HOW TO SLEEP WELL

The science of sleeping smarter, living better and being productive

DR. NEIL STANLEY

CAPSTONE
A Wiley Brand

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ABOUT THE AUTHOR

I started my career in sleep in 1982 at the age of 16 when I got a job in the Neurosciences Division of the R.A.F. Institute of Aviation Medicine (IAM) in Farnborough, Hampshire. At the time the RAF were interested in sleep because of issues such as jet lag, aircrew work load, shift work, and medicines that could positively or negatively affect sleep. When I joined the IAM it had a three-bed sleep laboratory, although over the years this increased to six. During my time at IAM I was involved in numerous research studies, the most notable of which was my participation in a medical expedition to Pakistan where my colleagues and I recorded sleep in eight people for six nights at 18,500 feet (5400m) in the Karakoram Mountains.

In 1993 I took a position at the Human Psychopharmacology Research Unit (HPRU), part of the University of Surrey, where I eventually became Director of Sleep Research. At the HPRU I created and ran a 24-bed trials sleep laboratory, primarily designed for clinical trials into the effects of medications on sleep.

I received my PhD from the University of Surrey on the basis of my published works in 2004.

I have published 38 peer-review papers on various aspects of sleep research and psychopharmacology and I have presented my research to numerous national and international scientific and medical societies.

I am a member of the following professional bodies:

- European Sleep Research Society
- American Academy of Sleep Medicine
- British Sleep Society (Chairman 2000–2004, Committee member 1998–2000)

- European Society of Sleep Technologists

I was a member of the Executive Committee of the Assembly of National Sleep Societies (2004–2009) and through that I am a co-author of the guidelines for accreditation of Sleep Medicine Centres; guidelines for Sleep Medicine Education in Europe, and standard procedures for Adult Sleep Medicine.

In addition to setting up a clinical sleep service at the HPRU, I was also involved, on a freelance basis, in setting up and developing the sleep service at The London Clinic.

I have also worked freelance for Scansleep in Copenhagen and the Lovisenberg Hospital in Oslo.

I now spend most of my time writing about sleep and travelling worldwide lecturing on the benefits of good sleep to both healthcare professionals and members of the public. I am widely quoted by the UK and international media as a sleep expert.

Since 1982 I have spent much of my life watching other people sleep, (which when I write it down does sound rather sinister!).

Sleep is my life – it's what I do.

If I am not talking about sleep, I am writing about sleep; if I am not writing about sleep I am reading about sleep; if I am not reading about sleep, I am probably asleep.

(For more information see www.thesleepconsultancy.com).

MY SLEEP

I think that it is only right if I am going to give advice about sleep, that you should at least know if I practice what I preach. So below is a brief description of my sleep environment and habits.

- I sleep in a 6ft (Super King) Vispring Shetland Superb bed.

- The bed is dressed with pure wool, long, continental single duvets, and pure cotton bed linen.
- I ordinarily sleep in a separate bedroom from my partner.
- I use two down and feather pillows.
- I wear cotton pyjamas.
- I always sleep with a window open, however cold it is outside.
- I do not have the heating on overnight in the bedroom.
- I do not have a TV, computer or a radio in my bedroom.
- I always read a proper paper book before lights out.
- I am very much a morning person so if I wake up early I will get up.
- If I wake in the middle of the night I will usually switch the bedside light on and read for 10–60 minutes.
- I feel I need 9–9½ hours' sleep a night to be at my best.
- I have a pretty regular routine when I am at home I usually go to bed between 9:30–10:30 p.m. and awake and get up at 6–6:30 a.m., even at the weekends.
- I do snore sometimes, usually after alcohol, but also because I carry a bit more weight than perhaps I should.
- I do not exercise in the evening, to be honest I don't actually do much exercise at any time.
- I do not eat too late at night.
- I do not avoid caffeine or moderate alcohol in the evening.
- I sometimes, but not often, have a couple of beers or a couple of glasses of wine in the evening.
- I have paper and pen next to my bed to write down worries/thoughts that occur to me during the night.
- As a child I did not have any particular sleep problems.

Important Note

I am not medically qualified. However, I have spent all my adult life researching sleep. My advice is based on my research, my experience, my reading of the relevant scientific and popular literature on the subject, and a life-long interest in the subject of sleep. My advice is in no way intended to replace medical opinion and I must stress that if you are in any way worried about problems you, your partner, or your child are having with sleep, or if you have medical problems or are taking any treatments that disturb your sleep, you should always see your GP as only they, in the full knowledge of your medical history, can recommend an appropriate course of action.

INTRODUCTION

SLEEP WELL, LIVE BETTER

Many of us have a problem with everyday poor sleep, low-grade exhaustion, and sleepiness during the day that most of us experience on a more or less regular basis. A few years ago, I coined the word ‘semisomnia’ to describe the phenomena but alas it never really caught on.

To illustrate this point, honestly answer the question ‘how do you feel during the day on a scale of 0 to 10?’, where 0 is that you have an irresistible desire to fall asleep and 10 you are the most awake you have ever been. Now I can pretty much bet that none of you are a 10, but what is perhaps more worrying is that I also doubt that many of you are a 9 or 8. I know some of you think you are very awake but that is probably because you have fooled yourself into believing this in order to get you through the day. Honestly look at how you feel, is this really the best you could be, if so I would suggest a lifestyle change!

Because you don't feel good during the day, you spend time, and indeed money, on trying to feel better, the multi-vitamin pill to supposedly keep you healthy, the cup of coffee to get you going, the chocolate bar as a treat because you don't feel good, the ‘energy’ pill/drink to give you a boost during the day, the glass of wine to help you relax. At the end of the week you treat yourself to a spa treatment and you cannot wait for your holiday, when you can finally chill out. Just imagine how much better life could be and how much more productive you would be if each day you were at your best.

So why are you going through each day at less than your full potential? The most likely explanation is because you are not sleeping well. Simply, getting better sleep will make you feel better

each and every day. Sleeping better tonight will make you feel better tomorrow. Getting better sleep tomorrow night will make you feel better the next day, and so on.

And let's not forget that good sleep can also be one of our greatest pleasures.

> *'... for sleepe is that golden chaine that ties health and our bodies together.'*
>
> **Thomas Dekker (1609)**

So how to sleep better?

As parents we ensure our children wind down before bedtime – bath, story/lullaby, bed – because we know it works. But what is true for children also holds true for adults. It is just that in our busy lives we seem to forget the basics.

But really how hard can it be?

Imagine putting your children to bed, spending a few hours with your partner, and then running yourself a nice warm bath with your favourite bubbles, candles, nice music softly playing in the background, and maybe a small glass of wine. You luxuriate in the bath soaking away all the cares and worries of the day, then just as it starts to cool, you get out, put on a big fluffy towelling robe, and then get into a bed that has been freshly made.

That would work, wouldn't it?

So why don't you do it?

Imagine, your partner is upstairs in the bath, you are sitting in your candlelit drawing room, comfortable in your leather, button back armchair, wearing your velvet smoking jacket, a fire burning in the grate, your faithful hounds asleep at your feet, a generous measure of a fine single malt in a lead crystal glass in one hand, and a large Havana cigar in the other.

Ok maybe not everyone's idea of an ideal end to the day, but admit it, it comes close.

Getting better sleep should not be a chore or an inconvenience. It should be something we choose to do, something we want to do, and something that can be very pleasurable to do.

PROLOGUE: THE END OF THE WORLD IS NIGH!

Our ancestors were using fire, for heat, protection and light, between 300 000–400 000 years ago, before Homo sapiens evolved. Thus, for our entire history we have not been slaves to going to sleep with the rising and setting of the sun. The idea that this only happened recently, because of Edison and his lightbulb, is frankly ridiculous. The oldest evidence for something that specifically functioned as a bed dates back at least 77 000 years. Approximately 10 000 years ago we started building substantial structures, first in wood and later of stone, as our houses. Then about the same time we stopped believing in ghosts, witches and the devil, we started putting glass windows in our humble abodes. All these trappings of civilisation mean that we now sleep in an environment where

- There is a low risk from pathogens.
- We, and our livestock, are safe from predators and our enemies.
- We are dry and warm, without the need to tend the fire.
- We sleep privately with at most one other person, with little if any body contact.
- Our bedrooms are quiet, dark, fresh-smelling with access to clean fresh air.
- We sleep in a comfortable bed with clean dry bedding, free from biting parasites.
- We are secure behind locked and alarmed doors and windows so we no longer need someone to remain on watch or be woken by our guard dogs.

- The eight-hour day and working time directives exist to ensure we have adequate time for sleep.
- Computers and robots are promised to allow us to work even less.

These should be halcyon days for sleep.

However, it has been claimed that we are actually living in the midst of a ‘catastrophic’ sleep loss epidemic, which is having a ‘catastrophic’ impact on our health, our life expectancy, our safety and our productivity. Furthermore, claims are made that virtually every major disease is said to be linked to sleep loss and this lack of sleep is perhaps the greatest curable disease in the world right now.

Scary stuff I think you will agree, but is it actually true?

Well the first issue with this idea is one of definition, because it is not clear as to what the research is actually referring to when they talk about poor/ insufficient /short sleep. Is it people who naturally only need <6 hours sleep a night, i.e. they have a genetic disposition to short sleep, or is it someone who only sleeps <6 hours and by doing so is getting less sleep than they their genetics dictate. These are two different things, the first person cannot change nor can the risk of any negative effects, whereas the second person can, and probably should, change.

Are we really in the midst of a sleep-loss epidemic, ‘catastrophic’ or otherwise?

Despite what is claimed, there is actually very little reliable data about how we slept during the last hundred years and absolutely none from before that time. In light of all the recent scaremongering it is hard to believe that there is actually very little evidence to support the assertion that adult sleep duration has decreased in recent decades.

In a review of data from 15 countries from the 1960s until the 2000s, self-reported average sleep duration of adults was found to have actually increased in 7 countries: Bulgaria, Poland, Canada,

France, Britain, Korea, and the Netherlands (range: 0.1–1.7 min per night each year) and decreased in 6 countries: Japan, Russia, Finland, Germany, Belgium, and Austria (but only by 0.1–0.6 min per night each year). Inconsistent results were found for the United States and Sweden. There was no clear social or economic grouping of the countries that might explain the diverse trends. So even where there has been a decrease in sleep duration it could hardly be considered ‘catastrophic’.

A further study of data from 10 developed countries found that instead of the anticipated increase in short sleep, longer sleep durations had become more common across these nations. Short sleep had increased only in Italy and Norway but had decreased in Sweden, the United Kingdom, and the United States. Long sleep had increased in Australia, Finland, Sweden, the United Kingdom, and the United States but had decreased in Canada and Italy. No changes were observed in Germany or the Netherlands. The limited increases in short sleep duration challenge the claim of increasingly sleep-deprived societies, especially as long sleep has become more widespread than short sleep, at least when reported in time-use diaries. The worldwide decline in adult sleep duration seems to have been somewhat overstated.

A recent meta-analysis of objective sleep duration in healthy volunteers, as measured by polysomnography, (recording a person's brainwaves and other physiological variables in order to accurately measure sleep), also demonstrated that sleep time has not declined over the past 50 years.

But one might point out that the Centers for Disease Control and Prevention (CDC) states more than one third of US respondents reported typically sleeping less than 7 hours in a 24-hour period. While that may be true, it is only relevant firstly if you accept that fewer than 7 hours is the definition of short sleep and, secondly, if you can demonstrate using precisely the same survey methodology that there has been a change over time in the numbers of people having short sleep. Such data does not exist.

Is there evidence of a ‘catastrophic’ impact of poor sleep on our health, our life expectancy, our safety and our productivity?

The idea that an epidemic of insufficient sleep is a contributor to the development of major diseases, such as to Parkinson's, dementia, cancer, heart disease, obesity, diabetes, etc., rests largely on the question of whether sleep duration has declined in the last few decades. As shown above, evidence to support this notion does not in fact exist, at least in healthy sleepers.

Poor sleep may be associated with all of these illnesses, and doubtless many more, but a large study of middle-aged adults found that insomnia complaints did not predict an increased risk of death, nor interestingly did use of sleeping tablets.

The suggestion that there has been a ‘catastrophic’ impact of poor sleep on our life expectancy would seem hard to justify given the steady and significant increase in life expectancy over the last 150 years or so, for instance in the UK, data from the Office for National Statistics, has shown that over the last 100 years life expectancy at birth has increased by nearly 3 years per decade, essentially doubling since 1841.

	Male	**Female**
1841	40.17	42.16 years
1900	44.13	47.77 years
1950	66.42	71.54 years
2000	75.96	80.59 years
2010	78.97	82.80 years

Data from a large study showed that taking 7 hours sleep as the norm, people sleeping 6 hours had a 7% relatively greater risk of dying. This may seem to be worrying proof of the negative effects of short sleep on longevity, however this is not the whole story, the increased risk of dying in the group having 8 hours sleep was actually 12%, and for those sleeping 9 hours as much as 42% when compared to 7 hours.

