

## INSOMNIA MANAGEMENT - 2

### SLEEP: Facts & Hygiene

*Sleep is a natural process that allows the body and brain to rest and recover. For most people the sleep process finds its own balance and it causes few problems. However, factors such as ageing, lifestyle commitments, events, worries and many physical conditions can alter the balance. This may lead to increased anxiety and stress that can cause further difficulty in gaining satisfactory sleep.*

*To improve the situation it is useful to understand what is affecting the sleep process. This handbook provides information on the sleep cycle and its purpose, and describes day and night routines that promote good sleep habits.*

### Sleep

Sleep is not one long period of unconsciousness but a series of cycles each lasting approximately 90 minutes.

Each cycle consists of REM and Non-REM states. The Non-REM State is also divided into four stages.

Non-REM	Stage 1	light sleep
	Stage 2	light-moderate sleep
	Stage 3	moderate-deep sleep
	Stage 4	deep sleep
REM	(Rapid Eye Movement or dreaming)	

### Understanding the Sleep Cycle

There are two Sleep Charts (end of document) showing the sleep cycle through the various states and stages that illustrate good sleep patterns. The first is for a younger adult and the second is for an older adult.

The differences between the two charts show that:

- The younger adult spends larger portions of the night in Stage 2 sleep, gains more Stage 3 and 4 sleep and wakes less frequently,
- the older adults spends greater portions of the night in Stages 1 and 2 sleep, wakes four to five times a night, and generally does not reach Stage 4 sleep.

This is an average and acceptable pattern for an older adult.

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When viewing the charts consider the following facts:

- Sleep needs vary from person to person,
- It is normal for adults to wake several times a night, if only for a minute or so,
- Ageing alters the sleep cycle.

### Progressive Stages of the Sleep Cycle

#### Stage 1

LIGHT SLEEP commences and usually extends for only a short period (5-10 minutes).

The body temperature begins to drop and muscles become relaxed. You are easy to wake during Stage 1, and if this occurs you may not realise you have been asleep.

#### Stage 2

LIGHT-MODERATE SLEEP (approximately 30 – 45 minutes).

You are still easy to wake during Stage 2 especially later in the night. If woken from this sleep you are likely to feel as if you have already been awake, since our minds are active during sleep.

#### Stage 3 and Stage 4

MODERATE-DEEP SLEEP and DEEP SLEEP

In these stages your breathing and muscles become more relaxed, your heart rate slows and sensitivity to sound and light diminish. You will be more difficult to wake during Stage 3 and particularly so in Stage 4.

Stage 4 satisfies our sleep needs the most effectively. We are unaware of Stage 4 as we rarely wake unless interrupted by bright light or noise.

We may get 10 to 40 minutes of deep sleep in the first cycle of sleep, depending on our age.

About 80 minutes after falling asleep our sleep becomes lighter progressing into Stage 3, then Stage 2 and then into the first period of REM sleep.

#### REM (Rapid Eye Movement)

This is a different state from Non-REM (Stages 1 to 4). In REM sleep our mind is very active and usually experiences vivid dreams, however we will not remember these dreams unless we wake from REM sleep.

REM periods are short at the beginning of the sleep period but may be as long as 30 to 40 minutes before finally waking in the morning.

This completes the first 90 minute sleep cycle.

The rest of the sleep period repeats three or four more of these sleep cycles.

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## Facts about Sleep

### **How much sleep do we need?**

Sleep can easily adapt to an individual's circumstance and needs.

It can tolerate being denied if necessary for several days, only to rebound when recovery sleep becomes possible.

Sleep needs vary from person to person. The average amount of sleep for an adult is about seven to eight hours, but sleep needs can range from five to ten hours per night.

Judgement on whether we are getting enough sleep depends on how well we function during the day. If we do not feel sleepy and tired, then our sleep is adequate, even if it is not the average length of time.

Most of the restorative effects of a night's sleep come during the first three to five hours when most deep sleep occurs. Some researchers have called this **core sleep**. Research shows it is easy to function normally during the day if you obtain this type of sleep. Research also shows that insomniacs typically obtain their core sleep every night despite believing they have obtained much less sleep.

