make you work long hours at night, give you little time for night sleep and compel you to sleep in the day. If you avoid such schedules, you will suffer less fatigue and be far less likely to be involved in a crash.

If you get less than 7½ hours sleep each night you will build up a 'sleep debt'. Each day you go with less than 7½ hours sleep, the more fatigued you will be and the more unsafe on the road you will become. So, take every opportunity on your days off for a good long night of sleep. And prepare for a long trip by making sure you have fully repaid your sleep debt from the previous trip.

***Sleep debt is like a bank loan:  
You have to pay it back***

One of the simplest ways to judge whether you are in 'sleep debt' is to add up the hours of sleep you get compared to when you can sleep as long as you want.

These lost hours equal your sleep debt and heading off on the road with a sleep debt is like using your credit card when you're broke. The debt just gets bigger!

You don't have to repay every hour of your sleep debt and you can probably incur some sleep debt without serious effects. For example, if you're getting 6 continuous hours you may be OK for a couple of days.

But if you get less than that for about 3 or more days in a row, your driving performance could be as poor as if you were over the legal alcohol limit.

***Sleep debt is like being drunk  
at the wheel***

To drive a truck or bus you have to be extra alert and just being slightly sleepy could reduce your concentration enough to cause a crash.



In any event, one study shows that people who generally sleep fewer than 6 hours are likely to be in poorer health and have shorter lives than those who sleep seven or 8 hours and that's a pretty good reason for getting enough sleep!

You are a professional driver and many people depend on you – your family, your boss, your customers and other road users.

If you have trouble getting good quality sleep, here are some tips:

## **AT HOME**

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- ➔ Find the best room temperature to get to sleep (it will probably be between 18 and 22°C).
- ➔ Turn down the volume of the bell on your phone (or turn it off); wear earplugs; ask the family to be extra quiet.
- ➔ Hang extra thick curtains; wear eye shades.

## **ON THE ROAD**

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- ➔ Find a quiet truck bay.
- ➔ Use dark curtains and liners to keep out light.
- ➔ Make sure your sleeping berth is well ventilated.
- ➔ Take eye shades and earplugs with you.
- ➔ Turn off your mobile phone and radios.
- ➔ Take time to change out of your work clothes as you would at home.
- ➔ Drink plenty of water.
- ➔ If using a motel, find one (or a room) away from the road.

Working long hours will make you fatigued in several ways:

- ➔ It stops you resting and sleeping.
- ➔ It may have you on the road in the early morning when the body clock turns alertness down.
- ➔ It may make you bored and drowsy.



## W o r k F a c t o r s

The previously mentioned study of WA truck drivers showed many were working such long hours they could not get 6, let alone 7½ hours of sleep, and do all the other things they had to fit into their day.

Trip schedules should be designed to give drivers the opportunity of at least 7 hours of continuous sleep, preferably at night – with enough time for other essential activities such as eating and washing.

***Schedules should allow at least 7 hours of continuous sleep***

If this is not happening and you are missing sleep each night you will build up sleep debt. So it is vital that you have adequate days off so that you can pay back your debt.

If you are working long hours and missing sleep you will need to use two days off a fortnight to recover from the sleep debt by getting good long sleeps.

If your schedule is too demanding, talk to your boss or raise the matter of schedule changes at the next safety committee meeting.

Do not believe that the best measure of your driving performance is making good trip times. That's important, but it's more important to arrive alive!

***It's better to have 20 minutes in bed than end up dead!***

## **Ways to reduce fatigue**



### **Listen to the tick of your body clock**

No matter whether you have adequate sleep or not, there are high points of alertness and low points when you feel drowsy, or want to sleep.

Lack of sleep just makes these feelings worse. You will feel most sleepy between 1 and 6 am, and between 1 and 4 pm.



If your schedule is particularly demanding, or you have fallen behind schedule, you may not be able to get a good night's sleep and you'll feel like a nap in the afternoon. If this happens, listen to your body clock and schedule breaks for rest or naps. And call your boss to advise your rescheduled ETA.

It is vital that you get off the road if you feel drowsy during these periods. If you ignore any early signs of drowsiness you may have micro sleeps of 3 to 5 seconds. At 100 km per hour this is 100 metres of travel and plenty of time to run off the road or into the path of an oncoming vehicle.

**Feel drowsy? Get off the road!**

The likelihood of falling asleep when the body clock is set to its 'sleep' function is very much higher than at other times in the day.