With regards to safety, figures from the Bureau of Labor Statistics in the US shows that the number of non-fatal occupational injuries and illnesses per 100 full-time employees has fallen from 11 in 1973 to 2.9 in 2016.

Other data from the Bureau of Labor Statistics concerning productivity shows that US business sector output has increased more than ninefold since 1947 while the hours worked to produce that output have not quite doubled.

Of course, there are a number of contributory factors which account for the change in these figures, but to make the argument that there has been a 'catastrophic' effect of poor sleep seems problematic unless you are able to show that these figures would be appreciably different if we all slept better.

A survey attempted to quantify the benefit of the complete eradication of insomnia on work performance due to presenteeism, (this is where you are at work but are doing nothing productive), they found that it would lead to a reduction of between 5.4% and 7.8% of work performance lost.

A recent report found that a person sleeping less than six hours loses six more working days due to absenteeism or presenteeism per year than a worker sleeping seven to nine hours.

So, it is not really evident that there is a large negative impact of poor sleep, let alone one that is 'catastrophic'.

Is virtually every major disease linked to sleep loss?

Poor sleep may be linked with various diseases. However, these are associations not evidence of causation. Data from large studies mean that even a very small effect can become statistically significant, but that does not in any way mean that it is clinically relevant. For instance, data from the 'Sleep Heart Health Study' shows that people sleeping 6–7 hours had a significantly higher risk of hypertension that people sleeping 7–8 hours. However, the difference in blood pressure between the two groups was actually very small (systolic 2.1mmHg and diastolic 0.7mmHg).

Many of the modern-day illnesses such as Parkinson's, dementia, cancer, heart disease are due to our longevity, we die from them because we live long enough to develop them, something we perhaps would not do if our poor sleep was having a ‘catastrophic’ effect on our longevity.

It is also true that for many people sleep becomes more disturbed and potentially shorter as we get older and the risk of developing various diseases also increase with age. However, the headline risks quoted for these diseases are nearly always given merely for ‘adults’ with no breakdown of ages, this could be important as an increased risk of heart disease in a short sleeping 18-year old would be very worrying, an increased risk of heart disease in a 65-year old short sleeper could very well be simply a consequence of aging.

Coming back to the widely quoted statement from the CDC, mentioned above, that one third of all Americans are sleeping less than 7 hours in a 24-hour period – this is a good headline, because it implies that this is an issue facing all Americans. The problem is that research shows that poverty, unemployment, and being African-American or Latino/Hispanic are the risk factors for poor sleep, and interestingly they are also the risk factors for the majority of diseases linked to poor sleep. These populations are more prone both to an unhealthy lifestyle and to poor sleep. Doing something about poverty, unemployment, and racial inequalities would do much to lower the risk of disease and improve the sleep of the nation.

Interestingly it is rarely mention that, as seen in the data above concerning mortality, sleeping >8 hours can actually increase your risk of disease to a greater degree than short sleep e.g. the risk of developing diabetes in women.

Is lack of sleep the greatest curable disease in the world right now?

Malaria is curable and, according to the World Health Organisation in 2016, there were an estimated 216 million cases of malaria in 91 countries, which represented an increase of 5 million cases over

2015. Malaria caused 445 000 deaths in 2016. How many people have ever actually died of lack of sleep? Who knows, but it is safe to say that lack of sleep is not the greatest curable disease in the world right now, not by a long way. (It may seem petty and pedantic but lack of sleep isn't actually a ‘disease’ anyway.)

So why all the doom and gloom?

Why, given the lack of scientific evidence, do people (including bona fide sleep experts) make such alarmist statements? Do they really believe that it is helping the public to get better sleep?

Well I may be cynical but such statements do make great headlines, which not only result in bigger sales or increased ‘clicks’ for the media outlet but also is cheap and easy publicity for the book/app/workshop/consulting service/mattress, or whatever that is being ‘sold’ in the story. Given the appetite of the media for ‘doom and gloom’ making such statements can also be a good way to get your name in to the public consciousness and this can help in securing interviews across the media, attracting speaker engagements, advisory roles for multinationals, positions on the board of start-up companies or increased research funding, (for who could complain about increased research funding for something claimed to be the greatest curable disease in the world right now?).

There is no good thing about poor sleep, but the simple fact is that we are living longer and healthier than at any time in history. The sleep loss epidemic, if there is actually one, is perhaps not having too ‘catastrophic’ an effect on our morbidity and mortality.

So, if we aren't sleeping less than we did in the past, is that a good thing? You don't have to worry, the end of the world is not nigh, we are not all going to die from sleep deprivation. So, can you carry on regardless?

Well not quite. You see I believe that it is not the quality of sleep, or indeed the quantity, that is important to us in this day and age but our changing ‘need’ for sleep. Over the years research has shown that sleep, in particular deep, Slow Wave Sleep (SWS), plays a

crucial role in our capacity to deal with the events of the day, to lay down memories, and to learn new tasks. This is important because what has undeniably changed over the last few years is the amount of information we are routinely exposed to, which we then need to process during sleep. It does not matter that the vast majority of this 'information', the funny cat videos, and the selfies, have absolutely no benefit to the development of the individual or the enrichment of society. Our brain still needs to process them, even if it is just so that we can forget it. The amount of information is quite literally 'mind-blowing', according to Eric Schmidt, CEO of Google, speaking in 2010: 'Every two days now we create as much information as we did from the dawn of civilisation up until 2003.' It was estimated that in 2006 alone the amount of 'information' created was three million times the amount of information contained in all the books ever written. Because of this increasing information load, that has to be processed during sleep, I would argue that our 'need' for good sleep is greater than it has ever been. Much of the stress and anxiety that we experience in the modern world is, I believe, a result of our inability to process all of this information adequately because we are not sleeping as well as we could.

This is the reason why sleeping better is so all important.

As the Rev. Dr Wills wrote in 1864

> *'Those who think most, who do most brain work, require most sleep'*

1
WHAT IS SLEEP?

AN INTRODUCTION TO SLEEP

This chapter will tell you everything you wanted to know about sleep but were too sleepy to ask.

WHY DO WE SLEEP?

If I could tell you the answer to that question I would not be writing this book I would be sitting at home polishing my Nobel prize. The honest answer is that despite years of research we have yet to fully understand the functions of sleep in humans, or in any species for that matter. Numerous theories have been developed over the years as to why we need to sleep; from energy conservation to repair and recuperation, but none provide a comprehensive explanation. A recent study showed 952 genes to be involved in insomnia but their existence explains less than 10% of the overall chance that a person will have insomnia, showing just how little we actually know. Indeed, the more we find out about sleep, the more complex it becomes.

Essentially if it has got a brain it sleeps, if it is a mammal its sleep is recognisably similar to ours. Animals sleep after they have satisfied all their biological needs, essentially if they have had enough food and water to survive, are in a safe place and, when appropriate, have taken the opportunity to ensure the survival of the species, then they will sleep. This is perfectly illustrated by the three-toed sloth which was thought to need 16 hours sleep a day. However, when someone bothered to study them in the wild, rather than observing them in captivity, they were actually found to sleep less than 10 hours a day. The difference simply was that in captivity they had all

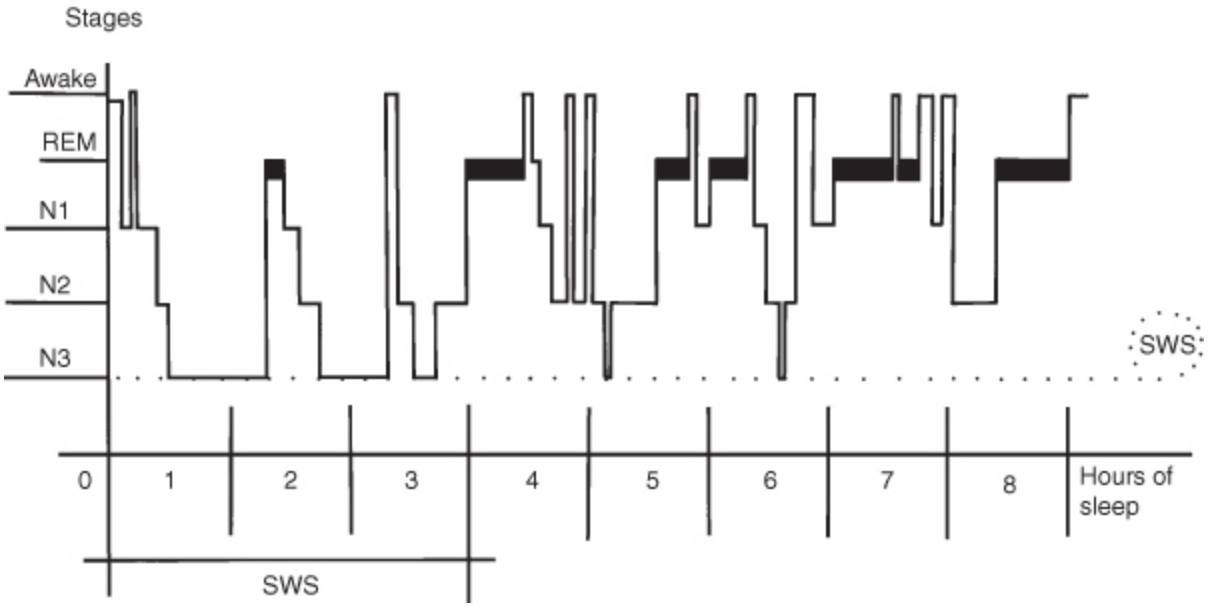
their needs met, and so didn't have to spend time looking for food, water, and so on.

WHAT IS SLEEP?

What is that thing that Shakespeare called

> *The death of each day's life, sore labour's bath, Balm of hurt minds, great nature's second course, Chief nourisher in life's feast.*
>
> **(Macbeth)**

Sleep is divided into two distinct states, Rapid Eye Movement (REM) sleep and non-REM sleep, with non-REM sleep being further divided into three stages; N1, N2, N3, each of increasing depth. During the night you pass through the four sleep stages: N1, N2, N3, and REM sleep in what are known as ‘sleep cycles’. Sleep progresses cyclically from N1 through to REM, then begins again with stage N1. Each sleep cycle lasts approximately 90 to 110 minutes in adults. The first couple of sleep cycles have long periods of uninterrupted deep N3, or Slow Wave Sleep (SWS), with relatively short REM periods. Later in the night the REM periods lengthen and SWS is mostly absent. Thus, the first third of the night is predominantly SWS sleep and the later part of the night is spent in the lighter stages, N1, N2, and REM sleep. On the previous page is stylised representation of a night's sleep for an adult showing the distribution of the various sleep stages across the night.



Stage N1 (3–7% of sleep) is the lightest stage of sleep and is the transition between wake and sleep. It is the type of sleep that you have at the start of the night when you feel you are drifting in and out of sleep. When you are in stage N1 sleep you can be woken easily, and indeed if you are awakened you will probably claim not to have been asleep. During the transition from wake to sleep, many people experience sudden muscle contractions or 'jerks'; a sensation of falling or a 'presence', benign or otherwise, in the room. Falling asleep is not like switching off a light bulb. There are a number of complex processes that need to occur, and these so-called hypnagogic events seem to be 'glitches' in the preparation for sleep. Although they may be perceived as worrying or scary they are in fact normal and harmless. N1 is also the sleep stage you are in when you are dipping in and out of when you wake in the middle of the night and feel you have been awake for hours.

Stage N2 accounts for 45–50% of sleep and, although it is the biggest single portion of sleep, it is the stage which we know least about. It is known to play a part in memory but as yet we do not completely understand why we spend half the night in this stage.

As sleep becomes deeper, slow brain waves (called delta waves) start to appear and we enter N3 or SWS (20–25% of sleep). N3 is the

deepest stage of sleep and when someone is in SWS it can be very difficult to wake them. SWS is believed to be most closely linked with the restorative processes of sleep and is thus the part of sleep that makes you feel like you have had a good sleep. It also plays a key role in making you feel well rested and energetic during the day. SWS is important for memory and learning and it is for this reason that children have proportionally more SWS than adults, as well as the fact that SWS is the only time that you physically grow. It is during SWS that some people, particularly children, experience behaviours (known as parasomnias) such as bedwetting, sleep talking, sleepwalking or night terrors. Both short and long sleepers essentially have the same amount of SWS thus it seems as though a minimum amount of N3 deep sleep is needed per night, no matter how long the total sleep time. Given the importance of SWS after partial or total sleep deprivation the brain attempts to make up all the missed SWS.

During Rapid Eye Movement (REM) sleep (20–25% of sleep) the eyes can be observed jerking rapidly back and forth under closed eye lids, hence its name. It is during REM sleep that most of our 'story-like' dreams occur (dream-like events can occur in any stage of sleep but they are generally thought to be shorter, more focused on a single emotion and lacking the narrative complexity of dreams in REM sleep). REM sleep is involved in processing emotional memories and ensuring our psychological health. During REM our brainwave activity can increase to levels experienced when a person is awake, breathing becomes more rapid, irregular and shallow, heart rate increases and blood pressure rises. In order that we do not act out our dreams we lose muscle tone during REM and thus we are effectively paralysed.

