Sleeping Soundly

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One out of every three Australians will struggle with sleep issues at some stage in their life. The major contributing factors are thought to be increasing levels of obesity, the advancing age of the population and also the large amount of stress on individuals across all ages.

The need for sleep changes across the life span. The younger and growing individuals need more rest and sleep time.

- Newborns: 14 – 17 hours,
- Toddlers: 12 to 15 hours
- Pre-schoolers: 10-13 hours
- School aged kids: 9-11 hours
- Teenagers: 8-10 hours
- Adults: 7-9 hours
- Older adults: 5-8 hours (average 6 and a half hours)

These sleep requirements are for a 24-hour period, so if you are napping during the day, this is included.

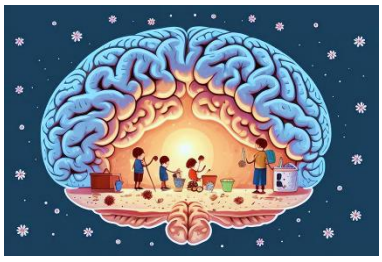
The time it takes to fall asleep also varies across the different age groups. In the babies and children, generally it takes no more than ten minutes. In adults it can take up to half an hour.

Your body has an internal clock that tells you when to sleep and when to wake. It is not just a simple system in the brain that switches us off at night and turns us back on in the morning. It is much more complex with multiple switches all acting in perfect synchrony. It includes consciousness, thinking, memory and emotion switches, and probably many more yet to be discovered! Everybody has their own individual body clock. We often classify people according to the timing of their body clock. The "Owls" are those that love to stay up late and fall asleep at about 11 pm to midnight. Left undisturbed they tend to wake up around 8 am. They are sluggish when they rise and peak in their activity later in the day. The "Fowls" are the morning people, who usually get to sleep no later than 9-10 pm. They generally can't stay in bed after about 6 am. Then there is everybody in between. In the elderly, there is an advancement the body clock so that they get sleepier earlier in the evening. This subsequently means that in combination with the fewer hours of sleep in this age group, they tend to wake up very early in the morning.

There are actually a number of stages of sleep, and these tend to have different purposes and benefits.

- **Stage 1 non-REM**: changeover stage where you are sliding into sleep, it takes several minutes, there is a slowing down of the heart, breathing and eye movements, and muscles relax and occasional twitch. Brain waves begin to slow down.
- **Stage 2 non-REM**: light sleep before you enter deeper sleep and it's quite easy to awaken you. There is further slowing and relaxation. Body temperature drops and eye movements stop. Brain wave activity slows but is marked by brief bursts of electrical activity. You spend more of your repeated sleep cycles in stage 2 sleep than in other sleep stages.
- **Stage 3 and 4 non-REM** : deep sleep and this is where physical recuperation takes place, and there is longer periods of this stage in first half of night. It has the slowest heartrate, breathing and brainwaves, and it is difficult to awaken you in these stages.
- **REM (rapid eye movements)** : starts about 90 minutes after falling asleep. Eyes move rapidly from side to side behind closed eyelids. The brain wave activity starts to resemble those that are seen in wakefulness. Your breathing becomes faster and irregular, and your heart rate and blood pressure increase to near waking levels. This is where most of your dreaming occurs. Your arm and leg muscles become temporarily paralyzed, which prevents you from acting out your dreams. As you age, you sleep less of your time in REM sleep. In this stage you are being restored mentally and emotionally. REM sleep helps in dealing with fears, stress and worries.

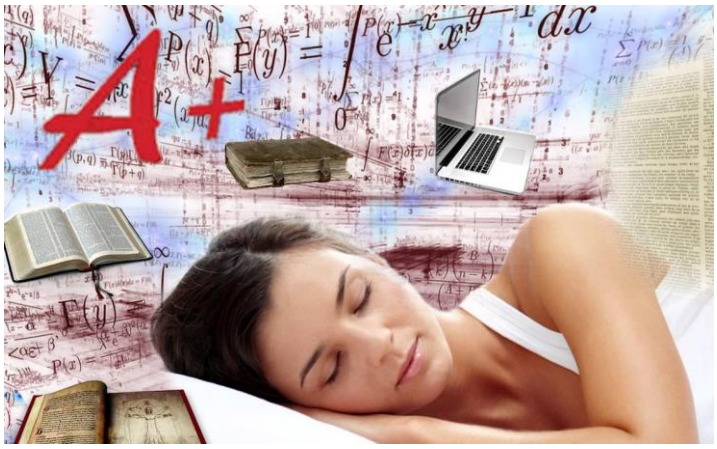
There is no need for a complex regime of detox supplements and rituals, as the brain has an amazing natural detox system all of its own. Whilst you are sleeping soundly the glymphatic system in your brain goes to work, clearing out all the toxins and waste products that have accumulated whilst you were awake. This detoxification process is vital for maintaining brain health and function. This glymphatic system is a series of channels that run along- side the arteries in the brain. As the arteries pulse with each heartbeat, this causes a pressure wave along these glymphatic channels which moves the fluid through this system. However, when you are awake, this system is shut down. Sleep, especially the deep slow wave stage, is when the glymphatic system become really active and filters out all the toxins and waste products that have built up, including some of the substances that are implicated with Alzheimer's disease. In part, this potentially explains the link between having fewer than seven hours of sleep, and the risk of developing dementia, and other brain disorders. To enhance the flow in the glymphatic system it is, therefore, best to try and get at least 7-8 hours each night and as many hours before midnight, to receive more of the slow wave



