

Sleep Management

This handout will provide you with information about sleep, including what it is and how it occurs, and also provide you with strategies to better manage and improve your sleeping patterns.

- This handout contains a range of resources designed to help you improve your sleep quality and quantity.
- There are several sections and activities for you to work through at your own pace and in your own time.
- To benefit from the program and improve your sleep patterns, you are encouraged to practise your newly learnt skills as much as possible.
- Following this handout is a valuable step towards becoming better able to improve your quality and quantity of sleep.

Medical assessment of your sleep problems is essential

Before you start using this handout on sleep management, it is important that you first talk to your doctor about your sleeping difficulties. Problems with sleep can be due to many causes, including diseases such as gastroparesis.

Given that difficulties with sleep can be a signal of possible problems it is always important to work with your doctor to help clarify what you are feeling and what is causing it.

Sleep and gastroparesis

Sleep difficulties are a common problem for a person with gastroparesis.

Sleep problems have been found to worsen some gastrointestinal symptoms, suggesting that sleep problems may have an association with the gastrointestinal tract. While it is known that the chronic nausea, pain, and discomfort associated with gastroparesis can have a significant impact on the ability to sleep, there is little research that examines the relationship between sleep and gastroparesis any further. It is possible that chronic sleep problems may influence the course of gastroparesis. Chronic sleep problems have also been found to play a role in a number of other chronic conditions such as asthma, lupus, and rheumatoid arthritis.

What is sleep & why do we do it?

We rarely give much thought to sleep, but it is essential for maintaining physical and mental health. Lack of sleep can result in a range of symptoms, including fatigue, decreased coordination, feeling more depressed and irritable, and experiencing problems with mental processing (e.g., concentration, memory, learning, decision-making). There is also growing evidence that lack of sleep is linked to many accidents, injuries, and serious health conditions.

While it is clear that sleep deprivation has a very disruptive influence on our lives, it is not fully understood why we need sleep. Many theories have been developed to provide an explanation of why sleep is a necessary human function, and it is likely that the true purpose of sleep is a combination of these ideas. One of the oldest theories suggests that sleep is an adaptive response, and once helped us to survive by keeping us inactive at night when we were more vulnerable. Alternatively, it is thought that sleep helps us to conserve our energy, and it also helps our body to rejuvenate, with many repair processes taking place primarily during sleep (e.g., muscle growth, tissue repair).

Sleep & the brain

It was once believed that the brain switched off during sleep, however research has since demonstrated that our brains are often more active during sleep than when we are awake. It has been suggested that while we sleep, our brains clear away the neurotransmitter adenosine, a by-product of all the neural activity that has occurred during the day, to help us feel more alert when we awaken. It is also thought that the brain works to consolidate our memories while we're sleeping, changing the structure and organization of the brain to help us remember and process information that we have learnt during the day.



The brain also plays an important role in our sleep patterns, firstly by regulating the body clock depending on how much light surrounds us. When the sun sets, the brain releases hormones to make us sleepy, and then it inhibits these hormones and releases different chemicals when the sun rises to help keep us awake. Additionally, each night we continuously go through different stages of sleep that are associated with changes in brain activity. The two main stages of sleep are rapid eye movement and non-rapid eye movement.

Stages of sleep

Rapid Eye Movement (REM)

REM occurs about once every 90-120 minutes, and is characterized by fast movements of the eyes, increased respiration, and increased brain activity. Dreaming occurs most frequently during REM, and although the sleeper is relaxed and immobile, their eye movements often correspond with dream content.

Non-Rapid Eye Movement (NREM)

NREM accounts for approximately 75% of sleep, and is divided into 4 stages according to the types of brain waves that are displayed.

The four stages of NREM sleep include:

- Stage 1 Light sleep, or dozing; the sleeper may not realize that they had been asleep.
- Stage 2 Lack of awareness of surroundings; body temperature, breathing, and heart rate decrease, while brain waves slow down.
- Stages 3 & 4 Deep sleep, or delta sleep; heart rate, blood pressure, and breathing slow even further. The body begins repair processes as the muscles relax.