However, good sleep is both quantity *and* quality i.e. it is important to get the right proportion and distribution of the various sleep stages during the night. Additionally, your sleep should as far as possible be unbroken and of the correct duration for you.

CIRCADIAN RHYTHMS

Our sleep is regulated by two body systems: sleep/wake homeostasis and our circadian rhythm (aka 'body clock'). Sleep/wake homeostasis essentially tells us how long we have been awake and, at the end of the day, tells us that it is time to go to sleep. Our circadian rhythm regulates our sleepiness and wakefulness over a 24-hour period. The circadian rhythm rises and falls across the day with our strongest drive to sleep generally occurring between 2–4 a.m.. We also have another much weaker desire for sleep during the afternoon between roughly 1–3 p.m., the so called 'post-lunch dip' which, because it is a function of our circadian rhythm, does not actually need food for it to occur. Our individual circadian rhythm dictates whether we are a 'morning person' or an 'evening person' as well as the exact timing of our individual peaks and troughs of alertness and sleepiness across the 24 hours.

The most important signal that it is time to go to sleep is darkness, in response to which the brain produces a hormone called melatonin. The release of melatonin is the signal that initiates a number of processes that lead us to fall asleep. Melatonin levels drop across the night and in the morning approximately 90 minutes prior to our wake-up time our body clock starts a series of changes (e.g. increase in body temperature, production of the hormone cortisol) that results in our awaking. This is why you have an 'uncanny' ability to wake up before your alarm goes off. If the body knows when you are going to wake, because you have set the alarm, or because (as recommended) you have a regular wake-up time, it can actually prepare to wake up naturally at that time (as long as you are not severely sleep deprived). However, if the body does not know when you intend to wake it cannot prepare and thus you are liable to feel groggy when you wake.

The major external stimulus that signals the fact that it is day is sunlight and it only takes a few minutes of daylight to tell our brain that it is time to be awake. Even through closed eyes sunlight can

signal that it is time to wake up, hence why in summer we often wake early. Because of our dependency on light and dark to entrain our body clock our sleep need varies with the seasons. In summer we have a natural tendency to sleep less and in winter, when it is dark and cold, we tend to want to sleep more.

Humans, in common with most animals, have evolved to sleep at night and to be awake during the day. One of the main reasons for us to sleep at night is that our nocturnal vision is comparatively poor, compared to most other animals which means that we are unable to usefully do anything at night e.g. hunt, work, etc. We are also vulnerable to predation, by big furry things with large teeth and good nocturnal vision. This means that from a survival point of view it is best to find somewhere safe at night, and sleep. Hence, we can only sleep when we feel safe and secure (this is also the reason that at a very basic, primeval level we are all afraid of the dark).

HOW MUCH SLEEP DO I NEED?

Individual sleep need is like height – we are all different and it is, to a large degree, genetically determined. Anywhere between four and eleven hours can be considered normal but getting just one hour less sleep a night than you require can have measurable effects on your physical and mental health.

Your personal sleep need is essentially the amount of sleep that allows you to feel awake, alert, and refreshed during the following day. Very simply, if you feel sleepy during the day then you are probably not, for whatever reason, getting the sleep you need during the night. So, if you only need four hours sleep a night to feel at you best during the day attempting to get eight hours sleep means that you are trying to get something you don't need and can't get anyway. If you need eleven hours to be at your best, cutting your sleep down to eight hours, because this is what is ‘recommended’, just means you will be significantly sleep deprived. Because sleep need is analogous to height it should be clear that you cannot ‘train’

yourself to need less sleep any more than I, at 1.97m tall, can train myself to be 1.75m, however desirable it would be for when I fly economy class.

THE EIGHT-HOUR MYTH

Given the ubiquity of this 'fact' it may come as a bit of a surprise to learn that eight hours is not the recommended length of sleep, and actually never has been. It is disingenuous to suggest that eight hours sleep is anything other than an average, it is not an ideal. In the past various writers commented on the number of hours sleep needed, for instance Bullein in 1576 states that

> *'sixe or eight houres will suffice nature'.*

Vaughan in his *Naturall and artificial directions for health* (1600) writes

> *'How many houres may a man sleepe? Seaven houres sleepe is sufficient for sanguine & cholerick men; and nine houres for fleagmaticke, and melancholick men.'*

And the book *Directions and Observations relative to Food, Exercise and Sleep* (1772) states

> *'It is not possible to lay down any Rule as to the Length of Time necessary for Sleeping; for as this does in a great Measure depend upon Age, Habit and other Circumstances, it ought in different Persons to be different: But it seems to be agreed, that it ought not in the general to be less than six nor more than nine Hours in a Day.'*

This advice is confirmed by seventeenth to nineteenth century proverbs that variously say

‘The Student sleepes six Howres, the Traueller seven; the Workeman eight, and all Laizie Bodies sleepe nine houres and more.’

‘Nature requires five, Custom gives seven! Laziness takes nine, And Wickedness eleven.’

‘Six hours for a man, seven for a woman, and eight for a fool.’

These historical statements are no different than the current recommendations, the American Academy of Sleep Medicine recommendation for sleep duration in adults is simply over seven hours. The National Sleep Foundation consensus statement is often quoted seven to nine hours; however, the recommendations define times as either as ‘recommended; may be appropriate for some individuals; or not recommended’. There is no clear explanation of ‘some individuals’, so it is perhaps clearer to quote the durations of sleep that are ‘not recommended’ which for adults (26–64 years) is less than six hours sleep or more than ten hours sleep.

These proverbs and historical advice strongly suggest that sleep durations in the past were pretty similar to those of today, providing further evidence that we are not in fact in the midst of a ‘catastrophic’ sleep-loss epidemic.

ARE YOU A LARK OR AN OWL?

We all know people who are bright-eyed and bushy-tailed first thing in the morning and others who, shall we say, need a bit of time and a lot of coffee to become even remotely human. Although the timing of our sleep can be dictated by such external factors as our jobs, lifestyle, and so on, morningness (aka ‘lark’) and eveningness (aka ‘owl’) are to a large part genetically determined. In very approximate terms about a quarter of people are strongly morning people, a quarter strongly evening and the rest somewhere between the two.

How to determine whether you are a lark or an owl? Do you find yourself wanting to go to sleep relatively early and have no problem getting up early, and eager to start the day? If the answer is ‘yes’, you're probably a lark. If you answered ‘no’ then you may be an owl. Owls want to go to bed late and find it difficult to get up and out of bed first thing in the morning. (For a more scientifically valid way to measure whether you are a lark or an owl search for a copy of the Horne and Ostberg morningness and eveningness questionnaire.)

Because of the genetic predisposition it is not possible for you to ‘train’ yourself to become a lark or owl. All that you can really do is learn to how cope with the effects of being out of phase and to reduce the impact. For instance, owls would benefit from getting exposure to daylight as soon as possible after they wake up. Larks may find that getting out in the daylight late afternoon/early evening helps them to stay awake longer. The impact of morningness/eveningness is most acutely observed in owls who because of societal pressures often need to wake up much earlier than their natural propensity to wake, this causes them to experience ‘sleep inertia’, that feeling of grogginess in the morning that can persist for between 15 minutes and 2 hours after waking.

SLEEPY OR TIRED?

Although in common parlance ‘sleepy’ and ‘tired’ are used interchangeably there is actually an important difference between them. Sleepy means a propensity to go to sleep, tired implies physical and/or mental fatigue/exhaustion. Therefore, you can be tired without being sleepy e.g. you know sometimes that even though you are physically exhausted, you cannot fall asleep because you mind is racing. This is important from a sleep point of view because if you have a problem with your sleep at night you will have daytime consequences, i.e. you will be sleepy during the day. If you are tired during the day then this could be for a myriad of reasons e.g. a long commute, a boring job, a row with the other half, and so on. Therefore, being tired during the day is not necessarily a sign

that you have a problem with your sleep, more a problem with your lifestyle. It is natural to feel a bit sleepy when you awake in the morning, and in the early afternoon when you have a natural reduction in alertness (the so called 'post-lunch dip'). However, if you really feel that you could easily fall asleep at 11 a.m. then there is probably a problem with your sleep.

A simple example to demonstrate the difference between sleepy and tired is to imagine you have to walk up three flights of stairs, when you get to the top do you need to sit down or sleep? If you need to sit down then you are tired/fatigued/knackered/exhausted, if you need to sleep then you are sleepy and if you are sleepy during the day you have a problem with your sleep.

Signs of sleepiness include:

- not feeling refreshed after sleep
- difficulty keeping your eyes open and focussed
- greater tendency to fall asleep while at work
- more frequent naps during leisure hours
- lots of yawning
- extended sleep during days off
- increased errors and loss of concentration at work
- feeling irritable, restless and impatient

AN HOUR BEFORE MIDNIGHT

We have all heard it a million times: 'One hour's sleep before midnight is worth two after'. (The earliest source, from 1640, gives the idea that one hour's sleep before midnight is worth three after; but from 1670 the proverb equates its worth to two hours). This proverb is simply explained by the fact that deep SWS is predominant in the first third of the night and so much of the restorative benefit of sleep is achieved in that period. Thus, given a

bed time of 9 or 10 p.m. a person gets most deep restful sleep in the hours before midnight with lighter and less refreshing sleep in the hours after midnight. So, it has nothing to do with ‘midnight’ per se and more to do with the timing of deep restorative sleep being in the first third of the night, whenever this occurs. This proverb is now only used as a way of trying to persuade your teenage daughter to come home at a reasonable time.

IS DAYLIGHT SAVING TIME INCREDIBLY DISRUPTIVE?

While research shows it can take up to three days for your internal body clock to ‘reset’ when the clocks change, it is not ‘incredibly disruptive’. Think how disruptive travelling from Paris to London, or New York to Chicago, is for your sleep, the answer it is not at all. Try it yourself, now, change the position of the hands on you watch by going back one hour…done? OK, did you have a heart attack? Did you have a car accident? Changing the clocks is merely changing the time on clocks and watches, it does nothing to alter the solar or lunar cycle. We do not gain or lose any sleep unless we set an alarm, which is why the clock change happens at 2 a.m. on a Sunday morning so the vast majority of people do not have the get up at their regular time to go to work. If you sleep for eight hours a night and don't set an alarm it does not matter if the position of the hands on your watch changes in the night you will still get eight hours of sleep. Trying to prepare yourself, or your child, by changing their bedtime gradually by 15 minutes a night every few nights, is as pointless as it is unnecessary.

The best advice for helping your body deal with the time change is to make sure you change all your clocks to the new time before you go to sleep, meaning that you hit the ground running when you wake up.

Don't overthink ‘losing’ or ‘gaining’ an hour – if you normally wake up at 7 a.m., then get up at 7 a.m. rather than trying to

overcompensate for the change in time. And most importantly don't hit snooze! Routine is key to good sleep.

It is claimed that evidence has shown an increase in incidences of workplace injuries, car accidents and heart attacks in the days after we spring forward, but although statistically significant they are very small increases.

The twice yearly ‘panic’ about the clock change is simply a case of the media hyping up a non-story.

DREAMS AND DREAMING

A dream is a subconscious experience of a sequence of images, sounds, ideas, emotions, or other sensations occurring predominantly during REM sleep. Everyone dreams four or five times a night, but you can only remember a dream if you wake up during it or within a couple of minutes of it finishing. If you do not remember your dreams, it is probably that you are just a good sleeper, hence you are not waking up during your dreams. Conversely, if you feel you are always dreaming it probably means that your sleep is being frequently disturbed for one reason or another.

When we are dreaming, the dream is, for all intents and purposes, real to both our mind and body and so the body can have a physiological response to what occurs in the dream. We have all woken from a dream with our heart pounding, feeling out of breath, sweating, and feeling a sense of fear or anxiety. And we have all woken in the morning thinking ‘I cannot possibly go to work today I have just spent all night fighting dinosaurs and frankly I am exhausted’. We are ‘living the dream’ in the most literal sense.

Now it would be a bit embarrassing, and potentially dangerous, if we were to run around the bedroom four or five times a night enacting our dreams, so in order to protect us and our bed-partners from harm, when we dream we lose muscle tone. We are thus unable to act out our dreams. Essentially, we become floppy, except

interestingly a part of the male anatomy that frequently does the exact opposite. However, this has nothing to do with the content of the dream and everything to do with simple fluid dynamics. Sexual dreams in fact only occur about 10% of the time although erections occur in approximately 80% of dreams.

