shiftwork
a handbook for people who work at night

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Introduction

This booklet is dedicated to everyone who works unsocial hours, enabling us to live in a 24-hour society. Without these individuals our manufacturing, transport and service industries would not be able to function adequately.

Productivity, health and safety can all be compromised by shiftwork, owing to the cumulative effects of poor sleep and working when we would usually be sleeping.

The Health and Safety At Work Act 201592 includes fatigue and stress as hazards that have to be managed. As we all know, shiftwork and fatigue go hand in hand, but there are some things we can do to minimise the effects of shiftwork.

This booklet is for shiftworkers who would like to sleep better, be more alert during work hours and develop their own shiftwork management plan.

We have a legal and moral responsibility to manage fatigue.

Work safely!

Fiona Johnston  NZROT
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What is shiftwork?

For the purpose of this handbook shiftwork is defined as work that takes place outside the standard working hours of 8 am to 6 pm. It includes working in the early morning, evening and through the night. In essence it is any work that compromises a worker’s sleep patterns.

Every day people all over New Zealand are cutting their sleep short in order to start work very early in the morning, or work late in the evening. Others are starting work on the night shift when the rest of us are likely to be tucked up in bed, sleeping soundly.

The people who work unsocial hours have been described as the unsung heroes of society. Men and women all over New Zealand are working when the rest of us are clocking off. We are reliant on shiftworkers to keep our country running efficiently. Hospitals, transport, police and manufacturing all rely on people who work around the clock.
Why is shiftwork different from day work?

The basic challenge with shiftwork is having to work when you would normally be sleeping. People are daytime creatures and do not adapt well to working at night. Our body rhythms are geared to make us active and alert during the day. Those same body rhythms make us less active at night, so that we can sleep.

We are hard-wired to be awake during the day, so we need to develop and learn strategies to help us to work at night and sleep during the day.
Why do we work these schedules?

People have a variety of reasons for working shifts. These are some of the most commonly mentioned reasons:

- Nightshift often pays more.
- Child care can be easier.
- There is less supervision on nightshift.
- Some people consider themselves to be night owls and prefer to work nights.
- More time can be spent with family.

“I get more time off in one go, which provides greater opportunities to participate in other activities, such as fishing, scuba diving, hunting, building a house.”
Will I encounter problems?

Most shiftworkers find it difficult to sleep during the day and stay awake at night. Shift-workers often say they are tired or fatigued, and many find it difficult to meet the demands of family life and maintain a healthy social life. However, others enjoy working shifts and cope very well with night work.

If you are considering starting shiftwork, talk to your family and friends first. It is important to have their support.
Fatigue

What is fatigue?
Fatigue is the state of tiredness owing to prolonged work or insufficient sleep. Its effects are underestimated because it can’t easily be measured, and sleepy shiftworkers are often reluctant to admit that they are tired or have fallen asleep at work.

The symptoms of fatigue are similar to the effects of drinking alcohol.

Is fatigue a big problem?
All shiftworkers complain of fatigue. Fatigue is critical when it can create a hazard for you, your work colleagues or members of the public.

Not getting enough sleep?
- Difficulty waking without an alarm
- Strong desire to take naps
- Falling asleep <10 minutes after going to bed
- Excessive sleeping on days off
- Nodding off in front of TV

- Slowed reaction times
- Poor concentration
- Less attention to detail
- Increased risk-taking
- Impaired judgment
- Poor memory
- Overwhelming desire to sleep
- Moodiness

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Why do shiftworkers get tired?

Shiftworkers have basic issues in common with the rest of the population, such as stress and working too hard. However, shiftworkers have two additional reasons to be tired; these are to do with the body clock. Night workers are working when the body naturally wants to sleep. They are also susceptible to sleep debt and inadequate recovery time. Many shiftworkers manage on only a few hours of sleep at a time and by the end of the week have accumulated a considerable sleep debt which cannot be recovered.

To work out your sleep requirement, next time you are on holiday don’t use an alarm clock and, over a period of seven days, record the amount you sleep. Begin your recording once you have had time to recover from any pre-existing sleep debt. At the end of the week add your sleep hours together and divide by seven to determine your average sleep requirement.
>>Improving sleep

All living creatures have a natural biological rhythm called the body clock. Daily or circadian rhythms regulate the timing of bodily functions including digestion, the sleep-wake cycle, core body temperature and levels of alertness.

If these natural daily body rhythms are disrupted by changes in work schedules, we can experience sleep disruption and other problems.

Whatever your schedule, your goal is to stabilise your body clock by achieving consistent sleep times and getting adequate sleep.

Performance - circadian highs and lows

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How can I improve my daytime sleep?

It is more difficult to sleep during the day than during the night because our body clock wants us to be active in the daytime. The noise of people going to work, family activities, telephone and road noise can also interfere with sleep. Light, even when it enters the eye through a closed eye lid, will impair the quality of sleep.

Does my age influence my sleep patterns?

As we get older it is harder to stay asleep across a normal sleep period. Research shows that this can sometimes be as a result of weaker bladder function, which causes people to wake more often. Also, our body clock becomes less flexible as we age, so older individuals can experience more difficulty in adjusting to working unsocial hours.