No-one functions at peak levels everyday and within a day, we all have variations in performance and mood. For example, it usually takes 20 to 30 minutes after waking in the morning to feel reasonably alert. It is also normal to feel drowsy after lunch. Even after a sleepless night, people normally cope quite well even while feeling tired. A good night's sleep usually puts us right back on track.

### **Awakenings**

Adults will usually wake up a few times during the night. This often occurs during the light sleep stages spaced across the night. Each awakening can be as short as a minute and often goes unremembered.

When an insomnia sufferer wakes up in one of these normal awakenings, their fear and anxiety of being unable to return to sleep prolongs the waking period and causes further insomnia.

### **Our perception of sleep**

The number of brief awakenings can also affect the way we view the quality of our sleep.

Sometimes when woken from light sleep people can feel they were already awake. This is because the thought processes present during light sleep are similar to those we have if awake and relaxed in bed with our eyes closed.

It is possible to fall asleep at the beginning of the night, go through a sleep cycle then wake 90 minutes later out of light sleep, and feel you have been awake the full 90 minutes.

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A common experience is to wake late in the night from light sleep and after a few minutes drift back to sleep. Then to wake up again maybe 30 to 60 minutes later, but be completely unaware of the occurrence of the sleep in between.

### **The effects of ageing on sleep**

People usually begin sleeping less as they enter middle age. The number of awakenings through the night increases as sleep becomes lighter and rarely enters the deeper stages. Lighter sleep with more awakenings is normal in older adults and has no damaging effects on daytime functioning.

In retirement people sometimes choose to spend more time in bed. The result of this will be to have more time awake in bed. If the time in bed is comfortable, relaxed and free of worry or frustration then it is appropriate. However, if these periods begin to cause concern, they can lengthen and insomnia can develop.

### **Consequences of losing sleep**

Most people assume that loss of sleep causes their mental and physical abilities to decline. Research on sleep deprivation shows that the body has a remarkable tolerance for sleep loss.

Lack of sleep results in three effects:

- Daytime drowsiness mainly during mundane activities
- Tendency to become irritable
- Performance is similar and drops only slightly in both routine/boring or complex/challenging tasks

### **Making up lost sleep**

Sleep following sleep deprivation is deeper and more efficient than usual. This means that it is not necessary to make up lost sleep on an hour-for-hour basis. It does not take a long time to recover from one or many nights of poor sleep.

### **Napping**

Recent research suggests our bodies were designed for at least one afternoon nap a day. If you like taking a daytime nap then it is important to remember that the amount of sleep you need at night will be less, especially if it is a long nap (greater than half an hour).

A brief nap of 10-15 minutes is unlikely to interfere with the following night's sleep and can be as restorative as a longer one.

If a person becomes skilled at taking a needed nap, it can be a way of reducing any anxiety about wakeful periods at night.

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### How to Promote a Good Sleep Routine

*Now that you have a clearer understanding of the sleep cycle, we can look at ways of promoting a good sleep pattern. Having a healthy day/night routine will support a regular sleep pattern.*

## The GOOD SLEEP GUIDE

### During the day

- Establish regular daily routines for meals, taking medication, performing chores and participating in activities.
- Spend time outdoors in the afternoon. Regular exposure to bright light helps to synchronise our body clock.
- Avoid daytime naps (unless naps are brief). Without long daytime naps you will feel more sleepy at bedtime.
- Keep active throughout each day.

### During the evening

- Relax and prepare for sleep.
- Put the day to rest. If necessary write a list of what is on your mind and decide to think about it tomorrow.
- If you have trouble 'switching off' at night, learn a relaxation routine. Practice the routine before you use it as a sleep aid.
- Take light exercise EARLY each evening. Exercise tends to make sleep deeper.
- Wind down before bedtime, with an hour of quiet activity (eg watching TV, reading or listening to music).
- Avoid caffeine for at least five hours before bedtime (eg coffee, tea, cola or cocoa) as it interferes with getting to sleep and staying asleep. If you regularly drink more than three cups of coffee a day, try to reduce your caffeine intake.
- Avoid smoking near bedtime and if you wake up during the night.
- Avoid alcohol near bedtime – it can cause awakenings later in the night.
- Make sure your bed and bedroom are comfortable – not too cold or warm and reduce light.
- Where possible reduce noises that are likely to keep you awake. If it is not possible to control the noise (eg barking dog) try to maintain a calm attitude and use a relaxation technique.
- Avoid a heavy meal too close to bedtime. (If you are hungry a light snack may help you sleep.)