The actual content of our dreams is limited in certain ways. When we are asleep we are at our most vulnerable and therefore we still need to remain vigilant to what is going on in the environment. However, as our dreams are essentially real experiencing certain sensations in our dreams would compromise our vigilance, which could have serious consequences. For instance, because the sleeper is unable to see or move when asleep, vision and movement do not play a role in providing accurate information about the external world and therefore they can exist in our dreams without compromising vigilance. This is why the overwhelming majority of our dreams are visual and we can experience motion, such as the common feeling of flying. However, because we have to rely on our other senses to provide information about what is going on, sensations such as touch, smell or certain sounds, that would compromise vigilance by interfering with signals coming from the external environment, rarely occur in our dreams.

Anxiety is the most common emotion experienced while dreaming. As in the waking state, it has been found that men generally have more aggressive feelings in their dreams than women, while children's dreams do not contain much aggression until they become teenagers.

Most of us have a reoccurring ‘stress’ dream – that is, usually, about a situation that we would find stressful in real life e.g. relating to events at school, being chased, falling, arriving too late, failing an exam, and so on. My ‘stress’ dream is very simple. I am back at school, I am in the playground during break time, the bell rings, I am with my friends as they start to walk off to the next lesson, I suddenly realise that I don't know what lesson I am going to, I don't have my timetable, I don't know if I have the right exercise books,

and I don't know if I have done the right homework. Every time I have this dream it is at this point that I wake up. Before this scene the dream could have gone on for a long time and have been completely unrelated but, somehow, I end up having this narrative. It can be helpful in dealing with stress if you learn to identify your particular recurrent stress dream.

The only difference between your dreams and waking reality is that your dreams are internally generated. The content of your dreams can be made up of pretty much anything you know or can imagine. Time is compressed or distorted in your dreams. Your dreams start out as a jumble of images etc. which your brain's tries very hard to make sense of. So, however weird and abstract your dreams seem, they are in fact the best interpretation your brain can make of what is going on in your mind. Your dreams only become the stories you think they are when you tell them to your partner/therapist.

It is interesting that people only ever seem to tell you about their 'interesting' dreams. You don't talk about the utterly mundane dreams that we all have because your partner has started thinking you're quite boring during the day and this would make it appear that you can't even be interesting in your nocturnal fantasy life. However if your dream was in any way exciting you still would not tell your partner about it as they never appeared in it.

Dream Interpretation

Dreams are personal and can be about anything that you know or you can imagine, thus dream interpretation of whatever type, Freudian, Jungian, 1001 dreams interpreted, is from a scientific point of view absolute nonsense. However much you explain yourself to your therapist, they are never going to fully understand what goes on in your head or know all the experiences you have gone through, all the emotions you have felt; all that you have seen and done, all that you can imagine. They therefore cannot tell you what your dream means, to you.

If your dreams are so important and meaningful why do you have no memory of the vast majority of dreams that you have and only partial memory of those that you think you do remember? What are these ‘forgotten’ dreams telling you, and how do you know?

Dreams have as much or as little meaning as you would like to invest in them. Beethoven dreamed symphonies; I will never dream symphonies because I am completely non-musical. You don't need people or dream interpretation books to understand what your dreams mean. Essentially that is like asking someone to tell you what you think. Look for the meaning within yourself because your dreams are part of you. We are all different and if you put two people in front of a Hollywood movie you will most likely get two views of it, for instance some people view *Star Wars* as a deep, meaningful philosophical story, but others see it as a piece of meaningless trash that fills two hours. Your dreams are the same, and you should enjoy them in the same way. So, if you feel your dream is telling you something then fine, but if you feel that it's just a movie, then it's just a movie.

One way to illustrate the variety in dream interpretation is to consider the old, no doubt apocryphal, idea that according to Freudian analysis if you dream about a train entering a tunnel you are dreaming about sex (it was always about sex with Freud wasn't it?). However, it could be that the dreamer is a railway enthusiast, dreaming of ‘Castle Class’ No. 7029 *Clun Castle* in full steam, entering the Box tunnel, (ooh, er missus!), and they don't have sex!

Many people believe that they can ‘see’ the future in dreams. We have all heard them – ‘I dreamed there was going to be a plane crash and six months later a plane crashed’. Well maybe you are indeed psychic or maybe you were actually dreaming about the plane crash that you saw on the news last week. Now if you did dream that BA001 to New York was going to crash next Tuesday and you phoned both British Airways and the Civilian Aviation Authority immediately you awoke to warn them of the impending disaster, then I would be impressed if this did actually happen. But then

again, I would also ask: could you not dream the lottery result at least once in a while?

One last piece of nonsense to dismiss ‘if you fall in a dream and hit the ground you will die’ of course you won't, trust me.

Lucid Dreaming: It's a Gateway to Creativity, Man

Proponents of lucid dreaming make outlandish claims as to their ability to explore new realms of consciousness and creativity while controlling their dreams. In a lucid dream the dreamer realises that they are simultaneously conscious and dreaming, therefore they are able to make decisions concerning their dream, or directing it in some way. The art of lucid dreaming is having the conscious awareness that you are dreaming without, by doing this, causing yourself to wake up.

Lucid dreaming is a bit like anything, some people find it easy while others will wake up every time they try to do it. Given the fact that any dream can only be made up of things you know or have experienced, and given the fact that in order to lucid dream you are using your conscious mind, it cannot be a gateway to a new realm of consciousness. Imagine your dream is a car and your brain is a GPS of Great Britain, being able to direct the car means that it might be easier to get to London, but you won't be able to get to London, Ontario.

The only real difference between a dream and a lucid dream is that in a lucid dream events happen in real time.

Cheese and Dreams

There is a commonly held belief that eating cheese causes dreams, but the simple fact is that there is nothing in cheese that could specifically cause dreams/nightmares that is not also found in numerous other foods such as turkey, milk, eggs, nuts, chicken, fish, soy, and tofu.

CHILDREN AND SLEEP

You will perhaps have noticed that this book is not entitled, ‘How to get your child to sleep better and not annoy the heck out of you’. So, it is hopefully not too much of a surprise or disappointment that I am not going to write too much about children's sleep. However, I do think that it is important to touch on a few aspects of sleep in children

Sleep is crucial to the development of happy, healthy, intelligent, well-behaved children because it is essential for

- growth and physical development
- learning and memory
- mental and physical performance
- mood and emotions
- good health and prevention of disease

Sleep is vitally important to the physical, emotional, and mental development of children; and because all the important aspects of the development of a child occur during the night, if you mess up the night, you mess up the child.

A study has shown that even reducing sleep by as little as 45 minutes a night, compared to what is needed, is enough to have a measurable negative effect on children's mental performance.

Sleep problems can have a profound impact on children

- hyperactivity and inattention.
- poor concentration.
- poor impulse control
- disruptive behaviour/aggressiveness
- higher levels of depressed mood

- emotional problems
- poor academic performance
- inter-sibling fights
- family stress, physical and mental health
- parents' relationship with each other

It is true to say that on average children need much more sleep than adults but like adults, children can have very different sleep needs. There is no 'normal' or 'right' amount of sleep for a child, only broad recommendations. The National Sleep Foundation recommends the following sleep durations, per 24 hours:

New-borns	0–3 months	11–19 hours
Infants	4–11 month	10–18 hours
Toddlers	1–2 years	9–16 hours
Pre-schoolers	3–5 years	8–14 hours
School-aged children	6–13 years	7–12 hours

As you can see the ranges are relatively broad; so within these recommendations, regardless of how many hours your child sleeps, if they are happy, healthy, thriving, doing OK at school, and are well-behaved during the day, then they are almost certainly getting enough sleep for them as an individual, so don't worry.

Sleep in children is constantly changing as their brains develop.

Sleep in New-borns

Sleep in new-borns is equally divided between day and night. Roughly a new-born will sleep in 3-4-hour periods followed by 1-2 hrs awake.

Sleep in Infants

At around 2–3 months; the child starts to establish a diurnal cycle with sleep occurring mostly during the night. However, in order to get all the sleep it needs the child will still require one or two sleep periods during the day. By approximately 9 months 70–80% of children will be sleeping through the night.

Sleep in Toddlers

Around the age of 1 year most children, as they become more aware of 'self' may experience separation anxiety, night-time fears and a reluctance to go to sleep. Sleep problems are common (20–40%) in this age group.

Sleep in Pre-Schoolers

By the age of 6 most children will no longer need a regular daytime nap and thus, finally, sleep is purely nocturnal with a degree of consistency night-to-night.

School Children

Sleep duration continues to fall and sleep consolidates into a single period of mainly unbroken slumber. And then…

WHY DO TEENAGERS SLEEP SO MUCH?

Teenagers are different, and teenagers are odd, ('teenagers' has a rather loose meaning in terms of sleep and can refer to people from 12–25years). They are different because they genuinely need more sleep than adults. This is because they are going through puberty and so there are major physical and emotional changes that are happening to them and they need sleep to help deal with them. Teenagers are odd because they do genuinely need to go to sleep later than adults. There is an actual shift in their biological rhythm, we don't know why this shift has evolved, but it is definitely there. Importantly, though, this shift is at most only 2 hours. The recommended bedtime for a teenager is around 11–11:30 p.m. and

they should be getting on average about 9–9½ hours' sleep, although the range of acceptable sleep according to NSF consensus statement are as follows.

Teenagers 14–17 years	7–11 hours
Young Adults 18–25 years	6–11 hours

This means that a teenager who says they cannot get out of bed at 9 a.m. may actually be telling you the truth, but a teenager who says that they cannot get out of bed till noon is merely lazy, there is no physiological need for them to sleep that long. Most teens do not get enough sleep, one study found that only 15% reported sleeping at least 8½ hours on school nights. Because of this most teenagers experience excessive daytime sleepiness on a regular basis and teenagers report twice as many sleep problems as the general population. Academic workload can be a contributory cause of sleep problems, but just as important are: social activities, after school activities; computer/phones/internet/TV/excessive caffeine use, alcohol, their delayed sleep phase and irregular sleep/wake schedules. Adolescents tend to have irregular sleep patterns; in particular, their weekend sleep schedules are much different to than their weekday schedules, to some extent as a direct consequence of weekday sleep loss.

When I was growing up no one would phone you after 9 p.m. – if the phone rang after that time it could only mean there had been a death in the family. This is no longer true and a study shows that use of mobile phones for text messaging is a factor in impairing adolescents' sleep. The alert noise when a new message is received frequently wakes them and there is a significant association between being woken by noises from their mobile phones and how sleepy they feel during the day. One, no doubt in her mind well-meaning, parent I spoke to recently said that she could not deprive her daughter of her mobile overnight, although she knew it was disturbing her daughter's sleep, because she did not wish to be 'too hard' on her. I must admit that I find this a very strange way of

thinking. However, the ubiquity of mobiles in the bedroom is becoming a problem in adults (see ‘Fads’ below)

You may blame their hormones for why your teenager is a miserable, moody, nightmare to live with but it is much more likely that they are just sleep deprived. High rates of sleeping difficulty are reported in adolescence, as one study found that 23% had difficulty falling asleep (a figure which increased with age), 11% woke in the night, and waking in the morning was a problem for 18% with only 3% waking too early. Excessive sleepiness can:

- Limit their ability to learn, listen, concentrate, and solve problems.
- Can contribute to acne and other skin problems.
- Lead to aggressive or inappropriate behaviour.
- Cause overeating or eating unhealthy foods.
- Contribute to illness.

Should Schools Start Later?

Because of the shift in their biological rhythms, teenagers’ natural sleep cycle can put them in conflict with school start times. Most high school students need an alarm clock or a parent to wake them on school days and they seem to find it inordinately difficult to drag themselves from their bed and actually ‘get up and go’. Because they are sleep deprived, they are sleepy all day, having difficulty paying attention in class and not performing academically, or athletically, at their best.

It may come as a surprise that there is no good reason why the school day starts when it does; the actual origin of the early start goes back to a time when a child's education was also combined with the need to be useful labour on the farm. Therefore, there is no good reason why school start times could not be moved later. There is good evidence from America that starting school later can improve grades, attendance and behaviour. Parents and teachers

report that teens are more alert in the morning and in better moods; they are less likely to feel depressed.

Most of the American research says that it is start times before 8:30 a.m., as is common in the US, which are the problem. In the UK schools start around 9 a.m. and so it should be less of a problem; although this does not mean that we should not consider starting school later particularly for teenagers, (although there is no scientific reason to start lessons at 1:30 p.m. as one UK school is reported to have done). What is interesting is that in America, where this research has been discussed for 20 years or more and despite the proven benefits of later start times, there have been very few schools that have adopted a later start to the school day. Indeed, recently, some school boards have actually moved start time earlier. However, as mentioned above, there are no compelling reasons why schools cannot start later, it may be convenient for parents to drop off their children at school before work but that would seem a poor excuse to set our children up to fail. Opponents to moving school start times later claim that this would just mean that students went to bed even later, but research has shown that this is not the case, students do not go to bed later, but actually got one hour more of sleep per school night. (Another reason for early school starts in the US and Canada is that it is convenient for running the school buses.)

So, if we really cared about our children's education and their health we should perhaps consider later school start times, and if for whatever reason this was not possible then at least schools should be encouraged to sensibly timetable ‘academic’ lessons and examinations later in the day.