Causes of sleep problems

As mentioned above, lack of sleep often results in difficulty concentrating, poor judgment, changes in mood, and decreased ability to learn and remember information. However, ongoing sleep issues are also associated with school or work absenteeism, and difficulty maintaining social relationships. Clearly, the importance of getting a good night's rest cannot be underestimated, and we need to gain insight into the factors that may be disrupting sleep.



Typical sleep problems include:

- Difficulty getting to sleep.
- Difficulty staying asleep.
- Poor quality sleep.
- Frequent waking during the night.
- Waking up too early (e.g., 4am).

Sometimes there can be physical reasons for sleeping difficulties, such as sleep apnoea (irregular breathing), snoring, or frequent limb movements. If you have a sleeping partner, you could ask them if they notice any unusual sleeping behaviour. You could also talk to your doctor if you think this applies to you.

It is also well known that sleep is adversely impacted upon by psychological factors such as stress, anxiety, and depression. For example, worriers have a greater risk of experiencing insomnia, and insomnia often begins during a time of stress. People who have trouble sleeping are also more likely to suffer from depression, and improving sleep quality is known to help depression. Sleep is also impacted upon by frustrations and concerns about not sleeping. Identifying and addressing any of these underlying issues can play a significant role in improving your sleep.

Be aware that like many human behaviours, sleep is based on habits. Good habits (e.g., engaging in relaxation before going to bed) will enhance sleep, while bad habits (e.g., having coffee or feeling anxious before going to bed) will lead to poor quality sleep.

Common myths about sleep

There are many misconceptions around sleep and sleep difficulties. The following are some of the most common misconceptions:

Myth 1: You must get 8 hours sleep!

Several factors influence the amount of sleep we need, these include health status, age and even the amount of physical and mental activity we undertake each day. Eight hours of sleep is seen as the average amount individuals need per 24 hours. However, many individuals can manage very well with less than eight hours sleep. You will know what's right for you by listening to your body and having enough energy to get through the day.

Myth 2: You can make up for lost sleep when you get a chance to sleep in on the weekend.

It is true that the body tries to recover lost sleep by sleeping longer when possible. In fact, the body is very effective at catching up on lost sleep. However, it is important to be aware that if you have lost sleep, your concentration and ability to perform at your best will be adversely affected. You may also find that your mood and ability to manage stress is lowered. While trying to catch up on sleep is restorative, it can also impact on your body's circadian rhythm (body clock) and consequently disrupt your sleep routine for the beginning of the week.

Myth 3: Medication is the only thing that can help you with sleep.

Sleep medication can be helpful to attain sleep in the short-term. However, long-term use is not recommended, and over time the medication will become less effective. Improving your sleep pattern is best addressed by working with your doctor to rule out physical problems that may be associated with your sleep and also identifying and employing strategies identified in this handout to help you sleep better.

Myth 4: As you get older you need less sleep.

From around the age of 30, our bodies tend to sleep the same total amount of time for the rest of our life. However, as we get older our sleep patterns do change; we tend not to attain as much rapid eye movement (REM) sleep, considered as the most restorative. In addition, we also tend to sleep more during the day, in the form of naps. Consequently time awake during the night may be increased.

Myth 5: Just lying down in a relaxed state is not helpful or restorative.

When individuals find it difficult to sleep, they often get into an unhelpful cycle of looking at the clock and becoming increasingly frustrated with their inability to sleep. Unfortunately, this frustration/anger cycle only reduces the likelihood of getting to sleep. Engaging in strategies to relax may not be as restorative as sleeping, but it will still help and it increases the chances of you falling to sleep quicker.

Myth 6: Napping isn't helpful.

Short 'power naps' during the day can be helpful and restorative. However, if you nap for too long it can also affect your circadian rhythms making it more difficult to get to sleep (or stay asleep) at night. For some individuals, napping provides an easy and effective way to catch up on lost sleep and it does not adversely impact on their sleep at night. However for others, napping can increase drowsiness and reduce attention and performance. Again, finding what works best for you is important.

