Summary

- The body is synchronised to night and day by a small part of the brain known as the circadian clock.
- Body functions such as heart rate, blood pressure, temperature, digestion and brain activity, fluctuate over each 24-hour period, under the guidance of the circadian clock.
- A shiftworker is at increased risk of health problems, such as digestive upsets, obesity and heart disease, and accidents due to excessive daytime sleepiness.

The sleep-wake cycle appears to have evolved for humans to be awake during the day and to sleep for approximately eight hours at night. There is a small part of the brain called the ‘circadian clock’, which monitors the amount of light you see, moment by moment. In the evening, when the light starts to wane, your clock notices and prompts a flood of a brain chemical called melatonin, which gives the body the signal to fall asleep. Overnight, melatonin levels remain high. They drop at daybreak and remain low during the day.

During the day, other chemicals (neurotransmitters) – such as noradrenaline and acetylcholine – increase in the body and keep you awake. This system keeps you synchronised through the day-night cycle. Many other functions of the body – including temperature, digestion, heart rate and blood pressure – fluctuate through the day, tuned by the activity of the circadian clock.

This changing rate of activity over each 24-hour period is known as the circadian rhythm. A person who works nights, or starts their working day before 6am, is running counter to their circadian rhythm. This may put them at risk of health problems.

Research findings are beginning to show that shiftwork can be hazardous to your health.

Your metabolism at night

An important body function, which follows the circadian rhythm, is the internal body temperature. This temperature increases through the day. It reaches the lower level in the early hours of the morning and reaches the maximum level late in the afternoon.

The tendency to fall asleep and stay asleep occurs during the decreasing phase of the temperature circadian rhythm (between midnight and 4am). As the body temperature rises, it is more difficult to stay asleep. This is one of the reasons why night workers who try to fall asleep at 8am find it very difficult and also find it difficult to remain asleep through the day.

Increased risks

A person working night shift, which causes disruption to the circadian rhythm, is at greater risk of various disorders, accidents and misfortunes, including:

- Increased likelihood of obesity
- Increased risk of cardiovascular disease
- Higher risk of mood changes
- Increased risk of gastrointestinal problems, such as constipation and stomach discomfort
- Higher risk of motor vehicle accidents and work-related accidents
- Increased likelihood of family problems, including divorce
- Probable increased risk of cancer, especially breast cancer.

In addition:

- Sleep deprivation caused by shiftwork may increase the risk of epilepsy in pre-disposed people.
- Shiftworkers with diabetes can experience difficulties in controlling their blood sugar levels.

Sleep problems

Shiftworkers get, on average, two to three hours less sleep than other workers. They often sleep though the day in two split periods, a few hours in the morning and then an hour or so before going to work at night. Night workers can find it difficult sleeping during the day (particularly in Australia). It’s difficult to keep the sleep environment dark, free of noise and relatively cool.

Rotating shifts

The best rotating shift pattern is still undecided. For the most people, rotating forward through day, afternoon and night shift is better than backwards (night, afternoon then day). The frequency of rotation is also controversial. Some people advocate prolonged rotation, such as two to three weeks. Others advocate short rotations of two to three days. Both have advantages and disadvantages.
It takes about 10 days for the body to adjust to night shift work. However, it is common for night shift workers to revert to daytime routines for a day or two during days off, which tends to make the circadian rhythm unstable.

The amount of hours (8-hour versus 12-hour shifts) is also controversial. It can be said that 12-hour shifts stretch the body’s tolerance as far as possible. It’s very important that no overtime should be allowed during a rotation of 12-hour shifts. Another risk to sleep is when a worker on seven 12-hour shifts a fortnight uses their free time for another, almost full-time job.

A proportion of shiftworkers may have marked daytime sleepiness, called Shift Work Sleep Disorder. In certain circumstances, they may be helped by careful use of stimulant therapy, on the advice of their doctor.

**Where to get help**

- Your doctor
- WorkSafe Victoria Tel. (03) 9641 1444 or 1800 136 089
- WorkSafe Victoria Emergency Response Line Tel. 13 23 60 – to report serious workplace emergencies, seven days, 24 hours

**Things to remember**

- The body is synchronised to night and day by a small part of the brain known as the circadian clock.
- Body functions such as heart rate, blood pressure, temperature, digestion and brain activity, fluctuate over each 24-hour period, under the guidance of the circadian clock.
- A shiftworker is at increased risk of health problems, such as digestive upsets, obesity and heart disease, and accidents due to excessive daytime sleepiness.