SLEEP AS WE AGE

One of the great myths about sleep is that people need less sleep as they grow older. Actually, while our sleep patterns may change over time, the need for sleep becomes fixed in early adulthood and does

not greatly change across the life course. Essentially an 85-year-old needs the same amount of sleep they did when they were 25. What actually changes as we get older is the ability to get the sleep we need.

As we age we get progressively less of the deep, restorative, Slow Wave Sleep (SWS) and thus our sleep becomes less refreshing. We start to lose our SWS in our middle years; in men it generally starts from their mid-thirties to forties, while in women it starts in their 50s.

Children have a lot of deep sleep. It is vital for growth, memory and learning and thus children can sleep anywhere, through anything, and if they do wake there is a great deal of biological pressure for them to go back to sleep. Thus, if you lose this SWS as you age your sleep will become more easily disturbed and there will be less pressure on you to go back to sleep if awoken. Our sleep is further compromised as we get older because there are more things to wake us and keep us awake e.g., pain, bladder problems, anxiety, and so on. Think about it, you get up in the middle of the night to go to the bathroom, you empty your bladder and get back into bed. Men can do this in less than 1½ minutes, woman take a bit longer (because they wash their hands!), so why are you awake for the next hour and a half? It is not the bladder – you have just emptied that – so is it pain, anxiety, a snoring partner?

In addition to the changes in sleep architecture there are changes to our circadian rhythms whereby older people tend to become sleepier in the early evening, go to bed earlier and wake earlier in the morning.

The lack of refreshment from sleep causes many older people to feel that they are suffering from sleeping problems, whereas much of what they feel could be accounted for by the natural changes in their sleep. The problem is compounded if the older person also naps during the day as this may use up some of their need for sleep and so they may sleep less at night, again causing them to perhaps believe that they have a sleep problem.

The fact that it is more difficult to get good sleep as we get older does not lessen the importance of trying to get the best sleep we can.

Why, I hear you ask, is there a gender difference in this loss of SWS? Well, my theory is very simple: from a biological point of view men are very simple. Men only have three roles: to hunt, to protect, and to play a small but crucial role in the continuance of the species. The problem is that when a man gets to his mid-thirties, early forties he starts to become less able to fulfil the first two of these roles, 'Oh! My knee and my back hurt, maybe I will watch TV today and hunt and protect tomorrow.' Essentially, at this point, he has become biologically redundant and should probably crawl to the back of the cave and await death. This phenomenon can be seen in the animal kingdom in species that have a dominant, alpha male such as chimpanzees, gorillas, and lions. Once the alpha male becomes weak – either through age, disease, or injury – he is deposed by a younger, fitter, healthier member of the group. He is then cast out of the group and essentially awaits a sad and lonely death. Basically, nature pretty much gives up on middle-aged men as they really aren't of much use anymore from a biological perspective. (Because of this a woman's biological needs dictate that when your man becomes a bit useless you should get rid of him and take up with a younger, more virile man, who is much more able to hunt and to protect you and your offspring.) Women, on the other hand, have a much more important biological role in that they can have babies; so nature does its best to ensure that the woman is around to nurture and bring up her offspring, and so it protects her. This is why women on average live longer than men in all developed nations.

The loss of SWS seen in men is merely a recognition that by the time they are in their thirties men know everything, have nothing more to learn, and do not need to maintain their strength and virility. This is the reason that as men age their memories get worse and they experience, on average, poorer sleep than do women in later life. Essentially, it is the start of the long, slow journey to our

final destination (it is not like that Simon Munnery joke, ‘why do men die before their wives…because they want to’).

WOMEN AND SLEEP

Across a lifetime, a woman's sleep is affected in different ways due to the various biological influences at different stages of her life.

A woman's menstrual cycle may cause discomfort, and sleep changes as the hormones oestrogen and progesterone are known to influence sleep and circadian rhythms. Many women report 2–3 days of disrupted sleep during each cycle, with some women experiencing an increased number of awakenings and other sleep disturbances during their premenstrual period, while conversely other women report excessive sleepiness, fatigue, and longer sleeping hours.

Oral contraceptives, because they can affect body temperature regulation, can also have a negative effect on sleep.

Sleep is disrupted substantially during pregnancy and postpartum, with prevalence of insomnia ranging from 15–80%. After conception most women report daytime fatigue and the need for longer night-time sleep. Feelings of nausea and vomiting during the first trimester can lead to disturbed sleep. From the second trimester onwards, the time spent asleep begins to decrease and sleep quality becomes poor due to nocturnal awakenings, fatigue, leg cramps, difficulty sleeping in certain positions and shortness of breath. Pregnant women, especially during the final trimester, seem to have a heightened risk for both obstructive sleep apnoea and restless legs syndrome (RLS). Incidence of snoring also increases during pregnancy.

During menopause many women experience hot flushes that, when nocturnal, can disrupt sleep. Because the sleep disturbance is related to changes in body temperature it is important to have a cool temperature in your bedroom; to have light, cotton bed linen; and it is advisable to avoid anything that raises body temperature before

bed. Hormone replacement therapy, if considered appropriate by your doctor, can help sleep by relieving severe hot flushes.

WHY MEN FALL ASLEEP AFTER SEX

As we have seen previously, from an evolutionary point of view a man's role is essentially to hunt and to protect. Once he has provided food and ensured the safety of the family/group there is little else useful for him to do, therefore he sleeps. Now, for most animals, sleep and sex are not linked in any way because when you have sex you are vulnerable, your back is turned and your mind is on other things. For instance our closet cousins, chimps and gorillas, have sex very quickly. Therefore, if a man feels safe and secure enough to have nice, pleasurable sex then he is also safe and secure enough to go to sleep (and of course after a hard day hunting and protecting he needs his sleep). Now many people say that this desire to sleep is the result of a release of various hormones during sex. However, surely those hormones are released equally when you are making love in a bed or having a quick 'knee trembler' in a back alley, yet I am pretty sure no man has ever been overcome with sleepiness in the latter situation.

The same process is true with regards to eating: when you have your head stuck in a wildebeest carcass you are vulnerable, so if you are not 'king of the jungle' you either need take your food somewhere safe or you eat quickly. Thus, if you are in the position to be able to enjoy a nice pleasurable meal you are safe and secure enough to sleep. Similarly, if you are relaxed enough to be able to watch the game on TV, especially if your partner has given their tacit approval that you can do so, meaning there will be no 'hassles', it is the ideal time for a snooze.

NAPPING

While naps do not necessarily make up for inadequate or poor-quality night-time sleep, a short nap of 20–30 minutes (aka a

‘power nap’) can restore alertness, enhance performance, and reduce mistakes and accidents. The increase in alertness following a nap may persist for a few hours.

The ultimate ‘power nap’ is to drink two cans of a functional energy drink, like Red Bull, just before the nap. The caffeine will take approximately 30 minutes to start working so you will get the benefit both of the nap coupled with the boost of the caffeine. (NB coffee is a bad ‘drug delivery’ system for caffeine because, dependent on how it is brewed, the level of caffeine can vary massively. So, although you think you are having a ‘strong’ black coffee it may actually contain, little, if any, caffeine. Functional energy drinks on the other hand contain a standard, known amount, although they also contain an awful lot of sugar and don't on the whole taste as nice!)

Napping can also have psychological benefits. A nap can be a pleasant luxury, a welcome break in a stressful day. While there are some benefits to napping there can also be negative effects. If the nap is too long or you are very sleepy you may suffer from sleep inertia upon awakening. Sleep inertia is the feeling of grogginess and disorientation that can come with awakening from a deep sleep and can last for approximately 15 minutes to 2 hours. Also, if you nap too long or too late in the day this may affect your night-time sleep. If you have trouble sleeping at night, a nap might amplify the problems. If you need to get 8 hours of sleep and you get 2 of them in the day you are likely not to need more than 6 hours sleep during the night, so you will either find it difficult to fall asleep or wake up early.

Old people may nap simply because they are bored. However, they commonly do not sleep well at night and thus feel the need to take a nap during the day, but this may contribute to them not sleeping at night and thus a vicious circle develops. It is often advised that old people should avoid napping in the hope that this will shift this sleep into the night. However, the problem with this advice is that if you stop napping during the day there is no guarantee that this

sleep will now occur during the night and thus you may actually be depriving yourself of sleep. Therefore, if you nap during the day and get, what is to you, an acceptable amount of sleep during the night and feel pretty OK during the day then don't worry about having your nap. However, if your nocturnal sleep is particularly poor then it may be worth trying to do without your nap for a couple of weeks and see if your sleep improves. If so, carry on; if not, go back to napping.

In order to be able to nap you have to be able to cognitively disengage from your surroundings and some people are much better at doing this than others, hence some people are able to pretty much nap anywhere at any time while others find it almost impossible to nap unless extremely sleepy when their napping is unintentional.

If you suffer from insomnia only occasionally, taking a short nap shouldn't be a problem, but if you suffer from chronic insomnia, it's probably best to avoid an afternoon snooze, in order to try and re-establish a regular nocturnal sleep pattern.

The Siesta

The siesta is a traditional, common practice among many healthy people worldwide, although its prevalence is strongly associated with hot, tropical regions between 30°N and 30°S of the equator. In these regions there is actually some evidence of a genetic predisposition to taking a siesta.

The siesta would seem to be an evolutionary adaptation i.e. it is too hot during the heat of the midday sun to be able to act without the need of considerable effort to remain cool, therefore it was easier to find a cool, safe place to sleep. This would allow us to conserve, what could be very limited resources (as Noel Coward remarked, in hot climates only ‘mad dogs and Englishmen go out in the midday sun’). This propensity to sleep after midday in hot countries expresses itself as the siesta, and in colder climes as the evolutionary hangover – ‘post-lunch dip’ – a natural drop in

cognitive performance (which as mentioned before does not actually need you to eat food for it to occur).

There is little evidence concerning the effects of taking a siesta on nocturnal sleep quality. However, it seems that the subjective perception of nocturnal sleep is undiminished in those who take a siesta. There is evidence that a siesta can increase daytime alertness and counteract the effects of sleep deprivation and thus can have a beneficial effect on daily work performance.

There are mixed findings about the medical benefits of the siesta, for instance there are a few studies that have linked siesta with an increased risk of myocardial infarction. While, on the other hand, there are other studies which showed a protective action of siesta against coronary artery disease. The difference may be explained by the fact that in some societies a siesta is part of a sedentary lifestyle which can also be associated with other risk factors e.g. obesity, diabetes, hypertension which are linked to an increased risk of heart disease, whereas in less sedentary societies the siesta may represent an important stress-coping mechanism that provides protection against coronary artery disease.

Therefore, if you live in a country that traditionally has a siesta then there is really no good reason to give it up. However attractive the idea of a mid-afternoon nap for a couple of hours, the introduction of the siesta to more northerly climes really would not work, particularly in winter time when it would be dark when you woke up. In this instance a mid-afternoon 20 minute ‘power nap’ is probably more appropriate.

Should we Adopt the Japanese Way of Napping?

The Japanese have a number of words for different types of naps including; *on'ne* i.e. falling asleep waiting for the dial-up modem to connect (only people of a certain age will understand this example) and *issui*, a nap whilst waiting for a pot of rice to boil. However, the most interesting concept is that of *inemuri*, ‘asleep but present’. This is where you appear to be asleep in a situation where you are

present for another reason e.g. during a lecture or meeting. The important thing about *inemuri* is that you have a posture as though you were listening and while you appear to be asleep you are in fact able to contribute to the situation when called upon. Therefore, *inemuri* is not a nap per se, more dozing or daydreaming with your eyes closed. *Inemuri* is acceptable because it shows that you must be sleepy from working so hard and for this reason it is not considered embarrassing, although snoring or dribbling are considered bad form. The Japanese believe that *inemuri* actually aids creativity, and again this leads to an acceptance of this behaviour. This is perhaps different from social mores in the UK/Europe/USA where such behaviour would probably be judged as being due to laziness or having been out all-night partying and would thus be considered unacceptable in the workplace. Is there a case for the adoption of *inemuri* in the UK/Europe/USA? Given the fact that we are all working long hours and rates of stress have gone up there is perhaps a need for the supposed benefits associated with *inemuri*. We have all been in situations where we are required to be 'there' but have no useful role to perform so why not be allowed to be present but 'asleep'?

2
WHY IS SLEEP IMPORTANT?

Good sleep is vital for good physical, mental and emotional well-being. It is the very foundation of living a happy and healthy life. Good sleep plays a role in every part of our lives, from learning a concerto to chopping a cucumber, from getting on well with our partner to flying an aircraft. Poor sleep has been found to result in many negative effects that have a consequence to the way we live, perform, each day. These include

- impaired hand-eye coordination
- slower response time
- lowered visual discrimination
- reduced alertness
- increased error rates
- reduced logical reasoning
- short-term memory problems
- reduced concentration
- frustration and irritability
- impaired decision making
- injuries and accidents.

