

## Good night, sleep tight

Approximately  $\frac{1}{3}$  of the Australian population have difficulty sleeping at any one time, although this figure is thought to be a low estimation. Not included in this figure is the number of people who choose, or whose lifestyle demands, that they have reduced hours of sleep. A study conducted in 2004 estimated that over 1.2 million Australians experience sleep disorders. It is no wonder, in this society where we all too often burn the candle at both ends, that we catch ourselves yawning all too often!

### Why does sleep matter?

The importance of sleep cannot be underestimated. In animal studies, forced wakefulness has been found to result in skin lesions, increased appetite, loss of body weight, reduced body temperature, premature ageing, cardiovascular disorders, blood poisoning and eventually, after 2-3 weeks, death.

In human studies reduced quality and quantity of sleep can be associated with an increased risk of:

- Cardiovascular disease
- Weight gain/obesity
- Type 2 Diabetes
- High Blood Pressure
- Reduced immune function
- Metabolism disorders
- Reduced concentration and learning ability
- Reduced memory recall
- Premature ageing
- Fatigue
- Lethargy
- Emotional instability

### Why do we sleep?

Scientists are still trying to understand why we sleep. It is now understood that sleep is not associated with a period of inactivity, but rather it is an active process where the brain and body undertake many important functions. Sleep is vital to our health and wellbeing.

### How much sleep do I need?

As we age our sleep requirements change. The table below outlines some guidelines for the hours of sleep required by people of various ages. However it is important that you listen to your body, and work out what suits you best. For example pregnant or lactating women have an increased need for sleep, and it is common for elderly people to have a nap throughout the day, and have shorter sleeping periods over night. In times of high stress, including the stress of recovering from injury or illness, it is vital that we listen to our bodies, and rest more than usual.

Age	Average amount of sleep per day (hours)
1-6 months	16-16.5
6-18 months	14-16
18 months-4 years	12-14
4-7 years	11 -13
7-10 years	10-10.5
10-13 years	10
13-16 years	9-10
16 years and above	8-9

### The science of sleep

There are two main types of sleep. Rapid eye movement (REM) sleep and non-rapid eye movement sleep (NREM) sleep. NREM sleep is then broken down into 3 stages:

- N1 (very light sleep),
- N2 (slightly deeper sleep) and,
- N3 (slow wave deep sleep)

The sleep of a healthy adult should cycle through these stages, with the average sleep cycle lasting from 70 to 120 minutes. Each of these stages is important to our health, and getting the right mix of them will ensure a night of good quality sleep.

A good way to know if you had a lot of REM sleep is to try to judge the amount of dreams you have had, as most dreaming occurs during this phase. In contrast “Sleeping like the dead” (and not having any dreams) is often an indication that you spent most of your night in the deeper NREM phase of sleep.

### How is sleep regulated?

There are internal and external factors (e.g. light, noise and caffeine) that regulate the transition between wakefulness and sleep. Within the brain there are chemicals that are released to keep us awake, for example histamine (anti-histamine drugs block this action, which is why they can cause drowsiness). On the other hand, our levels of a different brain chemical (adenosine) rise throughout the day, leading to an increase in drowsiness. Caffeine inhibits the action of adenosine, thus contributing to the feeling of wakefulness. The balance between these brain chemicals, changes the longer we go without sleep, with the level of adenosine eventually tipping the scale, causing drowsiness/sleep to win.

Our body's personal clock (found in our brain) also helps to regulate our sleep. The light that enters through our eyes resets this internal body clock, so that we respond to a day/night cycle. This clock is then responsible for changes in body temperature, metabolism and the release of hormones. This is one of the reasons why we experience "jet lag", as our body clock takes time to adjust to the time difference.

### **Other factors that affect our sleep**

If you consistently miss a night's sleep, have an inconsistent sleep schedule, travel frequently, or have frequently disturbed sleep; your sleep cycle can be altered. This can lead to a longer period of REM (light) sleep and less good quality NREM (deep) sleep.

Alcohol consumption can also alter your sleep cycle, resulting in more frequent waking, and less deep sleep later in the night.

Since the invention of electricity our exposure to light after sunset has dramatically increased, leading to later sleep times. If you wake during the night, try to limit your exposure to light, as this can confuse your internal body clock.

### **I'm not sleeping well, what should I do?**

"Sleep Hygiene" is a term that is being used to describe our sleeping habits. Having good sleep hygiene, means that our sleep/bedtime habits lead to consistently good quality and sufficient quantity of sleep.

This can include:

#### **Having a regular "bedtime"**

By going to bed at the same time each night, and setting the alarm to wake in the morning, our internal body clock begins a rhythm that will lead to a regular pattern of sleep. After a short time of doing this, your body should begin to let you know when it's bedtime. Provided you are having the recommended hours of sleep, you may find you wake just before your alarm, refreshed and ready to begin your day!

#### **Regular exercise**

Regular exercise has been found to improve sleeping patterns. This is especially so if it is conducted in the morning sun (remember that the light that enters through our eyes helps to set our body clock). If you don't have time to exercise in the morning, try not to do it too close to your bedtime, as this will interfere with your sleeping habits.

#### **Early morning sun**

Open the blinds in the morning, or enjoy the walk to the train station without your sunglasses. Getting the early morning sun (even if you are not exercising) is essential to setting your body clock.

#### **Create a comfortable sleeping environment**

Your sleep can be hindered if you have a messy, chaotic bedroom. Ensuring that the levels of temperature, noise and light are appropriate for a restful sleep is important. Removing bright alarm clocks, mobile phones, computers and sound systems may help in creating an uncluttered restful environment.

### **Listen to your body**

- If you are cold, warm the room, wear warmer pyjamas or put on some bed socks.
- If you are hot, cool the room or remove excess clothing.
- If you have a sore neck or back, see an osteopath or chiropractor to assist you with the correct choice of pillow and mattress.
- Going to bed too hungry or too full will alter your sleep quality, have a small protein rich supper, or eat your dinner earlier, if these are common complaints for you.
- Understand that your body needs sleep, and that it is important that you give yourself adequate sleep.
- Caffeine consumed in the afternoon interferes with your body's natural release of "sleepy" brain chemicals avoid caffeine from 3pm.

We know that going without sleep for extended periods of time makes us feel terrible, and that waking refreshed after a good nights sleep can lead to a feeling of empowerment and readiness to take on anything that comes our way. So good night, sleep tight, and see your Naturopath or Doctor if you have any concerns regarding your quality or quantity of sleep.

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