Improving your sleep

There are a number of practices that can help to improve your sleep, including preparing your bedroom for sleep, preparing yourself for sleep, and managing the times when you have sleeping difficulties. Some of the tips listed below will be easier to include in your routine than others, and if you have had trouble sleeping for some time, it may take a little while to change your habits. However, it is important to persist in creating a sleep routine that best suits you, and most people report an improvement in their sleep quality and quantity within 3-4 weeks.

Preparing your sleep environment

To establish a good sleep routine, it is important that your brain associates your bedroom only with sleep and sex. Make sure that you are not using your bedroom as a living room, and avoid activities such as working, studying, making calls, eating, and watching television in your bedroom. It is also helpful to create a sleep environment that is comfortable, dark, quiet, well ventilated, and between 18-22°C. Use the tips below to help create a bedroom that encourages better sleep.

- Ensure that you have a comfortable mattress, pillows, and bed covers.
- If your bedroom is noisy, consider using earplugs.
- If your bedroom gets a lot of light, use an eye mask when sleeping, or consider getting thicker curtains.
- If necessary, install heating or cooling in the bedroom.
- If you find that your partner's sleeping habits disturb you, it may be better to sleep in separate bedrooms.
- Electronic equipment can be a distraction in the bedroom. It is important to keep televisions, radios, computers, and phones out of the bedroom.
- Do not keep a clock in your bedroom. If you need to use an alarm clock, turn the face of the clock towards the wall.
- If pets disturb your sleep, make an effort to keep them out of the bedroom.



During the day

What you do during the day can also affect the quality and quantity of your nighttime sleep. As mentioned above, it is important to stay out of your bedroom as much as possible during the day, so that your brain does not associate the room with being wide-awake. Using the following tips, you can also train your body clock to establish a regular sleep pattern.

- Go outside during the day. Sunlight helps to set your body clock and regulate melatonin, a hormone that is associated with sleep.
- To help your sleep pattern, the best time to be out in the sunshine is early in the morning.
- Exercise improves sleep. However, it's important not to exercise too close to bedtime, as this can initially make it harder to get to sleep. The best time for exercise is in the morning, but if this is not possible, ensure that you finish exercising at least 3 hours before bed.
- Napping during the day can interfere with sleep in some people. If you do nap, keep it to less than 20 minutes and make sure that you are awake for at least 4 hours before going to bed at night.

Getting ready for bed

Keeping a similar routine before going to bed each night helps your body to anticipate and prepare for sleep. The guidelines below will help you to avoid factors that may be confusing for your body clock, and will also help your body to understand when it's time for sleep.

- Our body clock likes consistency. It works best when we go to bed at the same time each night, and wake up at the same time each morning – including on weekends.
- Set aside 1-2 hours before bed as relaxation time. This may involve taking a bath, reading quietly, listening to music, or having a warm non-caffeinated, non-alcoholic drink. Other relaxation activities are discussed at the end of this handout.
- Drink enough water before bed so that you will not wake up thirsty, but not so much that you will need to get up to go to the toilet.
- Go to the toilet before bed, to avoid getting up during the night.
- Go to bed when you feel sleepy rather than falling asleep on the couch. Otherwise you may miss the opportunity for a proper night's sleep.
- Finish your evening meal at least 2 hours before bed. If you find yourself hungry before bed, try a light carbohydrate or dairy snack.
- Ensuring that your hands and feet are warm will help you get to sleep. You may consider using a hot water bottle or heat pack.
- Caffeine and cigarettes can make it difficult to get to sleep at night. Avoid cigarettes before bed, and refrain from caffeine (coffee, tea, chocolate, soft drinks) for at least 4 hours before bed.
- Avoid alcohol. While alcohol may help you fall asleep, it actually makes it more difficult to stay asleep during the night.
- Avoid stimulating activities before bed, such as computer games, television, emotional discussions etc.
- Keep lighting dim. Bright lights (including those from televisions, computer screens, mobile phones etc) can reduce melatonin, the hormone that helps us sleep.