## ***Don't mess around with your body clock***

Try to stick to a regular sleep and waking routine on every day of the week, so that sleep, meals and activity are always at the same time. This includes time off. This will improve your sleep quality and your alertness when you are awake.

## ***Get rid of your sleep debt as soon as possible***

Losing 2 hours sleep each day for 4 days will make you nearly as fatigued as losing one whole night of sleep. Plan your time off so you have enough sleep to cancel the debt. Avoid being tempted to go to parties and engagements if they will eat into the time when you should be repaying the debt. Work with your family and friends by explaining how important sleep is for you.

## ***Tell your family you need sleep***

## ***Plan your trip***

Most passenger and freight schedules will hinge on pick up and delivery times and dates. It's up to you and your boss to plan the details of your trip to include time for sleep, food and rest, including extra time for naps, should you need them.

## ***Learn to recognise and act on your signs of sleepiness***

On page 21 there is a check list of signs to look out for.

Once fatigue has set in, the only effective counter-measure is sleep. Don't wait till sleep happens before you find out that you were too fatigued to drive safely!

If you pull over for a nap, you can find out how sleepy you are by noting how long it takes to fall asleep. If sleep occurs within 5 minutes, then it was the time to pull over. If it takes you over 20 minutes to fall asleep, maybe you did not need to do so just yet.

## ***Work out how much sleep you really need***

Work out how much sleep you really need by recording how much you sleep when on holiday. Try keeping a diary to see how much less sleep you have had while at work and calculate whether you are repaying your sleep debt away from work. If not, you are a hazard on the road and need to do something about it. You may be in the wrong job, or you need to cut back on work hours.

### ***Manage your fatigue at home too***

Use your time off to recover from sleep debt. This means setting up conditions at home so that you can get as much sleep as you need. Work out how to reduce noise, light and disturbances, and to develop a regular sleep pattern.



### ***Develop your techniques for staying alert in the cab***

Even if we have adequate sleep, the monotony of a trip can make us less alert. If the vehicle is hot and the route is monotonous anyone will lose attention. But the driver who has had insufficient sleep will be lulled into sleep. You can develop some mental games and habits to help keep alert. There are some suggestions on pages 21- 22.

### ***Take advantage of opportunities to power nap***

Taking a nap is not a sign of inability to cope with fatigue or being a poor driver; it is good fatigue management practice. When any opportunity to nap and rest occurs, take it.

### ***Eat sensibly and at regular times***

You don't have to be overweight to be a driver. Eating high calorie, and fatty foods especially, can make you sleepy even if you have had enough sleep. Drink plenty of water and eat sufficient food to keep you going. There is a recommended list of foods on page 30.

## **Exercise**

Exercise will keep you fit, keep your weight down and improve blood flow where you need it. Driving involves long periods of inactivity, so take advantage of stops to get some exercise, such as a short walk.



## **Stimulants**

If you feel like taking stimulants, perhaps this indicates that you need more rest and sleep and your schedules and rosters are too demanding.

Use stimulants only when you need them, and beware of strong stimulants. Caffeine in coffee and cola is an excellent mild stimulant, but you will rapidly get used to it if you use it all the time. So avoid using it at home. Keep it for the trip.

Stimulants are not the answer to fatigue. Do not use them at a time when their effect will interfere with your next sleep. Remember amphetamines and other stimulants only delay sleep, and when they wear off you will be doubly tired.

## **Look after your health**

Regular health checks are important. You need to be sure you do not have a sleep disorder or other medical condition that could affect your ability to drive safely.

## Your check list



### Your check list for keeping alert

**Remember: once fatigue has set in, the only answer is sleep.**

- Plan your trips carefully to provide adequate time for sleep, rest and food.
- Talk to your family well in advance of departure time so that you get the rest you need.
- Be realistic about how much sleep you need to be a safe driver and make sure you get it.
- Start your journey without sleep debt.
- Understand your own body clock and know when you are likely to be at your least alert (eg between 1 am and 6 am).
- Take regular power naps (at least 20 minutes).