Let's examine how sleep can affect various aspects of our life.

SLEEP AND HEALTH

There is a body of research that has shown that both short sleep (≤ 6hours), ***and*** long sleep (≥9 hours) are associated, in the long term,

with a number of serious medical problems such as

- increased risk of heart disease
- increased risk of stroke
- increased risk of stomach problems
- increased risk of depression
- increased risk of certain cancers
- increased risk of falls
- increased risk of Alzheimer's
- increased risk of obesity and Type 2 diabetes
- reduced immunity.

However, remember that evidence of an association is not evidence of a causation, so rather than worrying about a statistically significant but probably clinically irrelevant risk of something that may, but probably will not, happen it is perhaps better to focus on the benefit to health that sleep has in the short term. Good sleep boosts the immune system and so you are more able to resist infections such as the common cold (poor sleep has been shown to more than triple the risk of catching a cold). Good sleep also allows you to fight infections better which is why when we are ill all we want to do is to take to our beds and sleep. Good sleep helps us eat healthier and exercise more (see ‘Sleep and Healthy Eating' and ‘Sleep and Exercise’ below). Good sleep is about feeling better, healthier tomorrow, it is vital for our well-being

SLEEP AND RELATIONSHIPS

It is the societal norm that when you are in a relationship you should share a bed and sleep with you partner, the problem is that as the sociologist Jenny Hislop wrote ‘by being in a couple relationship, an individual's biological needs and right to a good

night's sleep are potentially in conflict with both the needs of their partner and a commitment not to disturb their partner's sleep.'

It is perhaps surprising that in most couples, certainly in the early part of the relationship, there is a subject that is seemingly never discussed and that is sleep. We seem unwilling to confront issues such as: bedtime and wake-up times, bedtime routine, which side of the bed to sleep on, whether to have the windows open or closed or the heating on or off, what type of mattress and pillows to have, whether physical contact during the night is permissible, the response to snoring and other behaviours during the night, and for parents – who gets up for the children during the night? Because these are never negotiated in a grown-up manner, when later on they do become an issue and the disturbed sleep starts to occur, they become areas of conflict and resentment between the couple. Reaching an agreement on these issues would thus be important to achieving a good night's sleep that accommodates the needs of each partner.

Poor sleep has been shown to negatively affect your relationship. Indeed, a study showed that even for those who were normally good sleepers, just a single night's poor sleep was associated with increased relationship conflict the next day. Only one partner in the couple needed to have a bad night's sleep for the relationship to suffer. The worse couples slept, the less empathy they showed towards their partners and the more negative feelings they had. When sleepy, couples also found it harder to resolve their differences and poor sleep caused more selfish feelings in partners and they felt less able to appreciate and feel gratitude towards the other. And researchers have found that couples with different sleep-wake routines e.g. an early riser married to a night owl, experienced more conflict, spent less time in shared activities and conversation, and had sex less often than couples whose sleep-wake habits were more aligned.

Conversely, better sleep at night predicts less negativity between partners the following day, whilst positive daily interaction between

partners actually predicted better sleep quality at night.

Poor sleep in children can also be a factor in relationship difficulties. A higher incidence of depression, anxiety, and stress have been identified in the mothers of sleepless children; and in families where there is a sleepless child there are increased rates of relationship difficulties.

SLEEP AND BUSINESS/LEADERSHIP

For the last 150 years or so the cry has been ‘eight hours work, eight hours leisure, eight hours sleep’. For many of us this means that we actually spend more time working than we do any other waking activity. Good sleep can play an important role if our working lives and those of our employees. The magnitude of the problem can be gleaned from a survey of more than 180 business leaders in which 43% said that they did not get enough sleep on at least four nights a week; and, interestingly, research has shown that employees feel less engaged with their work when their leaders have had a bad night of sleep.

Such sleep deficits can undermine important aspects of leadership behaviour and potentially hurt financial performance. According to an article in the *Harvard Business Review* there are four types of leadership behaviour that are most commonly associated with high-quality executive teams:

- operating with a strong orientation to results
- solving problems effectively
- seeking out different perspectives
- supporting others.

Such leadership tasks rely on higher-order cognitive processes, such as:

- problem solving

- reasoning
- organising
- inhibition
- planning
- executing plans.

These processes are associated with the prefrontal cortex of the brain but as Prof. Jim Horne wrote:

> *'Tasks that require planning, strategy, or a complex sequence of steps to complete are more difficult when one is sleepy. This general category of tasks (requiring motivation linked to abstract goals, delayed rewards/consequences, planning, strategy, and so on) involves abstract processing areas in the front of the brain (regions of the prefrontal cortex) that appear to be particularly sensitive to sleep deprivation.'*

Research has confirmed that sleep deprivation impairs the ability to focus attention selectively. Another study found that a good night's sleep leads to new insights: participants who enjoyed one were twice as likely to discover a hidden shortcut in a task as those who didn't. Furthermore, sleep has been shown to improve decision making and the ability to weigh the relative significance of different inputs accurately, to avoid tunnel vision and to reduce cognitive bias.

It is perhaps not surprising given what we know about poor sleep and romantic relationships (see 'Sleep and Relationships' above) that similar problems can be a factor in the workplace. Business relationships require interaction with people and the ability to 'read' their emotions. Poor sleep causes you to misinterpret these cues; and overreact to emotional events, and to express your feelings in a more negative manner and tone of voice. Additionally, a study from 2010 showed that people who have not had enough sleep are less

likely to fully trust someone else. Which is probably a wise thing given that poor sleep has also been shown to contribute to an increase in dishonest behaviour, such as cheating.

It really does matter if you are sleepy at work: data from recent a National Sleep Foundation (NSF) survey showed that workers reported the following were affected by sleepiness:

- concentration 68%
- handling stress 65%
- listening 57%
- solving problems 57%
- decision making 56%
- relating to others 38%

They also felt that sleepiness contributed to them

- making errors 19%
- being late to work 14%
- falling asleep at work 7%

- staying home from work 4%
- getting injured 2%

My favourite story about the risk of sleepiness at work isn't one of the big disasters that are commonly used to illustrate the issue but a story from 2013 about a German bank clerk who was transferring €64.20 when he dozed off with his finger on the keyboard, resulting in a transfer of €222,222,222.22.

ECONOMIC COST OF INSOMNIA

There have over the years been a number of estimates of the cost of poor sleep/insomnia. However, the findings from two reports will amply demonstrate the problem with these types of estimates. A survey on the cost of insomnia claimed that, annually, the US lost 252.7 million days with a societal cost of $63.2 billion and an individual cost of $2,280 to the employer caused by loss of performance due to insomnia. A slightly more recent study claimed that insufficient sleep cost the US economy up to $411 billion a year with an estimated loss of 1.23 million days – so 200× less days lost for 6× the cost. Now you do not have to be an economist to know that these findings cannot both be correct and, indeed, it is highly probable that neither is the truth. All we can say with any certainty is that poor/insufficient/short sleep and/or insomnia have a cost to the economy and that improving sleep will reduce that cost to a degree that is hard to quantify precisely.

But while it may be difficult to measure the cost to society of poor sleep it is undoubtedly true that a simple error by an employee, earning a fraction of a CEO's salary, can cost a company millions (a fatal truck accident ‘costs’ approximately $7million) or even billions of dollars – think Chernobyl, Three Mile Island, Bhopal, *Exxon Valdez*. What's more, such events have the potential to deprive the CEO of their job.

SLEEP AND ACADEMIC PERFORMANCE

Sleep, particularly SWS, is vitally important in the acquisition of new knowledge, and the learning of new tasks; it therefore should not be a surprise that poor sleep can lead to poor academic performance – this is particularly true in children, where changes of as little as 45 minutes can make a difference.

However, we continue to learn and acquire new information across the life course and good sleep continues to play a role. In a large study of over 3,000 13–19 year olds it was found that students who averaged C, D or F grades had 25 minutes less sleep than students who had As and Bs; they also went to bed later (40 minutes) and at weekends tended to go to bed later and lie-in later than their more successful peers.

Research in college students has found that studying at night leads to lower examination marks. This is because sleep plays a key role in memory and learning new tasks. When revising for an exam don't stay up all night cramming, because while you will gain the information you will not file it away, thus when you sit at the exam the answer will be ‘on the tip of your tongue’, you know that you have the information you just don't know where you have put it. If you want to pass your exams just read through your work a couple of times before bed, wind down and then get a good night's sleep, so your brain can process this information and lay it down as memories in a manner that makes its retrieval easy when you need it. Even just staying up late has been found to be associated with poorer academic performance.

A study in college athletes (mentioned below) found that extending sleep not only improved athletic performance but also had a beneficial effect on academic performance.

A study of students (age 9–15 years) showed that difficulty getting up in the morning, poor quality sleep, and feeling unrefreshed by sleep were all be associated with children reporting reduced motivation to do well in school, a more negative image of

themselves as students and reduced receptivity to teachers' influence.

SLEEP AND ATHLETIC PERFORMANCE

While sleep is important for optimal athletic performance, athletes can easily fail to get regular, consistent hours of sleep, due to training schedules, travel, pressure of competition, and so on.

Studies from Harvard University have demonstrated the beneficial effects of better sleep for athletic performance. In a study of the men's basketball team players were asked to obtain as much nocturnal sleep as possible during a sleep extension period with a minimum goal of 10 hours in bed each night. Their total objective nightly sleep time increased compared to baseline by 110.9 ± 79.7 minutes. Subjects demonstrated a significantly faster timed sprint following sleep extension (16.2 ± 0.61 seconds at baseline vs. 15.5 ± 0.54 seconds at end of sleep extension). Shooting accuracy improved, with free throw percentage increasing by 9% and 3-point field goal percentage increasing by 9.2%. Mean reaction time and subjective scores of sleepiness also significantly decreased. Subjects reported improved overall ratings of physical and mental well-being during practices and games. A similar study in the university's women's tennis team showed that those who increased their sleep time ran faster sprints and hit more accurate tennis shots than they did when getting their usual amount of sleep. The authors of the studies concluded that improvements in specific measures of performance after sleep extension indicate that optimal sleep is likely beneficial in reaching peak athletic performance. This may be especially true for an elite athlete who already has a performance coach, sports psychologist, physiotherapist, nutritionist, and so on. For such athletes improving sleep may be the one aspect of their training that could offer measurable gains in performance.

Even partial sleep deprivation (3 hours sleep loss) has been shown to affect performance with statistically significant increases in heart

rate and ventilation being seen during sub-maximal exercise compared with results obtained after a normal night.

Researchers speculate that sleep helps improve athletic performance because during SWS growth hormone is released which stimulates muscle growth and repair, bone building and fat burning, and therefore helps athletes recover. Studies have shown that sleep deprivation slows the release of growth hormone and indeed it has been found that sleep deprivation has a negative effect on the day-to-day recovery of leg strength/power, sprint performance, and self-selected exercise intensities (pacing strategies). Sleep loss also retards the repletion of muscle glycogen and this may additionally contribute to the decline in athletic performance. Thus, strategies should be put in place to ensure adequate sleep occurs between competitive events to optimise athletic performance and to ensure sufficient muscle recovery.

Sleep, because of its role in memory and learning, is also necessary for acquiring new skills or remembering new information such as the course layout or route.

There is a link between poor sleep and an increased risk of sustaining a sports related injury: one study showed that those athletes sleeping less than eight hours a night were at a 70% greater risk of injury than those who slept more than eight hours.

There is little if any data showing that daytime napping can in itself boost athletic performance, although it may be beneficial to nap if nocturnal sleep restriction is for some reason unavoidable.

Travelling for matches can be a problem, not only because of jet lag, where not having enough time to acclimatise to the new time zone can have an effect on performance but also because of more subtle differences. A recent study on five years of regular season games in National Basketball Association, the National Hockey League, and the National Football League showed an association between the winning percentages and the number of time zones travelled for the

away evening games, with a clear disadvantage for the teams travelling westward.

How to use sleep to improve sports performance:

- Make sleep a priority in the training schedule.
- Increase sleep time several weeks before a major competition.
- Go to bed and wake up at the same times every day.
- Take daily naps if you don't get enough sleep each night.

SLEEP AND HEALTHY EATING

Eating a healthy, varied, and balanced diet will not only help you meet your nutrient needs for general health and well-being it will also provide all the nutrients needed for a good sleep. Poor sleep can cause you to eat irregularly, snack between meals, season your food excessively and eat fewer vegetables.

Poor sleep has been shown to cause 24% higher hunger ratings; a 23% increase in overall appetite but a 33% increase desire for high fat, high carbohydrate foods.

So, when you are sleepy you want to eat, you want to eat rubbish, you eat rubbish, and you eat more rubbish.

People blame the increased consumption of junk food on their easy availability and ‘aggressive advertising’ but the simple fact is that if you are sleepy you physiologically want to eat these foods; it has little to do with how much the fizzy drink and chocolate companies spend on advertising. If I put an apple and a chocolate muffin in front of you (i.e. they are equally available) and I tell you how both are lovely to eat and will make you feel good (i.e. aggressively advertised), honestly which one, in your sleep deprived state, would you prefer, the apple or the muffin?