sleep in the early part of the night. Unfortunately, as we age, the glymphatic system goes into decline. Not just because we have less slow wave sleep with age, but also the arteries become stiffer and the pressure wave effects on the glymphatic channels are reduced, making the movement of the toxin filled fluid much less efficient. This also happens if you have high blood pressure which has a stiffening effect on the arteries in the brain. Whilst you cannot do anything about aging, there is a lot in your lifestyle that you can do to prevent hypertension. Exercise has also been shown to improve the flow through the glymphatic system at night. Sleeping on your side, when compared to backs or stomachs, is linked to better glymphatic operations and removal of toxins from the brain. The side position seems to provide the best drainage of blood from the brain though the jugular veins in the neck. Sleeping on the right side has a slight advantage because the right jugular vein in most people is slightly larger than the left. When we are laying on the right side, the expansion of the right jugular vein is at an absolute maximum, whereas the left jugular vein, the smaller one, is in a relaxed state with a smaller diameter. The research supports this idea that the more time you spend on your side in sleep, the healthier your brain.

There are numerous benefits to a good night sleep:

- Lower levels of the stress hormone, cortisol
- Lower blood sugar levels and better sensitivity to insulin
- Higher daytime levels of the hormone, leptin, which reduces bad food seeking behaviours
- Lower BP and improved circulation to the arms and legs
- Increased stamina and faster recovery time of the cardiovascular system
- There is enhanced learning, memory and concentration:
- Cognitive processing is a lot faster and daytime alertness is improved
- It helps repair the DNA of each cell
- There is a greater production of the anti-cancer cytokines
- Overall immune function improvements
- Improved sense of well-being and happiness.



Insomnia is the habit of poor sleep that has been developed. There is poor sleep functioning at night such as trouble getting to sleep, waking up frequently and trouble staying asleep, waking up too early, or sleep is not refreshing. Importantly, there is also poor daytime functioning. Fatigue, lack of energy, daytime sleepiness, impairment in concentration and memory, dysregulation of the mood and irritability, poor motivation and enjoyment, and errors and accidents at work and driving. These are all possible consequences. Having a great sleep at night will help to improve your daytime functioning. Conversely however, a great day will help to improve your night time sleeping habits.

There are so many reasons – hundreds of them – as to why we are not getting a good night sleep. Stress is a big one. Many people have a poor work and life balance and struggle to find time to wind down, relax and sleep peacefully. Traumatic life events such as losing jobs, divorce and death in the family are also significant stressors. There are a number of habits that impact our sleep cycle including irregular bedtime and waking times, day naps, not enough daily exercise, eating late in the evening, and exposure to screens of our smart devices – watches, phones, tablets and TVs with blue light. Mental health disorders such as Anxiety, Depression, Post-traumatic Disorder can all interfere with sleep. Medical conditions including all forms of dementia, diabetes, reflux disease, and heart disease have also been linked to insomnia. Chronic pain from any cause whether its arthritis or traumatic injury is a major factor in sleep disturbance. Caffeine and nicotine are both stimulants and can prevent us from falling asleep. Although alcohol may seem to help you to get to sleep, it also prevents the deeper stages of sleep and often causes frequent wakening and disturbed sleep through the night. These are but just a few of the reasons that we may not be getting a good night sleep.

With chronic insomnia, you really can accrue a serious sleep debt. Even if you only sleep one less hour per night than your body needs, in one week cycle, you would have lost almost an entire night sleep. There is a serious cost to your health because of this sleep debt, over time.