- Keep your cab at a comfortable temperature, but not too warm. An overheated cab can make you drowsy. It's better to wear extra clothes.
- Get fresh air into your cab. Smoke and stale air can contribute to drowsiness.
- Listen to music, talk-back radio or talking books or chat on your CB radio.
- Play mental games, such as calculating distances.
- Take regular breaks (say every 2 hours) to stretch, walk and check your vehicle.
- Learn to recognise the signs of sleepiness and pull over as soon as possible for a short nap.
- Eat sensibly and exercise regularly.
- Drink plenty of water.
- Never drink alcohol when working.
- Use caffeine only when you need it.
- Share this book with your family so they can support you and understand your need to get adequate sleep.
- If you think you have something wrong with your sleep patterns or your general health, seek medical advice.



## Your check list of warning signs

Most people who have a sleep debt don't realise they are tired, so drowsiness can creep up on you. It's time to pull over for a nap or a break if you experience any of the following danger signs:

- You have trouble keeping your head up.
- You have wandering, disconnected thoughts.
- Your eyes close for a moment or go out of focus.
- Your eyelids droop.
- You can't stop yawning.
- You find that you can't remember driving the last few kilometres.
- You drift over the centre line or on to the gravel at the side of the road.
- You miss a road sign.
- You miss your exit.
- You miss a gear.
- You start to see things that are not there.
- You brake too late.
- You find you have slowed unintentionally.



## H e a l t h F a c t o r s

There are a number of medical factors that can prevent you from getting a good long sleep that leaves you refreshed and alert.

There are also some general health tips and lifestyle choices that will make you a safer driver – with many other benefits.

### ***Medical sleep problems***

If you have the opportunity for enough sleep during the night and you still feel tired and drowsy during the day you should consult your doctor, who may refer you to a sleep specialist.

About ten per cent of drivers have treatable medical conditions that make them feel fatigued, such as feeling drowsy during the day.

If you feel this is a problem for you, it's no good just taking sleeping tablets; they won't cure the problem.

### ***Sleeping tablets are not a cure***

One medical sleep problem is called sleep disordered breathing or apnoea, and this is made worse if you are also overweight.

Although most people over 50 years snore at night sometimes, for a few it is a serious problem. They have sleep apnoea. Their wind pipe collapses during sleep so that too little air gets to their lungs. This wakes them up (and their partners). This can happen many times each night and results in poor and little sleep.

If you or your partner may have sleep apnoea, please consult your doctor. The condition is treatable and you'll be a safer driver as well as feeling much better.



Another problem is falling asleep during the day with no obvious sleep problem at night. This is called narcolepsy and can be treated.

Some people also suffer from restlessness at night that keeps them awake. They find their legs keep moving or twitching. This too can be treated.

Some illnesses such as diabetes, if not controlled, can also make you feel fatigued. Diabetes is an illness in which your blood sugar level is out of control. It can occur in anyone and in varying degrees. It is easy to control.

Being overweight or obese is not usually regarded as an illness. However, being overweight does cause other problems, which are illnesses. It causes high blood pressure and diabetes and may also cause you to have medical sleep problems.

### ***Have regular health checks***

Therefore, it makes sense for you to have regular health checks so these illnesses and medical problems are found before they make drivers unsafe or unable to do their job.

## ***Your general health***

Good health and fitness are no cure for fatigue – only sleep fixes that.

But the healthier and fitter you are, the better you will be able to do your work and the more enjoyable it will be. You will also probably sleep better and driving will be less tiring.

Good health is the absence of illness or disease.

Fitness is the ability to do our job as efficiently as possible. If we exercise and have a good diet we will be fitter to do our job. For example, it is common for people who do loading to have a back problem, usually pain in the low back or sciatica. General fitness and exercise, together with sensible lifting techniques, can prevent spinal injuries.

If you are fit and healthy you will be more alert and get better sleep. As a professional driver with the potential to cause serious injury or death to yourself or others, you have a particular investment in being fit and healthy. The older you get the more important this becomes.

Here are some things to help you stay healthy.



## **Alcohol, other drugs and stimulants**

The effect of alcohol on people is very similar to that of fatigue. So drinking before driving will make you feel as if you are already fatigued, and if you really are fatigued it will put you to sleep. Even small amounts of alcohol will increase the chance of being involved in a crash. Because of this, progressively all States in Australia are introducing zero blood alcohol (BAC) limits for bus and emergency vehicle drivers and truck drivers.

After drinking the only way to reduce your BAC is to allow time. It takes at least an hour for the alcohol in a standard drink to be broken down in our bodies. A full strength can of beer is equivalent to 1.5 standard drinks. If you have a large number of drinks over an evening you could still be over .05 BAC the next morning and almost certainly will still have alcohol in your system.