The circadian rhythm is a cycle of approximately 24 hours. It slows our body down at night to encourage sleep and warms us up in the day to enable us to be active. This makes it difficult for shiftworkers to be active at night because they are fighting their biological clock. There is also a biological dip in the middle of the afternoon, which is why many of us would welcome a sleep around 3pm.

By developing long-term systems and strategies to manage and cope with the demands of non-traditional hours at work, you may help to counter some of the physical effects of aging caused by working shifts.
Ways to improve daytime sleep

- Use black-out curtains or an eye mask.
- Avoid caffeine prior to daytime sleep.
- Mask out noise by using ‘white noise’, such as a fan.
- Set up your bedroom for sleep, not activity such as watching TV.
- Try to sleep as soon as possible after the nightshift.
- If you can’t get to sleep get up for about 20 minutes then try again.
- Designate a special sleep room that is cool, quiet and away from the noise of family activity.

- Avoid physical exercise before bed time.
- Use a fan to keep your room cool in summer.
- Put up a ‘shiftworker sleeping’ sign.
- Take the phone off the hook.

- Learn a relaxation technique.
- Avoid big meals before bed time.
Improving alertness

Most shiftworkers get extremely tired between 3 am and 6 am, when our body clock is at its lowest ebb. There are a number of ways shiftworkers can improve night time alertness, but it should be remembered that these are only short-term measures. The best way to improve night-time alertness is to have adequate sleep and it is essential that managers and workers devise a roster that best suits the social and biological needs of the workforce as well as the work load.

Ways to improve alertness at night

- get adequate sleep and power nap
- eat well, drink plenty of water
- take a break
- move around to keep your heart rate up
- use caffeine strategically
- clean your teeth, splash your face with cold water
- talk to colleagues, keep busy
- have bright lights in the work place.

Can napping really help?

Power napping is well researched and improves alertness. There are benefits from even a 10-minute nap. Longer naps of 20 minutes are recommended and increases in alertness are usually experienced about 30 minutes later.

Be careful of napping for longer than 30 minutes, as this increases the risk of experiencing drowsiness or fogginess upon waking. This is not appropriate for work situations.

A 20-minute power nap before you drive home can make the difference between getting home safely and not getting home at all.
Does drinking water really help?

Water is a vital component of the human body. Approximately two thirds of our total body mass is made up of water. If we do not drink enough water we become dehydrated. In fact the body of an average, lean, healthy man who weighs 70 kg contains roughly 42 litres of water. To stay healthy, you need to maintain your body’s water levels.

If you do not drink enough water you may get headaches, feel tired, feel nauseous, have slower reaction times and be less alert. Thirst is not a reliable indicator of dehydration so make sure you drink plenty of water – six to eight glasses per day. If you are physically active you will need to drink more, as all physical activity increases fluid loss.

A good way of checking whether you are drinking enough is to look at the colour of your urine - it should be pale yellow. If you are short of water your urine will be much darker and reduced in volume.

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Do I have to change what I eat on shiftwork?

Shiftwork requires special attention to food. Many shiftworkers experience digestive problems and changes in weight.

As humans we are programmed to digest more efficiently during the day than at night. Food that is eaten at night is digested at a slower rate, resulting in a tendency to put on weight and sometimes develop digestive disorders, such as constipation. Therefore, it is important for night workers to eat food that is easily digested.

It is also important to eat foods that help you maintain a stable blood sugar level. The field of science that studies blood sugar levels categorises foods on the glycaemic Index (GI). Foods that make blood sugar levels rise and fall slowly, and therefore help you maintain stable levels, are lower GI foods, including oranges, apples, low-fat yoghurt, peanuts and cashews, oat bran, grain bread, all bran, porridge and muesli.

Protein is a wake-up food. It helps us remain active and alert. However, it can be difficult to digest large amounts of it at night, contributing to the digestive problems experienced by many shiftworkers.
The secrets of good digestion

Food containing high levels of fibre are vital for healthy digestion. Fibre keeps things moving in the bowel and helps keep those nasty digestive problems at bay. This is another reason to favour high-fibre whole foods and to limit the amount of processed foods you eat.
The following suggestions will help you remain healthy and alert:

- Make your main meal before nightshift rich in protein to give you energy.
- Don’t eat heavy, fatty or protein-rich meals, such as sausages or a big steak, in the middle of the night or just before going to bed.
- Eat fibre-rich food, such as fresh fruit, wholemeal bread and vegetables, to help your bowel stay healthy.
- Snack on low-GI foods and small amounts of protein during the night.

Snacking a little and often through a night shift will help you stay alert.
Caffeine is a stimulant and is found in coffee, tea and many fizzy drinks. It can heighten awareness for a short period of time and can temporarily reduce the sensation of being tired. It usually takes less than one hour for caffeine to begin affecting the body and a mild dose wears off in three to four hours.

However, have a downside as the effect wears off leaving you with a dip in energy. It also interferes with the quality and amount of sleep you get. Try to avoid consuming caffeine prior to bed time.

How much caffeine is there in your food and drink?

On the next page is a list of the approximate amount of caffeine in various foods and drinks. These amounts may vary with different brands and are a guide only.

As a guide, try to keep your caffeine under 300 mg per day.