One theory for this need to consume sugary and fatty foods is that we are eating for the winter that never comes. In our pre-industrial

times we would eat large amounts during the summer when food was plentiful in order to put on weight in the hope of surviving the winter, essentially a time of famine. Long day lengths signal to the body that it is summer and therefore we should consume more, the problem is that our technological advancement means that our days are 'long' all year round and we never experience the 'famine' of winter which would help us lose the pounds we have put on.

Making sure you get enough sleep can help you avoid poor eating habits and make you less likely to succumb to high-calorie, high-fat and less nutritious foods.

SLEEP AND WEIGHT

It is important, from the start, to stress that it would be wrong and misleading to suggest that sleep alone is a magical cure for weight problems or that spending a bit more time asleep each night will immediately cause you to drop a dress size without any other lifestyle changes (although that has not stopped some books with catchy titles suggesting that it can).

It is clear that over the last 40 years there has been an inexorable rise in the number of people who are overweight or obese while, at the same time, there has been an increasing obsession with diet and exercise and an increasing amount of government approved advice about eating 'five a day', walking '10,000 steps a day', and so on. But despite the endless promotion of the 'eat less, move more' message, however well-meaning, it seems to be having no effect in reducing levels of obesity which continue to rise. One crucial reason for this may be the fact that none of the advice stresses the importance of good sleep to a healthy lifestyle. Good sleep is the very foundation of good health and underpins both a healthy diet and effective exercise. A healthy diet and regular exercise have long been recognised as the best ways to achieve and maintain a healthy weight and body shape. However, the importance of sleep in maintaining a healthy body weight is equally important. It is

becoming increasingly clear that there is an association between poor sleep and an increased risk of obesity and diabetes.

Studies show that restricted sleep leads to an increase in appetite, fat production and weight gain. This is because lack of sleep results in a significant disturbance in certain hormones that control appetite, particularly ghrelin and leptin. Ghrelin stimulates appetite, fat production, and body growth, leading to increased food intake and body weight, while Leptin helps to regulate food intake and signals to the body when it has had enough food. Levels of ghrelin and leptin vary depending on the amount of sleep you get. When we have insufficient sleep, our leptin levels decrease and our ghrelin levels rise, suggesting that lack of sleep is partly responsible for an increase in appetite; and, worryingly, these changes can occur after just a single night of restricted sleep. Conversely, recent research has shown that by extending sleep, sugar consumption can be reduced.

There is a growing body of evidence that shows that sleep loss is associated with an increased risk of obesity and studies have shown that there is an association between short sleep duration and being overweight in both adults and children. Those who sleep for less than seven hours a night are likely to have a higher BMI than those who regularly have a good night's sleep.

However, these studies cannot tell us whether weight gain is caused by lack of sleep, or if obesity makes it harder to get sufficient amounts of sleep.

Despite what some people claim poor sleep does not makes you obese, poor sleep only increases appetite and desire for sugary/fatty foods, you actually have to eat them to become obese. It is lack of willpower that is the problem in this regard, not poor sleep (although willpower is also impaired by poor sleep but you hopefully get the idea).

Poor sleep is only one of the many factors that contribute to an increased risk of obesity and diabetes, but perhaps it time for a new

mantra:

> *Eat less, move more, sleep well*

SLEEP AND EXERCISE

Physical activity is one of the most effective ways to stay healthy, but many people who exercise could be hindering their efforts simply by not getting enough sleep. This is because the amount of sleep we get is linked to how active we are and how energetic we feel. Studies show that people who have trouble sleeping at night or feel excessively sleepy during the day have less energy and a reduced desire to be physically active.

If you've had a good night's sleep, you're more likely to have the motivation to spring out of bed, ready for physical exercise than if you've been awake half the night. Not getting enough sleep can make even everyday physical activities arduous.

Daytime exercise is a good preparation for sleep, the best way of getting sleep during the night is to be awake during the day and exercise, particularly if it is outside, is a good way to be awake. However, despite what you have heard it is also possible to exercise relatively close to bedtime without it necessarily impacting your sleep, the key is to ensure a proper winding down after the exercise, and before bed.

SLEEP AND DRIVING

The first yawn is too late!

Most people are aware of the hazards of drinking and driving, but driving whilst sleepy can be just as dangerous. It has been estimated that sleepy drivers now kill more people on the roads than drunk drivers (although one reason for this is of course the reduction in the number of people drinking and driving over the last couple of

decades). Research has shown that even moderate sleep deprivation affects driving performance to the same degree as low-level alcohol intoxication. Like alcohol, lack of sleep slows your reaction time e.g. the ability to react quickly to a car in front of you breaking suddenly. It also affects your judgement e.g. misjudging the width of your car or the sharpness of a bend. Falling asleep at the wheel is particularly dangerous as it only takes a matter of seconds for your car to come off the road and because you are asleep you do not take any evasive action and so you hit what you hit, hard. That is the way the police can tell if the driver has fallen asleep at the wheel, no skid marks.

There can be any number of underlying causes of sleepy driving, these include:

- not getting enough sleep
- having interrupted or fragmented sleep
- having a chronic sleep debt
- working shifts
- undiagnosed or untreated sleep disorders or other illnesses that can disrupt sleep such as pain, depression, etc.
- time awake before driving
- the use of sedating medications
- the consumption of alcohol
- early morning starts to beat the traffic
- overnight drives when it is quieter on the road.

Any combination of these factors can greatly increase the risk of a sleep-related accident.

The most vulnerable time for sleep-related car accidents is around 2–7 a.m. Thus you should, if at all possible, avoid driving during these times. There is another, smaller, peak of accidents in the mid-afternoon during the post-lunch dip.

Warning signs that you are too sleepy to drive safely include:

- trouble keeping your eyes focused
- drifting across the lane markers
- being unable to recall driving the last few miles
- at night fixating on and driving towards lights on the road.

If you experience any of these or just feel sleepy while driving, pull off the road and take a nap for 15–20 minutes.

Try and schedule frequent breaks on long trips. Your car may be able to drive 500 miles on a tank of petrol, but you shouldn't. Take a short break every couple of hours or so.

Don't count on caffeine to keep you awake and alert. Caffeine can take up to 30 minutes to ‘kick in’ and it only provides a short-term boost to alertness, so it cannot overcome excessive sleepiness or relieve a sleep debt. Also, the amount of caffeine in any particular cup of coffee can vary widely and so you may not actually be getting any boost from the coffee, but because you think you have you will carry on driving even though you are still as sleepy. The sleepier you are the less able you are to accurately judge your level of sleepiness. In some people excessive caffeine consumption has been shown to actually cause sedation.

Opening the window, turning the air-con up or turning up the radio will do nothing to help you stay awake while driving.

Never combine alcohol with driving, but especially when you are sleepy as one beer when you are sleep deprived will affect your performance as much as two or three beers when you are well rested.

BEAUTY SLEEP

It may be one of the most enduring ideas about the importance of sleep but it is also one of the least researched. We all know the

phrase ‘beauty sleep’ and intuitively we know that we need sleep to look our best but research has now proved that beauty sleep does exist. A study has shown that the faces of sleep-deprived individuals were perceived as having more hanging eyelids, redder and more swollen eyes, and darker circles under the eyes. Sleep deprivation also was associated with paler skin, more wrinkles or fine lines and more droopy corners of the mouth. Sleep deprived people were judged as looking sadder and this was related to them looking fatigued. Therefore, not only does good sleep make you feel good it makes you look good as well. So perhaps it is true as Tyra Banks, the American model, is reputed to have said ‘the most important item in your makeup bag is a good night's sleep.’

3
WHY WE ARE NOT SLEEPING

It is said that humans are the only species that voluntarily forgo sleep and this is always implied to be a negative. However, we are able to forgo our sleep because we are the only species intelligent and resourceful enough to have mastered our environment, we 'invented' fire that gave us heat, light and protection. This meant that we have been able to colonise the night, and thus forgo sleep. No other species has done this and they remain bound to the day/night cycle and to meeting their biological needs, they are a 'slave to the rhythm', as Grace Jones would say. In the past, monks voluntarily went without sleep in order to praise God or illuminate manuscripts, whereas the normal folk would sit around the fire telling stories and sagas and perhaps sharing a horn of ale. In our modern world such enriching activities have been replaced by essentially six modern day 'sleep thieves', to use the phrase coined by Stanley Coren:

- fads
- business/shift work
- 24/7
- worry/stress
- children
- bed partners.

FADS

In the past there have been various fads that have given us a reason to forgo sleep, the pleasure gardens of eighteenth and nineteenth century London; late night shopping (in 1600 shops in London were

open till 10 p.m.); public houses; coffee shops; bawdy houses; music halls; the advent of late night or all-night television; computer games, etc. We are just in the middle of the latest fad.

This is not imposed on us, however hard companies try to make their products as ‘addictive’ as possible, but something we do willingly, even though we know the risks of doing so. There has never been so much information about the ‘dangers’ of poor sleep and yet we still do things that we know will result in poor sleep. Perhaps the difference this time is the ubiquity of the problem.

In the past only the better-off were able to visit the pleasure gardens; computer games appealed to a certain, limited minority of the population. But now the vast majority of us have a smartphone and cheap, fast, access to the internet. We now forgo our sleep for the sake of watching videos of people falling off things and talking to ‘friends’ we have never met. The content providers don't want us to sleep, they need advertising revenue and they only get that if they can persuade their advertisers that you are using their services. If we are sleeping we are not consuming. The CEO of Netflix explicitly said recently that his competitor is sleep.

The simple fact is that we need to show willpower and actively disengage from the sleep disruptors. This is relatively easy – turn your phone/computer/tablet off, close your eyes and go to sleep. Nobody is imposing sleep loss on us, it is something we are willingly, and more worryingly, wilfully doing to ourselves.

This is especially true for teenagers and young adults who, while they are the most aware of the importance of sleep and the problems caused by new technology, are also least likely to change their behaviour.

The good news is that, sometime in the future, we will mature and start having a better relationship with technology and for a period we will go back to treasuring a good night's sleep, until inevitably another new fad will come along to disrupt it.

HOW BUSINESS IMPACTS SLEEP

The Virtuousness of Short Sleep

There is an awful lot of nonsense on the internet and in the press about the 'The sleeping habits of the rich, the powerful, and the genius'. Articles with titles such as

- Do Successful CEOs Sleep less than Everyone Else?
- 11 Successful People Who Get Up So Early They Barely Sleep
- 9 Successful People Who Barely Sleep
- Do history's greatest figures owe their success to sleeping LESS?
- Great People Sleep Less?

are a staple of the internet.

The simple fact is that historical evidence for most people who are claimed to be short sleepers is all but non-existent. In my opinion the claims of short sleep by CEOs and presidents is just self-glorifying propaganda, self-aggrandisement i.e. short sleep somehow makes them better than the rest of us. This is amply demonstrated by the case of Napoleon as a book by Louis Antoine Fauvelet de Bourrienne, his private secretary makes clear,

> *'If his enemies, by way of reproach, have attribute to him a serious periodical disease, his flatterers, probably under the idea that sleep is incompatible with greatness, have evinced an equal disregard of truth in speaking of his night-watching.'*

(In fact, according to one of his most important aides, General Armand de Caulaincourt 'The Emperor needed much sleep, but he slept when he wanted, during the day as well as at night.')

The same belief that sleep is incompatible with greatness I believe is what motivates the supposed short sleepers to make this claim.

This idea that short sleep is equated with good goes way back to the early Christian fathers, who being influenced by their Greek philosopher forbears, practiced asceticism which to varying degrees involved denying themselves sleep. By the fourth century this had developed into the observance of the canonical hours e.g. midnight vigils and early morning prayers. For 1600 years the philosophy was to forgo sleep in order to praise God as a sign of your virtuousness. The only difference now is that the reward that people, who want to be thought of as our betters, seek to obtain is Mammon rather than God; 'Because I forgo sleep I am better (more virtuous) than you and thus I have earned my salary, bonus, share options, private jet, etc. (God's favour).'

The culture of a business must come from the top – that is what leadership is about – so how are we to believe that companies really care about our sleep if CEOs are boasting about how little sleep they need? You have to ask yourself what they are actually saying when they boast of having so little sleep. Are they really that good a boss if they cannot appoint deputies and assistants to whom they can delegate? What is it about their role, which seemingly only they can do, that necessitates them having to work all hour's god sends, getting only a few hours' sleep a night?

The opposite is also true, are we really meant to be impressed that a multi-millionaire/billionaire CEO with a staff of thousands, and who knows how many assistants, is able to sleep eight hours?

Of course, it is obvious that long hours, shift work, increased workload and stress inherent in many jobs will have a negative effect on sleep. But there are also a number of other ways that having a job is affecting our sleep.