Large amounts of alcohol before bedtime will also change the sleep you get. It prevents the dreaming stages of sleep occurring early in the night, with the result that they are more frequent later in the night as the alcohol wears off. This can disturb your sleep and wake you up, so that you feel drowsy during the day.

Many drivers smoke cigarettes. They say they smoke because it helps them keep alert and delays fatigue.

The cost of smoking to your health is an increase in the risk of many diseases such as heart disease and lung problems. If you smoke you will probably be less fit than someone who doesn't and will find work more tiring. If you really feel the nicotine in cigarettes is a help in staying alert, try replacing cigarettes with nicotine chewing gum.

For people who work long hours and experience fatigue, there is a temptation to take stimulant drugs. There are many stimulant drugs

available from different sources, including cold remedies, speed or amphetamines, some appetite suppressants and possibly some herbal medicines.

### ***Stimulant drugs only delay sleep***

The stronger stimulant drugs are certainly very effective in delaying sleep; but they only delay it. When they wear off, there can be a sudden onset of sleepiness, which is very dangerous.

In addition, frequent and continued use of amphetamines is likely to cause hallucinations (seeing things that aren't there) and paranoia (feeling like you are being followed). This is clearly very dangerous to road users. So don't take them!

Caffeine in tea, coffee and cola is the most widely and safely used stimulant. It takes about 30 minutes to have an effect that will last for up to 5 hours. However, your body will rapidly get used to its stimulant effect, so don't overdo these drinks when you're not driving.

Caffeine works as a stimulant because it blocks the action of a chemical called adenosine.

Adenosine is produced in our body cells while we are awake and active, and the greater the levels the sleepier we become.



Stimulants may also reduce your appetite so that you do not eat enough of the correct food. So you may have to make a special effort to eat more, especially vegetables, brown bread and dairy food. Try taking multi vitamins and drink plenty of water to get rid of toxins from your body. However, don't wait until you are thirsty. Our hot climate means fluid loss can occur quickly and regular fluid intake is a priority.

If you feel you must take stimulants, avoid regular use and give your body as much time off from them as possible.

### ***Diet and Exercise***

Up to 50 per cent of Australians are overweight and at least one-third of the adult population do little or no exercise.

Excess weight is due to eating and drinking more than your body needs, and a lack of physical activity.

If you are overweight you have to carry the excess around on the job and this makes work more tiring. You also have an increased risk of high blood pressure, heart disease, bowel cancer, stroke, diabetes and gallstones – and if that's not enough, you may not live as long!

Obesity also causes sleep problems and is a strong contributor to sleep disordered breathing (apnoea) which wakes you up during the night so you feel sleepy during the day.

### ***Obesity causes sleep problems***

A healthy diet and regular exercise will reduce your weight and improve your fitness. You'll also sleep better.

The typical Australian diet is too high in fat, sugar and salt and too low in carbohydrates and dietary fibre. Few people set out to eat a lot of fat, sugar and salt, but these come with many of our favourite foods such as burgers, chips and ice cream.

So, if we cut down on these foods at home and on the road, what should we be eating instead?

Nutritionists recommend the following:

- ➔ Breads & Cereals: 4-5 servings daily selected from rice or pasta and bread
- ➔ Vegetables and Fruit: at least 4-5 servings daily of fresh, frozen or canned fruits and vegetables.
- ➔ Meat and Meat Substitutes: 1-2 servings daily of lean beef, lamb, veal, chicken or pork. (Ask for it to be grilled rather than fried.)
- ➔ Milk or Dairy Products: 3-4 servings daily of milk, cheese or yogurt.
- ➔ Fats: Butter and Margarine: Maximum of 1 tablespoon of butter or table margarine daily.





Cutting back on food by 1,000 kilojoules a day can lead to an 11 kg weight loss in a year.

The foods you eat can also affect how you sleep. Scientists suggest that a diet high in carbohydrates and low in fats will give you deeper sleep. It is bad practice to eat a heavy meal before going to bed and try to avoid having a heavy meal between 1am and 6am, when your body clock has slowed your digestive system down.



Many drivers spend most of their lives sitting in the cab. They might work hard loading and unloading, but generally most would benefit from more exercise.

If you are fit, your job will be less tiring. Exercising for 30 minutes a day, even in three 10-minute periods, can significantly improve health and reduce weight. Just walking or jogging instead of using the car to travel a short distance will help.