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### At bedtime

- Develop a bedtime routine (warm bath, light bedtime snack, brushing hair). Your body will recognise that you are preparing for sleep. Carry out this routine each night.
- Go to bed only when you feel 'sleepy tired' and not before.
- Keep reading or watching TV activities for another room.
- Do not try to sleep with your bedroom light on.
- Enjoy relaxing in bed even if you do not at first fall asleep.
- Get up at the same time every morning.
- If unable to fall or return to sleep, try thinking of something pleasant.

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Sleep problems are quite common and they are not as damaging as you might think.

People usually cope quite well even after a sleepless night.

However, if the change is due to a specific circumstance, then this handbook should help you achieve an improved sleep pattern by carrying out the suggestions from the *Good Sleep Guide*.

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The Good Sleep Guide has been adapted from material originally produced by National Health Service (UK).

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### **Sleep Difficulties**

(Possible underlying causes)

#### ***Underlying medical condition***

*The most appropriate management strategy when insomnia is the result of another medical problem involves treatment of the condition.*

#### **Medication**

Certain medications can disrupt sleep especially in the elderly. Common types of drugs that cause insomnia include:

- Drugs and foods containing caffeine
- Products containing amphetamine type drugs (eg for suppression of appetite)
- Beta blockers
- Nasal decongestants and bronchodilating drugs used to treat asthma
- Drugs used to treat asthma
- Drugs to control high blood pressure
- Certain anti-depressants such as Prozac, Zoloft
- Steroid preparations and thyroid hormones.

#### **Sleep apnoea**

Sleep apnoea results from a breathing obstruction during sleep. On inspiration, an obstruction of the upper airways occurs presumably because of relaxed pharyngeal muscles. The obstruction continues for 20-60 seconds until the blood oxygen drops and carbon dioxide elevates to the point when brain stem arousal mechanisms activate. Muscle tension returns to air passages, breathing resumes, blood gases return to normal and the person returns to sleep. This process occurs sometimes hundreds of times a night. Obstructive sleep apnoea is the main contributor to excessive daytime sleepiness.

Severe obstructive apnoeacs have little deep or REM sleep despite six to eight hours sleep time and up to nine hours in bed.

Sufferers of this condition are usually unaware of the many arousals and the disrupted sleep. The sleep diary will reveal a rather long sleep time and frequent daytime naps. Often morning headaches and hypertension are present. It is more common in overweight middle-aged men who are heavy snorers. If you suspect you have sleep apnoea a sleep evaluation is necessary, and a referral to a sleep clinic recommended.

#### **Pain**

If arthritic or back pain is preventing sleep, it is critical to develop an appropriate analgesic management plan. In many cases pain relief may be insufficient to last the entire sleep period. Take pain relief immediately before bedtime and if necessary, some during the night. This can effectively reduce the associated sleep disorder.

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Research has shown that preventing pain before it occurs often requires less analgesia and makes it easier for the patient to go back to sleep.

It is recommended you speak to your doctor regarding pain management.

### **Restless Legs Syndrome and/or Periodic Limb Movements**

Periodic limb movements (brief skeletal muscle contraction, usually in the lower legs, lasting only a few seconds), are often accompanied by restless legs syndrome (experiences of discomfort described as crawling, tickling, itching sensation in the legs). Restless legs syndrome can prevent you from falling asleep and returning to sleep during the night.

Periodic limb movements may be infrequent or occur several thousand times during a typical sleep period. This can cause brief arousal and can disrupt sleep without the person being aware. Periodic limb movements are experienced by around 20 percent of chronic insomniacs when investigated in the sleep laboratory.

### **Depression**

If clinical depression is diagnosed, many health professionals believe that sleep disturbances over a reasonable period of time decrease a person's sense of general confidence in their ability to handle problems.