What to do if you can't sleep

While following the guidelines will definitely help to build a better sleep routine, it is likely that you will still encounter times where it is difficult to sleep. Everybody wakes up at night, but worrying about it will only make it worse. If you're finding it hard to sleep, try the following:

- If you are not asleep within 20-30mins of going to bed, get up. Go into another room, keep the lights dim, and read a book, or listen to music. Do not watch television, use a computer or phone, or eat. Go back to bed when you feel sleepy.
- Do not watch the clock, as it will increase stress regardless of what the time is.
- Remember that everyone wakes up at night, and don't label yourself as an insomniac.
- Remember that even if you can't sleep, just resting can be very beneficial.
- If you find yourself worrying, replace the thoughts with calmer ones, such as imagining your favourite place or holiday. Instructions on how to challenge any persistent worrying thoughts are included at the end of this handout.

If you are still having trouble sleeping after completing the exercises at the end of this handout and establishing a positive sleep routine, your doctor may recommend one of the treatments in the following section, or refer you to a sleep specialist.

Treatments for sleeping problems

Choice relating to the type (or types) of treatment strategy for sleeping problems are based on several factors, including your current and past psychological and medical history. It is also important to talk to your doctor about any medications you are taking, as many common medications can cause or aggravate insomnia, e.g. corticosteroids, some antibiotics, some asthma medications. Treatments for sleep problems can be classified into either non-pharmacological or pharmacological approaches.

Non-pharmacological approaches, as discussed in this handout, include cognitive behaviour therapy, stress management, relaxation/breathing strategies, psychoeducation around sleep hygiene, and stimulus control strategies.

Other approaches include light therapy, and sound masking (also known as white noise) machines.

Pharmacological approaches include the use of benzodiazepines, so-called “Z drugs”, melatonin-based medication, and non-prescription medications. Some antidepressants can be useful for insomnia (even when the person is not depressed, and usually at doses below those used for depression).

Regarding the efficacy of these interventions, short term use of prescribed medication can be helpful, however only when used in the short term (days to weeks). In contrast the most effective long-term strategies to manage sleeping problems tend to be non-pharmacological and include cognitive behavioural strategies and sleep hygiene/stimulus control methods. Interestingly, research has suggested that individuals who take sleeping medications do not have significantly more sleep and that quality of sleep is often poorer.

A brief review of common sleep management treatments will now be outlined.

Medical approaches to sleep management

As identified previously, numerous factors, especially psychological factors, can adversely impact one’s ability to get to and stay asleep. Given this, doctors often recommend sleep-inducing medications only once all of the other approaches have failed. The primary reason for this is that sleep medications provide only short term benefit and longer use can actually hamper sleep and cause addiction.

You will need to discuss your concerns with your doctor and they will decide the best course of medical treatment with you. Medications to aid your sleep should be used as a last resort. It must be temporary and be strictly monitored by your doctor.



Your doctor must have a clear understanding of your sleeping difficulties, and all other psychological and physical health problems you are facing. Your doctor must also know all of the current medications you are taking: some medications can interfere with sleep (e.g. corticosteroids, some asthma medication and antibiotics); there can also be unwanted interactions between medications.

There are three common types of medications that can be used, in the short term, to help with sleeping problems: benzodiazepines, Z-drugs, and non-prescription medications, including melatonin. In addition, some antidepressants can be useful for insomnia (even when the person is not depressed, and usually at doses below those used for depression).

Some have quicker onset and clear quickly from the body ('short half-life'), so are useful for sleep-onset insomnia, (e.g. most Z-drugs: zolpidem, zopiclone). Others take longer to clear from the body ('long half-life'), so are useful for people who fall asleep initially, but then wake in the middle of the night and have trouble staying asleep. For these people, it can be useful to use a sleeping medication taken before bed-time which clears more slowly (e.g., the benzodiazepine, temazepam). Short half-life medications tend to have less 'morning-after' sedation or drowsiness than long half-life medications.

Due to the risk of dependence, sleep medications are available in Australia only in small packs (ranging from 7 to 25 tablets depending on the specific medication).

Non-prescription medications

Several "over the counter" sleep medications are now available and may be helpful in promoting sleep. An example is tryptophan, which is a common amino acid found in the body and some foods (e.g., peanuts, cheeses, meat). It promotes the release of the neurotransmitters such as serotonin, which enhances feelings of relaxation and promotes sleep. Other examples are kava, valerian and passionflower.