While you are on a trip, it's a good idea to go for a walk during a break from driving. Trucks even have some 'mobile gym' features! For example, you can use a bull bar to do arm and leg stretches and the sides of a trailer to stretch upper back muscles.

As a driver, the health of your back is vital to your livelihood; so look after it by stretching and flexing regularly and lifting properly.



## **Working with the company**

If you work for a company then your supervisor must be fully aware of most of the information in this booklet – particularly this section.

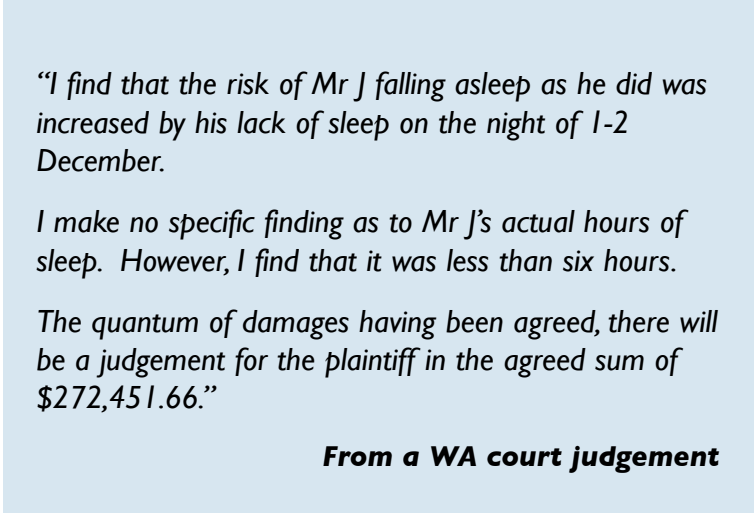
The Government in Western Australia has worked with the transport industry to develop a Code of Practice and Regulations for safe work practices in the industry.



This Code of Practice and Regulations set standards for Duty of Care for working and sleeping hours and many other matters under the Occupational Safety and Health Act.

**Your employer has a Duty of Care** to provide and maintain a safe working environment and is responsible for what might happen if this is not done.

**You also have a Duty of Care.** It is to be responsible for your actions and to work within the systems and procedures set out for safe driving.



*“I find that the risk of Mr J falling asleep as he did was increased by his lack of sleep on the night of 1-2 December.*

*I make no specific finding as to Mr J’s actual hours of sleep. However, I find that it was less than six hours.*

*The quantum of damages having been agreed, there will be a judgement for the plaintiff in the agreed sum of \$272,451.66.”*

**From a WA court judgement**

Your supervisor must know these standards. If your schedule and roster do not conform to them your supervisor should be notified. If this fails to improve the situation, a WorkSafe inspector should be notified. There are severe financial penalties for companies and drivers, whose neglect leads to a death or serious injury.



## ***Fatigue management regulations and code of practice for commercial drivers***

In Western Australia there is a set of Occupational Safety and Health regulations that specify laws designed to manage the hazard of fatigue for commercial vehicle drivers. The Occupational Safety and Health Code of Practice, Fatigue Management for Commercial Vehicle Drivers, provides guidance on the application of those Regulations in a workplace.

The Regulations set minimum and maximum standards for rest and work for commercial vehicle drivers. They also require, amongst other things, the need for a “driver fatigue management plan” and appropriate workplace conditions.

A driver fatigue management plan is a written document that details the practices and procedures an operator must have in place in relation to:

- (a) Scheduling trips
- (b) Rostering drivers
- (c) Establishing a driver’s fitness to work
- (d) Education of drivers in fatigue management
- (e) Managing incidents
- (f) Establishing and maintaining appropriate workplace conditions

The Code of Practice provides an explanation of the regulations and guidance on safe work practices. It provides information on ways to establish a fatigue management plan, and manage the risk of fatigue for commercial vehicle drivers. The Code explains how the regulations apply to vehicle owners and managers. It also explains the responsibilities for commercial vehicle drivers.

Details of the Code of Practice and the Occupational Safety and Health Regulations can be found at [www.worksafe.wa.gov.au](http://www.worksafe.wa.gov.au) or copies can be obtained from

**WorkSafe Library**

5th floor Westcentre  
1260 Hay Street  
West Perth 6005  
Telephone 9327 8777



The most important parts of any fatigue management system are driver fitness for duty and company scheduling and rostering practices. Unless the management of fatigue is considered when developing trip schedules and rosters for drivers, the rest of a company's system is of little value.