**References**


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More information

Work

The following content is displayed as Tabs. Once you have activated a link navigate to the end of the list to view its associated content. The activated link is defined as Active Tab

- Work health basics
- Health risks and the workplace
- Healthy eating and work
- Active living and work
- Healthy mind
- Change and career planning
- Relationships and conflict
- Flexible workplaces
- Environmental health and safety
- Injuries and rehabilitation

Work health basics

- Work and your health
  Work can provide satisfaction, but loss of a job or work-related problems can affect our physical, emotional and mental health...

- Workplace conflict
  A clash of personalities at work is bad for business, because it can affect productivity and increase absenteeism...

- Look after your health at harvest time (slideshow)
  Farmer health, wellbeing and safety are often neglected when facing the pressures of harvest. Simple safety measures can dramatically reduce the risk of injury and illness...

- Computer-related injuries
  Using a computer can contribute to problems of the muscles and joints, eyestrain and overuse injuries of the arms, wrists and hands...

- Physical activity - how to get active when you are busy
  Even if you’re busy, you still need to find a way to be physically active...

- Returning to work after major trauma (video)
  If illness or injury forces you to take time off from work, it can have a big impact on your life. The time it takes to recover full health can change the way you feel about yourself. You can lose...
• The dangers of sitting: why sitting is the new smoking
  The less sitting or lying down you do during the day, the better your chances for living a healthy life...

• Workplace safety - coping with a critical incident
  Stress responses can develop over time after trauma, and support may be required by some workers or groups...

Health risks and the workplace

• Workplace safety - manual handling injuries
  A person can be injured when handling objects in a variety of ways including pulling, pushing, holding or restraining...

• Workplace safety - overuse injuries
  Occupational overuse syndrome, also known as RSI, is caused by repetitive movements or awkward postures...

• Workplace safety - noise pollution
  There are many ways to reduce exposure to excessive noise in the workplace...

• Workplace safety - hazardous substances
  A hazardous substance can be inhaled, splashed onto the skin or eyes, or swallowed...

• Asthma and your workplace
  Some industries are more likely to affect a person with asthma because of the triggers in the environment...

• Handwashing - why it's important
  Washing your hands with soap and warm water can help prevent the spread of infectious diseases...

• Look after your health at harvest time (slideshow)
  Farmer health, wellbeing and safety are often neglected when facing the pressures of harvest. Simple safety measures can dramatically reduce the risk of injury and illness...

• Returning to work after major trauma (video)
  If illness or injury forces you to take time off from work, it can have a big impact on your life. The time it takes to recover full health can change the way you feel about yourself. You can lose...

• Shiftwork
  A person working the night shift is at greater risk of various disorders and accidents...

• Workplace safety - coping with a critical incident
  Stress responses can develop over time after trauma, and support may be required by some workers or groups...

Healthy eating and work

• Cooking tips for busy people
  If you lack the time or motivation to cook, try these tips...

• Lunch boxes - healthy ideas
  Healthy foods that are great for school lunch boxes...

• Lunch - avoid the fast food fix (video)
  Nutritionist Shane Bilsborough shows us how much energy it takes to burn off a fast food lunch. Join tradies, Corky and Danny as they find out how to maintain a healthy weight...

• Lunch boxes - healthy shopping ideas (video)
  Victorian State Public Health Nutritionist Veronica Graham takes us shopping for the right foods to include in your child's lunchbox...

• Look after your health at harvest time (slideshow)
  Farmer health, wellbeing and safety are often neglected when facing the pressures of harvest. Simple safety measures can dramatically reduce the risk of injury and illness...

• Lunch boxes - how to make them healthy (video)
  Victorian State Public Health Nutritionist Veronica Graham shares three healthy and delicious lunchbox examples for the kids and provides some great food preparation tips to save you time throughout...

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Tips to keep our snacks on track (slideshow)
Most of us are prone to the odd snack or two. Check out these simple tips to keep your snacks on track...

Workplace catering (video)

Active living and work

Exercise and stretching in the office (video)
Sitting behind a desk all day doesn't mean you can't exercise...

Posture
Bad habits such as slouching and inactivity cause muscle fatigue and tension that ultimately lead to poor posture...

The dangers of sitting, why sitting is the new smoking
The less sitting or lying down you do during the day, the better your chances for living a healthy life...

Physical activity - staying motivated
Pick an exercise or fitness activity that appeals to you and suits your lifestyle...

Returning to work after major trauma (video)
If illness or injury forces you to take time off from work, it can have a big impact on your life. The time it takes to recover full health can change the way you feel about yourself. You can lose...

Healthy mind

Exercise and mental health
We all know how important exercise is for keeping us physically healthy. But did you know that exercise can also help keep you mentally healthy? Research shows that people who exercise regularly have...

Work-related stress
Work-related stress causes an increase in sick days and absenteeism, a higher turnover of staff and a drop in productivity...