Psychological consequences:

- Increased irritability and anger
- Poor motivation, lack of spontaneity, listless
- Higher tension and emotional distress
- Decreased productivity and efficiency
- Decreased alertness
- Impaired learning, memory and concentration
- Inaccurate perceptions in social situations – you have difficulties seeing things as they truly are and may misread the things that are happening around you
- Decreased reasoning ability and have a lot more difficulty making sense of things and making good decisions and
- Impaired moral judgement

Poor sleep also strongly correlates with a variety of mental health problems such as major depression, bipolar disorder and pre-menstrual syndrome

Muscle and Nervous System consequences:

- A sleep debt also causes problems in our muscle and nervous System including
- Fine hand tremors
- Difficulty focusing the eyes
- Heightened sensitivity to pain
- Intolerance to noise
- Slower reflexes
- Muscle weakness
- Fatigue
- Headaches

Immune System consequences:

- Decreases immune function and increases inflammatory markers
- Increases the risk of succumbing to common viruses, bacterial infections, and cancer

Cardiovascular System consequences:

- Elevated blood pressure at night
- Increased risk of heart attack, stroke and abnormal heart rhythms
- All this increases the risk of death from Cardiovascular Disease

Endocrine System consequences:

- Higher levels of cortisol, the stress hormone, at night
- Higher sugar levels and a decrease in insulin sensitivity
- This increases the risk of developing diabetes
- Lower daytime levels of leptin (appetite suppressing hormone) and higher levels of ghrelin (hunger hormone) so there is an increase in food seeking behaviours with a much higher intake of carbohydrates: research has shown that reducing the hours of sleep in men and women down to four hours led to these individuals seeking out and consuming about 1200kj more each day on top of their usual intake – and this was not generally healthy foods.
- There is consequently a two-fold increased risk of becoming obese with a history of insomnia.

Sleep debt also leads to increased mistakes in the DNA code with less ability to repair them.

What can you do to improve your chance of a good night sleep?

Determine your sleep needs first: Are you getting enough and at the right time for your lifestyle? If you enjoy power naps in the day, do not let them go over half-an-hour as they interfere with your sleep.

Establish a regular sleep cycle: Set your bedtime and wake time and try to be consistent as our bodies like to have regular rhythms.

Keep extremities warm: Before bed have a warm shower, a warm non-caffeinated beverage, wear socks and adequate bed covers.

Exercise: If you have a regular exercise programme, the deep sleep stages start sooner and last longer. Just avoid exercising less than 4 hours before bed.

Diet: The whole-food plant-based diet is the best option. High levels of saturated fat, processed sugars, low fibre intake, and meat all interfere with sleep. Be sure to include some lettuce and kiwi fruit! Avoid eating just before bed, have your last meal up to three hours before bed and keep it light.

Avoid caffeine, alcohol and nicotine.

Avoid anything too salty, especially at dinner times.

Stay well hydrated during the day.

Morning Sunlight: Improve your exposure to light – preferably natural light. Morning light is the best. Turn off all the unnecessary lights about an hour-and-a-half before bed time, or dim the lights that you can.

Mental preparation throughout the day: Organise and make lists, accept adversities calmly, and don't stress about the things that don't get done. Don't carry grudges – wise proverb – "don't let the sun set on your anger". If you have some very difficult emotional stressors in your life then psychological counselling is also a really good option.

Relaxation before bed: Stop doing any significantly stimulating activities about an hour-and-a-half before bed, listen to some relaxing music, or read some calming literature. For those who have spiritual commitments – prayer and spending time with God is helpful.

Environment for sleep: Use the bed for sleeping and intimate relations, minimise the light and noise in the bedroom, and do not have a digital clock that you can watch!

Treat underlying chronic illness: If you have any underlying chronic medical or psychological condition, then it is really important that manage and treat these, as they can have a significant impact on your sleep.

Claim the Bible Promises:

- He [God] gives sleep to His beloved…. *Psalm 127:2*
- In peace I will lie down and sleep, for you alone, LORD, make me dwell in safety. *Psalm 4:8*
- When you lie down, you will not be afraid; Yes, you will lie down and your sleep will be sweet. *Proverbs 3:24*

There are a variety of herbs and supplements that are used to help manage insomnia. Also Keep in mind, that these are generally gentle remedies and may take weeks to make significant impacts on your insomnia.

Passionflower:

- Provides some sedative properties on the nervous system.
- Specifically indicated for insomnia.
- Helps with general restlessness, irritability and also gives some pain relief for nerve pain.

Skullcap:

- Has both sedative and restorative functions on the nervous system.
- Particularly useful when there is nervous tension, exhaustion and debility.

Valerian

- A well-known gentle tranquilising and calming herb.
- Helpful in treating most anxiety, nervous tension states and insomnia.
- Not to use with pharmaceutical sedatives or alcohol
- It combines really well with Skullcap and Passionflower.

Hops

- Helps to relax and it relieves anxiety and insomnia.
- Can also assist with pain management.

Chamomile

- Mild sedative properties and great to have as a tea before bed.

Lemon Balm

- Helpful for restlessness and anxiety and improves sleep quality especially when used in combination with valerian.

Magnesium.

- Magnesium has been shown to improve our sleep quality by increasing the amount of slow wave sleep, and also it decreases the stress hormones.
- Great relaxing mineral.
- Food sources of magnesium include seaweed, wholegrains, nuts, soy and molasses.