The following pages provide the essential features on how schedules and rosters can be designed to manage fatigue and what factors to consider for driver fitness for duty.

## Guidance on how schedules and rosters should be designed to minimise fatigue:

- a driver should be given at least 24 hours' notice to prepare for a Time Working period of 14 hours or more;
- a solo driver should have the opportunity for at least 7 hours of continuous sleep in a 24 hour period;
- in night shift operations, hours of Active Work should be reduced to reflect the higher crash rate from fatigue between 1 and 6 am;
- minimise irregular or unfamiliar work rosters;
- minimise driving when the solo driver does not have the opportunity for at least 7 hours of continuous, unbroken sleep in a 24 hour period;
- operate flexible schedules to allow for Short Break Time or discretionary sleep;
- minimise very early departures to give drivers the maximum opportunity to sleep in preparation for the trip; and
- when drivers return from leave, minimise night time schedules and rosters to give drivers time to adapt to working long hours especially at night.

## Guidance on driver fitness for duty:

- a driver is required to present him or herself in a fit state for duty taking into account any other work he or she has done;
- a driver must not be impaired by alcohol or drug use;
- a driver should be in a fit state to perform the work while working;
- develop a written policy on fitness for duty in consultation with employees and unions;
- provide an appropriate truck sleeper berth if drivers will need to sleep in the vehicle;
- require regular assessment of a driver's health by a suitably qualified medical practitioner;
- ensure that the medical assessment includes consideration of sleep disorders and other fatigue-related conditions;
- identify health problems that affect the ability to work safely, eg diabetes;
- advise of appropriate employee assistance programs if necessary and practicable;
- provide drivers with information and assistance to promote management of their health;
- provide a working environment that meets appropriate Australian standards for seating and sleeping accommodation; and
- provide vehicles and other accommodation with suitable facilities for rest.

## Further information and advice is available from:

### **WorkSafe Western Australia**

1260 Hay Street, West Perth 6005

Tel: (08) 9327 8777. Fax: (08) 9322 7651

Website: [www.worksafe.wa.gov.au](http://www.worksafe.wa.gov.au)

### **Department for Planning and Infrastructure (DPI)**

441 Murray Street, Perth 6000

Tel: (08) 9216 8000. Fax: (08) 9216 8001

Website: [www.dpi.wa.gov.au](http://www.dpi.wa.gov.au)

### **Transport Forum WA Inc**

37 Cohn Street, Carlisle WA 6101

Tel: (08) 9355 3022. Fax: (08) 9355 3122

Email: [reception@transportforumwa.com.au](mailto:reception@transportforumwa.com.au)

### **Transport Workers Union of Australia**

82 Beaufort Street, Perth 6000

Tel: (08) 9328 7477. Fax: (08) 9227 8320

### **Livestock Transporters and Country Bulk Carriers Association of WA Inc.**

Pastoral House, 277 Great Eastern Hwy. Belmont 6104

Tel: (08) 9478 3655. Fax: (08) 9277 7311



# Fatigue management operating standards for commercial vehicle drivers

## Frequently asked questions

### Are you covered by Regulations for driving commercial vehicles?

#### Do you drive a commercial vehicle in the list below?

- an omnibus;
- a school bus;
- mobile plant with a Gross Vehicle Mass (GVM) more than 4.5 tonnes;
- a motor vehicle with a GVM more than 4.5 tonnes that is designed to carry or is carrying a large integrated piece of equipment; or
- any other motor vehicle with a GVM more than 4.5 tonnes that is used, or intended to be used, to carry goods for hire or reward.

**AND**

#### Your work time:

- is more than 60 hours per week; or
- more than once per week, is more than 10 hours in any 24 hour period; or
- more than once per week between the hours of midnight and 5 am.



Government of **Western Australia**  
Department of **Commerce**





## For commercial vehicle operators

*This guide is a summary of the main requirements of the Occupational Safety and Health Regulations 1996 with respect to managing fatigue for commercial vehicle operators. For full details, refer to the Regulations and the Code of Practice Fatigue Management for Commercial Vehicle Drivers.*

### **Q: I employ commercial vehicle drivers. What do the Regulations require me to do?**

**A:** As the responsible person at a workplace you must ensure that:

- a driver fatigue management plan (see note 1) is developed and kept current by a competent person, which covers all commercial vehicle drivers who are required to drive commercial vehicles; **and**
- a **record of work time, breaks from driving and non work time** (see note 2) is established and kept current for each commercial vehicle driver who is required to drive commercial vehicles; **and**
- a commercial vehicle driver drives the commercial vehicle in accordance with the **operating standard (opposite)**; **and**
- is **certified by a medical practitioner as fit to drive the commercial vehicle.**