Stigma, discrimination and mental illness
Stigma is when someone sees you in a negative way because of a particular characteristic or attribute, such as mental illness. When someone treats you in a negative way because of your mental illness...

Getting help for someone with a mental illness
The sooner a person with a mental illness receives treatment, the better the outcome is likely to be...

Look after your health at harvest time (slideshow)
Farmer health, wellbeing and safety are often neglected when facing the pressures of harvest. Simple safety measures can dramatically reduce the risk of injury and illness...

Change and career planning

Career management
Some people are unable to effectively manage their careers because previous choices have left them few options...

Retrenchment or financial loss
It is normal to feel shocked, distressed, angry, guilty, worthless or powerless when you lose your job or face an unexpected change in your financial situation...

Job hunting tips
You can improve your chances of finding a job by casting a wide net...

Retirement
People who plan an active life when they retire tend to be happier than those who have no plans...

Relationships and conflict

Workplace conflict
A clash of personalities at work is bad for business, because it can affect productivity and increase absenteeism...

Bullying

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Parents can help with bullying by supporting their child and involving the authorities to find solutions.

- Returning to work after major trauma
  Getting back to work can be good for your health and wellbeing so start planning a return to work with your employer and WorkSafe Victoria.

- Work-related stress
  Work-related stress causes an increase in sick days and absenteeism, a higher turnover of staff and a drop in productivity.

- Retrenchment or financial loss
  It is normal to feel shocked, distressed, angry, guilty, worthless or powerless when you lose your job or face an unexpected change in your financial situation.

Flexible workplaces

- Breastfeeding and work
  You can successfully combine breastfeeding with work if you have support from your employer, colleagues and family.

- Hearing loss - communication in the workplace
  If you are unsure how to best communicate with a colleague who has a hearing impairment, ask them.

Environmental health and safety

- 10 tips for work safety
  Take regular work breaks ... 10 tips for work safety.

- Asbestos and your health
  When asbestos fibres become airborne, people working with asbestos may inhale particles which remain in their lungs.

- Cadmium
  Low-level exposure to cadmium over a long period of time may cause health effects because cadmium can accumulate in the body.

- Eye safety at work
  Wearing eye protection appropriate for the task can significantly reduce the risk of injury.

- Look after your health at harvest time (slideshow)
  Farmer health, wellbeing and safety are often neglected when facing the pressures of harvest. Simple safety measures can dramatically reduce the risk of injury and illness.

- Q fever
  Q fever is caused by a micro-organism that can be carried by cattle, sheep and goats.

- Returning to work after major trauma (video)
  If illness or injury forces you to take time off from work, it can have a big impact on your life. The time it takes to recover full health can change the way you feel about yourself. You can lose...

- Shiftwork
  A person working the night shift is at greater risk of various disorders and accidents.

- Skin cancer - protecting outdoor workers
  People who work outdoors are in one of the highest risk groups for skin cancer.

- Workplace conflict
  A clash of personalities at work is bad for business, because it can affect productivity and increase absenteeism.

Injuries and rehabilitation

- Computer-related injuries
  Using a computer can contribute to problems of the muscles and joints, eyestrain and overuse injuries of the arms, wrists and hands.

- Financial support after a workplace trauma
  Workers compensation insurance covers medical expenses of workers injured at work.

- Look after your health at harvest time (slideshow)
  Farmer health, wellbeing and safety are often neglected when facing the pressures of harvest. Simple safety measures can dramatically reduce the risk of injury.
Returning to work after major trauma

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Workplace safety - coping with a critical incident

Stress responses can develop over time after trauma, and support may be required by some workers or groups.

Workplace safety - manual handling injuries

A person can be injured when handling objects in a variety of ways including pulling, pushing, holding or restraining.

Work-related fatalities

In 2013, 196 people lost their lives due to work-related accidents in Australia. Find out more about your industry and which organisations help to prevent work-related deaths in your workplace.

Related Information

- Workplace safety - overuse injuries
  
  Occupational overuse syndrome, also known as RSI, is caused by repetitive movements or awkward postures...

- Look after your health at harvest time
  
  Farmer health, wellbeing and safety are often neglected when facing the pressures of harvest. Simple safety measures can dramatically reduce the risk of injury and illness...

- Workplace safety - coping with a critical incident
  
  Stress responses can develop over time after trauma, and support may be required by some workers or groups.

- Workplace safety - dangerous goods
  
  Dangerous goods are objects or substances that are potentially harmful to people or the environment, such as explosives or chemicals...

- Workplace safety - noise pollution
  
  There are many ways to reduce exposure to excessive noise in the workplace.

Home

Related information on other websites

- Sleep Disorders Australia, SA - fact sheets.

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