Other non-prescription medications target melatonin, either by increasing its action or amount within the brain.

Given their possible interactions with prescription medications and their potential adverse effects (such as liver damage with valerian) please consult with your doctor before consuming any non-prescription medication.

If withdrawing from sleep medication, it is best to do so gradually, and always with assistance from your doctor.



Light therapy

Light therapy involves the exposure to an artificial light source that produces a specific wavelength of light. These light emitting devices usually come in the form of specially designed fluorescent lamps, light emitting diodes, or lasers. The exposure to this light has been found to inhibit the release of melatonin, therefore increasing wakefulness.

Used regularly, and at the right time, these light emitting devices can help your body adjust its sleep-wake cycle, and therefore, promote sleep at night rather than during the day. Side effects of light therapy can include eye irritation and dryness, headache, nausea, and dryness of skin.

Talk to your doctor or a sleep specialist before using light based therapies.

Sound masking

Sound masking involves the use of noise, usually "white noise", to reduce or eliminate other distracting noises in your sleeping environment. The sounds produced are usually scattered and random, like wind moving through trees, the sound of rain, water moving in a stream. Sound masking can be achieved using very simple techniques and everyday items. For example having the radio on very softly and slightly out of tune or having a fan on at a slow and constant quiet level. Several commercial products are also available.

Sleep Management Exercises

Exercise 1: Monitoring your sleep

An important part of improving your sleep is to keep a diary of your sleep habits. (A sleep diary has been included in this handout.) The diary will help you understand factors that may contribute to the amount of sleep you get and allow you to monitor changes to your sleep patterns. It is important to complete the diary every day in order to get a clear picture of your current sleeping patterns.

Each morning when you wake up, make a record of how you slept the previous night and the activities that took place the day before that may have affected your sleep. For example, if you fill in the diary on a Monday morning you are recording your sleep on Sunday night and your activities on Sunday. Estimate the approximate time you spent asleep - if you are not sure take a guess.

Understanding your sleeping habits

After you have monitored your sleep using your sleep diary, spend a little more time understanding your sleep habits:

1. Are there any triggers that increase or decrease your sleep difficulties? (e.g. stressful situations at work, problems with my illness, increased consumption of certain types of foods or drinks, going to bed hungry, or exercising late at night)
2. What were you thinking when you first noticed that you were having difficulties sleeping? (This might be challenging as most often our thoughts occur in a split second and without our conscious awareness!).
3. The nights that you had a good night sleep what were you thinking then? (Knowing what helps to you get a good night sleep is as important as knowing what triggers your sleep difficulties).

A case study: Michelle's sleep diary

Over the past few years, Michelle has experienced almost constant problems with her gastroparesis. At first she experienced bouts of extreme discomfort and pain, but over the last few months she has become increasingly less interested in usually pleasurable activities. She has become teary, and very angry; asking why this has happened to her?

In addition to her gastroparesis specific symptoms, for the past month, Michelle has also had difficulties staying asleep - frequently waking up throughout the night. Sometimes Michelle lays there watching the clock feeling more and more frustrated by this difficulty staying asleep, stressing that the time before the alarm going off is getting closer and closer. She worries that she will not get enough sleep and be tired at work. Like many other people, Michelle is caught in a negative thought cycle with sleep and has not yet discovered that there are strategies that can help her improve her sleep.

Michelle's sleep diary

Date	Notes about sleep: Time going to sleep, waking time, number of sleep interruptions	Perceived sleep quality (Poor 0 = not at all to 5 = Excellent)	Activities I did, or food, drinks or medicines I had in the 3 hours before going to bed	Factors that impacted upon my sleep
5-5-11	1am, 6am, 2	2	Had cup of coffee 8pm	Worrying about work, waking up with discomfort throughout the night

Exercise 1: Monitoring your sleep

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Exercise 2: Setting goals for change

A key to better management of sleep is having clear goals for positive change, and activities that can become routine.

Over the following pages, identify goals you wish to work on, how you plan to achieve them, and who you may like to be involved. An example has been provided.