### **Notes**

**1. A driver fatigue management plan is a written document that sets out the requirements and procedures of your company in relation to the management of the hazard of driver fatigue. It consists of:**

- a. scheduling trips;
- b. rostering drivers;
- c. establishing a driver's fitness for work;
- d. educating drivers in fatigue management;
- e. managing incidents or accidents involving commercial vehicles; and
- f. establishing and maintaining appropriate workplace conditions.

**2. The record must be:**

- a. set out in a clear and systematic manner;
- b. made available for inspection by an inspector at all reasonable times; and
- c. kept for at least three years.

There is no prescribed format for the record. It can be in a diary.

# Operating standards for commercial vehicle drivers

<b>All drivers</b>	
Maximum continuous work time before a break must be taken	5 hours
Minimum break from driving during or after 5 hours work time	10 minutes
Minimum breaks from driving for every 5 hours work time	20 minutes
Maximum work time in any 14 days	168 hours
<b>Solo drivers</b>	
Maximum time between non work periods of 7 continuous hours	17 hours
Minimum non work time in any 72 hour period	27 hours
Minimum days off in any 14 day period	2 days - (each day must be a minimum 24 continuous hours)
Minimum days off in any 28 day period if working up to a 28 day roster (provided hours of work do not exceed 144 hours in any 14 day period within the 28 days)	4 days - (each day must be a minimum 24 continuous hours)
<b>Two up drivers</b>	
Minimum non work time in any 24 hours	7 hours <ul style="list-style-type: none"> <li>• does not have to be continuous</li> <li>• can be taken in a moving vehicle</li> </ul>
and either	
Minimum non work time in any 48 hours	7 hours <ul style="list-style-type: none"> <li>• must be continuous</li> <li>• cannot be taken in a moving vehicle</li> </ul>
or	
Minimum non work time in any 7 days	48 hours <ul style="list-style-type: none"> <li>• at least 24 of those hours must be continuous</li> <li>• the balance must be taken in no less than 7 continuous hours</li> <li>• cannot be spent in a moving vehicle</li> </ul>
<b>Drivers who work shifts on five or more consecutive days</b>	
Minimum non work time between shift changes	24 consecutive hours

**Q: I am a commercial vehicle driver. What do the Regulations require me to do?**

**A:** You must:

- a. drive the commercial vehicle in accordance with the **operating standards** on page 3;
- b. hold a **certificate from a doctor** that says you are fit to drive the commercial vehicle.

**Notes**

The required medical examination is a national standard published by Austroads and the National Transport Commission.

The medical examination forms are available from the WorkSafe website at [www.worksafe.wa.gov.au/fatigue](http://www.worksafe.wa.gov.au/fatigue) and are titled 'Commercial vehicle driver medical assessment'.

To ensure that doctors are aware of the standards required, a copy of that document was posted direct to their home address in 2003.

The certificate issued by the doctor is valid for three years from the date of issue.

**Q: Do I need to do any specific training?**

**A:** Yes, you must have fatigue management training. The training should be recorded and a copy of your training certificate should be given to your employer.

**Q. What do the Regulations mean by work time?**

**A.** Generally, **all** of the time from the start of the day until you finish work at the end of the day, but does not include breaks which last longer than 30 minutes.

**Q. What do the Regulations mean by breaks from driving?**

**A. Any** time when you are 'at work' but may not actually be **driving a commercial vehicle** – such as loading, unloading, doing maintenance, paperwork, changing tyres etc.

**Q. What do the Regulations mean by non work time?**

**A.** Generally, **any** period of time greater than 30 minutes, where you are resting or away from work – such as resting in an appropriate sleeper berth, or at home. It does not include time spent queuing to load or unload unless it is greater than 30 continuous minutes where you are not doing **any** type of work.

For further information contact:

**Department of Commerce  
WorkSafe Division**

Westcentre, 1260 Hay Street  
West Perth, WA 6005

Telephone: 08 9327 8777

Email: [safety@commerce.wa.gov.au](mailto:safety@commerce.wa.gov.au)

Website: [www.worksafe.wa.gov.au](http://www.worksafe.wa.gov.au)