This negative self-image may lead to feelings of depression that can make the sleep problem worse. This can result in a further decrease in sleep and mood swings.

Depression may be an effect of the insomnia and not the cause. Further investigation may be required to identify the cause.

Treating the insomnia can reduce the depression. However, if depression is severe and has existed for a long time it needs to be treated. Once the depression is treated, then sleep will usually benefit as well.

### **Narcolepsy**

Narcolepsy occurs in approximately 40 per 100,000 of the general population. (This rate is similar to multiple sclerosis.) Narcolepsy is a disorder of excessive sleepiness that is associated with cataplexy (a loss of muscle tone triggered by strong emotions).

Onset of this condition usually occurs between early adolescence and age thirty and is a lifetime condition.

The person experiences attacks of daytime sleep that are sudden and overwhelming. These attacks can last from a few seconds up to an hour, on average lasting about two minutes. Although narcoleptics may sleep eight hours or more a night, many feel drowsy throughout the day and often report a disturbed night sleep.

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### **Insufficient sleep**

This is the most common cause of excessive sleepiness during the day and typically follows episodes of sleep restriction that have occurred over weeks or months.

The disorder is seen in adolescents, but can occur at any age and is associated with too many nocturnal/daytime commitments.

### **SLEEP CHARTS**

The example sleep charts show the different sleep patterns commonly experienced by the younger and older adult.

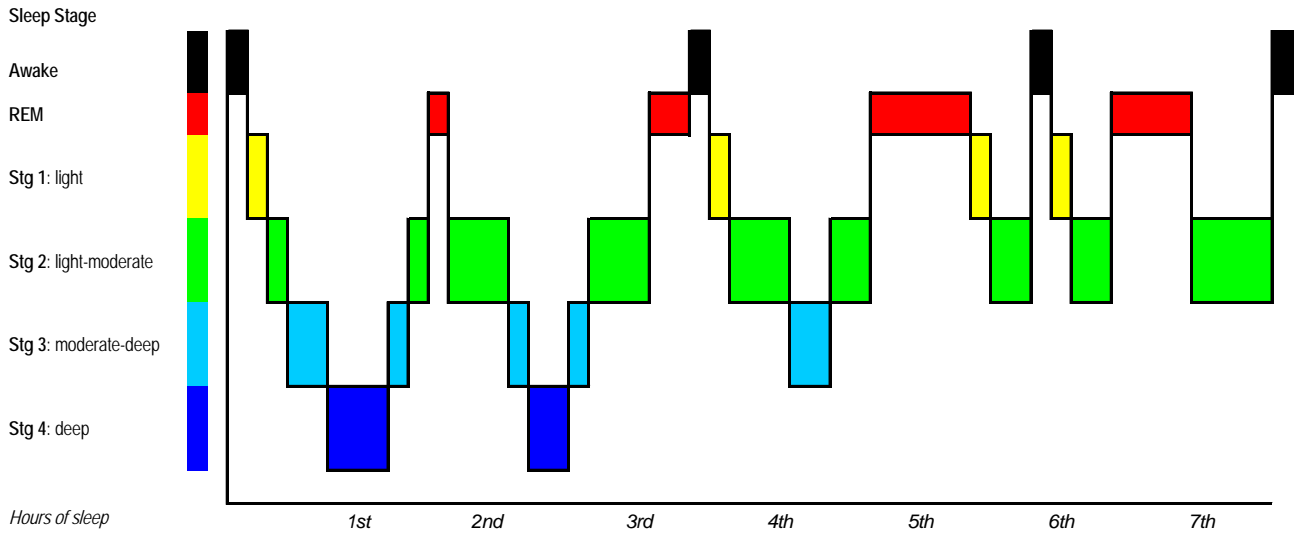
The older adult spends a greater portion of the night in stages 1 and 2 sleep (light to light-moderate sleep), and does not experience any stage 4 sleep.

The younger adult gains more stage 2 sleep (light to moderate) and has two periods of stage 4 sleep (deep).

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## SLEEP CHARTS

A 'good' sleep pattern for a **young adult**



A 'good' sleep pattern for an **older adult**  
An individual who has no daytime sleepiness or tiredness