Successful goal planning and goal completion depends on having a clear set of goals that are:

1. Achievable.
2. Have clear time lines.
3. Are realistic.
4. Measurable.
5. Paced to fit with your abilities/pain levels at the time.
6. Based on several graded activities, easy ones first then gradually increasing in difficulty.
7. Rewarded! A goal is not complete until it is rewarded, otherwise why bother!

Example: Set goals in regards to sleep

How is your sleep? What impact is it having on your life?	What do you do when you find yourself struggling to sleep?	Which of the sleep improvement tips listed in this handout could you try?	Does this goal meet points 1-7 (listed above) for successful goal planning? Is it achievable?	What changes can you make to your sleep routine to help you achieve this goal?
<i>I am having difficulty sleeping and I am struggling at work from turning up tired.</i>	<i>I usually just go to bed and lay awake for hours trying to will myself to sleep.</i>	<i>I could try keeping my clock face out of sight so I am not tempted to focus on the time.</i>	<i>Yes, I can easily put my clock out of sight, and my alarm will ensure I do not risk running late in the morning.</i>	<i>I can make sure I go to bed at the same time each night, set my alarm for the same time each morning and put the clock face out of sight after that. I can try to relax and not think about time while I am in bed from now on.</i>

Exercise 2: Set goals in regards to sleep

<p>How is your sleep? What impact is it having on your life?</p>	<p>What do you do when you find yourself struggling to sleep?</p>	<p>Which of the sleep improvement tips listed in this handout could you try?</p>	<p>Does this goal meet points 1-7 (listed above) for successful goal planning? Is it achievable?</p>	<p>What changes can you make to your sleep routine to help you achieve this goal?</p>

Exercise 3: Engage in relaxation

Relaxation is not just about avoiding any activity and sitting or lying down as still as possible. Relaxation is about learning to engage in a purposeful activity that physically calms your body (e.g., reducing muscle tension and improving circulation) and mind (reduce worry/anxiety and focus on pain sensations). Relaxation can be hard to do when you first start, but with practice and time it will become easier and you will feel the benefits more quickly.



Throughout Modules 1-6 you learnt a number of relaxation strategies, including mindfulness, monitored breathing, progressive muscle relaxation, and guided imagery. All of these strategies will help to relax your mind and body, and create a better internal environment for sleep. We strongly encourage you to engage in these techniques when getting ready to go to sleep, or if you are struggling to sleep at night.

Exercise 4: Stretching

Stretching is a very effective method to reduce tension in your muscles and relax your body in preparation for sleep. Stretching involves extending a muscle group in a slow and gentle manner.

Working on one body part at a time, gently extend the part of the body you have selected, until it results in a feeling of general resistance and hold for 15 seconds. Avoid stretching 'into the pain', or making quick jerky movements. Remember to breathe during stretching, rather than 'hold' your breath, as this can increase muscle tension.

It is recommended that you speak with your doctor and/or a physiotherapist about what stretches will be most appropriate for you.

Exercise 5: Walking for improved mood and sleep



Commit to walking in the sunlight, and note any changes.

You'll start out by going for three 15-minute walks a week as early in the morning as you can manage. It may be tempting to go for your walks later in the morning or the day, but research has shown us that those who walk earlier do much better in improving their mood and their sleep. For example, if you walk regularly between 6 - 8 am, then you are more likely to feel the benefits than if you took this walk later in the day or if you didn't walk at all.

Exercise 6: Learn to reduce thinking and worrying in bed

What do you say to yourself when you can't sleep?

While completing the weekly sleep monitor, did you notice any negative thoughts, maybe you noticed saying to yourself: "I can't cope with this lack of sleep", "this insomnia is killing me", "I'm never going to get a good night's sleep", "I am going to be exhausted again tomorrow", "I am going to have a terrible day tomorrow", "There goes another night where I get no sleep", "I'll be awake all night", "I will fall asleep at work", etc.

So how do you challenge these negative thoughts? Try using the questions below for each negative thought that you have.

1. Is this thought realistic? Am I confusing a thought with a fact?
2. Where is the evidence for this thought?
3. What is the worst that could happen in this situation? And how likely is that going to happen?
4. Am I jumping to conclusions?
5. Am I seeing the glass half-empty or half-full?
6. What can I do now to help me get some sleep?