One increasing problem is not being able to clearly separate work and home life. The advent of home working and virtual offices, which promised flexibility and better work/life balance has resulted in no demarcation between work and home. It is no longer necessary for many people to stay 'at work' in order to work long

hours, many people now take work home with them, because technology means that they can.

Increasingly for many people there is no ‘off’ button and they feel the need to constantly be available. This is particularly a problem in global corporations where staff are working with colleagues in different times zones, an early morning call with Australia and a late evening call with America are, for some, considered just part of the normal working day.

In too many businesses there is a culture of sending emails at stupid o'clock, copying in everyone, including the boss and the boss's boss, to prove how dedicated you are to your job. However, it does nothing of the sort, it just annoys people who have to wade through hundreds of unnecessary emails first thing in the morning. This mentality is engendered by the unspoken threat that if you want to keep your job, you just have to do whatever it takes. This is ‘male cow excrement’. Working under such a threat is probably the biggest reason why workers feel disengaged from their jobs.

Despite the increasing sophistication of video at teleconferencing the skies are still full of business people jetting from one ‘F2F’ meeting to another. Just what the world needs – jet-lagged business people stepping off the red-eye, to make decisions, to negotiate deals, or give presentations, all the while impaired as though they were over the limit for drink driving.

Because of the global market we have people in London playing the Hong Kong and Singapore stock markets, making multi-billion dollar decisions when they are most sleep deprived.

But it is not only the company board that may underappreciate the seriousness to business of poor sleep. Employees are often misguided in their thinking: ‘I'm safe at work so it doesn't matter if I'm sleepy’. There are usually three justifications given for this statement.

1. I am a well-trained professional, so I am good enough to do my job even if I am sleepy.

2. I have been doing it for years and have never had a problem/accident.
3. I have trained myself to cope.

And this kind of self-justification is common even in the most safety critical industries. Many years ago, I did one of the early jet-lag studies looking at pilots from a well-known international airline flying the LHR–Anchorage–Narita–Anchorage–LHR route which, at the time, was one of the toughest in terms of time-zone changes. During this study I questioned one of the senior captains as to how pilots dealt with jet lag. His answer was that he didn't, and he went on to say that 'I work at 60% of my potential but my 60% is better than your 100%.' Now you either think 'you arrogant so-and-so', or 'thank god'.

This attitude is also prevalent in the medical profession. When the working time directive came in for doctors, pretty much every president of the Royal Colleges argued that long hours and being on call was good enough for them when they were training. They seemed to suggest new medics, and indeed patients, would somehow be worse off if doctors were well rested and fit to do their job. A 2002 statement from the American College of Surgeons said 'Patients have a right to expect a healthy, alert, responsible, and responsive physician'. Contrast that with a statement by one surgeon in response to an article in the *New England Journal of Medicine* concerning sleep: 'I operate better with less sleep'.

Shift Work

When I was growing up in the 1970s there was a programme on the BBC called *Tomorrow's World*, which was a weekly showcase of new technology. I used to watch with a sense of wonderment at how technology was going to change the world and give the working man undreamed of levels of leisure time. Unfortunately, it seems that these were false promises – and while technology may be able to work 24/7/365, humans cannot.

Technologies, such as electric light and central heating, make us believe that we can overcome our biological rhythms; however, this is not the case. People working nights have higher incidences of (amongst other things) heart attacks, depression, gastrointestinal problems and, in women, breast cancer. There is even data to show that shift work shortens one's life span. Night workers are also less productive and more prone to accidents, both at work and whilst driving to and from work. As mentioned before, sleepy drivers account for more injuries and deaths on the road than drunk drivers. But there is an important difference between driving under the influence of alcohol and driving whilst sleepy: with drink driving you make a conscious decision to go over the limit and then to get in your car and drive. With sleepiness there is no such limit, and for many people sleepiness is part of their jobs, not a conscious choice.

The worrying thing is that we seem to be constructing a society that is increasing the need for people to work shifts but in what could be considered non-essential tasks. In the past it was very difficult and costly for industries to switch off production lines, close down mines, or shut down the blast furnace overnight. This meant that there was the need for working shifts. However, with the decline of these industries there are fewer manual workers who have to work shifts. Manual works now do shifts for simple economic reasons – running a factory 24/7 means increased profitability for the company as well as paying back quicker the investment in the machinery and other costs.

However, many modern shift workers are employed in the service industries, in call centres and supermarkets. Many companies now offer the ability to talk to a real person 24 hours a day in order to do the most mundane things like paying bills. This is despite the fact that this is precisely the sort of task that technology was touted as solving (interestingly, their customer complaints lines are rarely if ever manned 24/7). If 24-hour shopping was really necessary how is it that we can manage on Saturday and Sunday nights when the shops are not able to open?

Of course, we have a right to expect the emergency and other essential services to be manned around the clock. However, their shift patterns and work hours should be optimised for their benefit as well as ours.

The disasters at Three Mile Island, Chernobyl, Bhopal, the space shuttle *Challenger*, and *Exxon Valdez* all happened in the early hours of the morning when human performance is known to be at its lowest. The simple fact is that humans have evolved to be diurnal, asleep during the night and awake during the day and thus, in the words of Prof. Simon Folkard, we should no more expect man to work overnight then expect him to live underwater. This is borne out by the fact that at least 75% of shift workers have been shown to be excessively sleepy during their shift. The unadjusted shift worker is the agent of risk, not the environment around the worker. The maladjusted shift worker can become an agent of risk due to sleepiness as work (resulting in missed signals e.g. a red light, a dial going critical), or through an inappropriate response to correctly perceived signals (e.g. trying to land an aircraft on the taxiway not the runway), or simply by falling asleep on the job. And these issues are also pertinent to the journey to and from their place of work. The consequences of this can be quite significant. For example, manual dexterity has been shown to start decreasing from 11 p.m. until a low point at approximately 5 a.m. and this can lead to errors or even injury, e.g. needle stick injuries in hospitals are significantly higher during the nightshift. The effect on the high-level cognitive functions discussed earlier are even more profound in those working nights.

Many women work shift work and night and rotating shifts can put a strain on family life, with less time available to meet family/home responsibilities and enjoy recreational and social activities. Female shift workers suffer irregular menstrual cycles, difficulty getting pregnant, higher rates of miscarriages, premature births, and low birth-weight babies more than regular day working women. Changes in exposure to light and lost sleep caused by shift work may have significant biological or hormonal effects e.g. one large

study of women who worked night shifts over a three-year period found a 60% greater risk for developing breast cancer (although to be fair, other studies have not found the same effects). Another recent study found that skin cancer was raised by 41%, breast cancer by 32% and stomach cancer by 18%.

Nurses working nights were found to have the biggest risk of developing breast cancer – 58% higher than in those who only worked days. They also had a 35% higher chance of gastrointestinal cancer and 28% of lung cancer.

In 2008 the Danish National Board of Industrial Injuries recognised breast cancer after working the night-shift as an industrial injury. The cases that won compensation involved women who typically worked at least one night a week for at least 20 to 30 years, and where there were ‘no other significant factors’ that might explain the development of breast cancer. The cases included women who had worked as air hostesses and as nurses and the compensation was paid by the employer's industrial-injuries insurance.

What is incredible, given these statistics, was that up until comparatively recently many nations had legislation banning night work for women; but these were done away with in the name of sex discrimination. Isn't it wonderful that for the sake of equality we have significantly increased the chance that many women will develop breast cancer?

And it is not just accidents and illnesses that are associated with night workers – as they have a have a 50% increase in rates of divorce as compared to day workers.

The acceptance of shift work as a ‘normal’ thing is highlighted by the existence of ‘shift work disorder’ as an actual, recognised sleep disorder. Shift work disorder occurs when an individual is unable to successfully synchronize his or her internal clock with a work schedule that requires staying awake and working when it is dark and sleeping when it is light. Bizarrely, it is the only sleep disorder that is instantly and completely cured by simply changing one's job.

The inability to cope with an unnatural and dangerous situation that humans have never evolved to perform is not a sleep disorder.

In a sane world should the police wait outside call centre gates in order to arrest sleepy workers as they leave to go home, as they do with drink drivers outside pubs?

Surely after a century and a half of improvement in the conditions of the working man (and woman), the issues concerning shift/night work should be the final battle for the working class.

THE 24-HOUR SOCIETY

Our rural ancestors lived their lives according to the waxing and waning of the seasons and their sleep was primarily influenced by the day/night cycle. Although fire, then later candles and oil lamps, allowed some activity after sundown, for the most part daytime activities ceased a few hours after sun set, to resume soon after dawn, as is still true today in societies living without access to electricity. The coming of the industrial age brought machines that could work around the clock and often it was impossible or dangerous to stop them working; and so there came the need for people to work what is now known as '24/7'. (Of course, there was also the simple exploitation of the working man, keeping the manufacturers working 24 hrs a day, to increase profits for the greedy owners.) Later the widespread use of the electric light bulb for the first time allowed individuals control over their own day/night cycle. However, even more important to our colonisation of the night was the widespread availability of cheap central heating; previously the coal/log fire was left to burn down and people went to bed before it got too cold. More recently, in the mid-eighties, television started broadcasting 24 hours a day, in the late nineties supermarkets started opening later and later and now we find ourselves in an electronic world where information never turns off: 24/7 shopping, nightlife, travel, entertainment, and the internet mean that everything is available to us all of the time. Time has

become irrelevant as there are no set hours for anything. In turn, people feel guilty if they switch off and don't make the most of what is on offer. This leaves precious little time for sleep. How did we ever manage when pubs closed at 10:30 p.m., TV went off at 11 p.m., and late-night shopping was 6 p.m. on a Thursday? We now, for the first time in history, truly live in a '24-hour society' and this has important consequences for us and particularly for our sleep.

There seems to be a self-perpetuating problem at work, the more people we require to work shifts the more 24/7 facilities we need to provide, which in turns leads to more people to working shifts. However, some services can and never will be 24/7, for instance, the mother doing her weekly shop at 2 a.m. is probably still going to have to drive her children to school at 8 a.m. In the US, shops are open 24 hours a day, but they are small, one-man convenience stores that sell everything you need at 2 a.m. – condoms, crisps, alcohol, paracetamol and cigarettes. But in the UK, we have large supermarkets open all hours and they are rarely in residential areas, so we have more sleepy drives at the wheel, in the middle of the night.

It is perhaps hard to remember, when the 24/7 society is presented as being so attractive, that sleep is a fundamental biological need, not an inconvenience. Are the supposed benefits of 24/7 really worth the consequences?

WORRY/STRESS

Worry and stress are important causes of poor sleep. People who suffer from chronic stress have been shown to sleep less, have poorer sleep quality, and find it harder to function well during the day. Brain chemicals connected with SWS signal to the body to stop the production of stress hormones, so poor sleep at night causes the body to boosts its levels of stress hormones. The consequence of this is that you feel more stressed the next day and thus the following night you find it harder to fall asleep, and so on.

In this day and age there are a plethora of things that cause stress and worry. I believe that one of the biggest causes of stress is our inability to cope with the increased information load that we are all experiencing. As mentioned before, we need sleep to allow us to process the information of the day; if we don't get good sleep it is easy to become overwhelmed, and to experience stress.

However, one other vitally important cause of poor sleep was perfectly described by Dr James Walsh in his 1916 article 'Insomnia as a dread':

> *'One of the foremost reasons for the increase in the number of sufferers from insomnia is the fact that so much is said about it in the newspapers and so much talked about it in drawing rooms and other familiar modes of disseminating ideas. The impression produced is that loss of sleep even to a slight degree is an extremely serious event and that it is only a question of a few repetitions of it until the physical condition will break down or the mind give way.'*

It seems a cruel irony that sleep experts by somehow trying to terrify people into getting better sleep with their claims of doom and gloom are essentially contributing to, if not causing, the very problem they claim to want to solve.

Stop trying to sleep!

For the poor sleeper, trying to sleep is counterproductive, the harder you try to fall asleep the less likely you are to do so. Trying to sleep and not doing so will cause you to become angry and resentful that you are not sleeping and worried that you will feel bad the next day and perform poorly. These feelings will of course stop you from sleeping, hence a vicious circle develops, so stop trying to sleep!

CHILDREN

For many children, and their families, the sleep period is not a time of peaceful restoration but rather a time of distress, conflict or wakefulness.

We have all heard it a thousand times

> *'When will my child sleep through the night/go to bed/not wake up early/not come to our bed/not cry?*

The simple answer is: when they want to.

> *'Doesn't he/she know that mummy/daddy has to go to work tomorrow' (delete as appropriate).*

The simple answer is: no they don't.

Stop Blaming the Child

Until very recently, woman was 'mother', her main biological role was to have children, care for them and raise then to adulthood. Like it or not this is what evolution designed her to do, so even if she was working she was at the same time devoted to the health and well-being of their child. This meant that when a child wanted a nap during the day it was not a problem for the child, and perhaps the mother, to have a nap. If the child had a bad night and disturbed mummy's sleep that wasn't a problem as mummy did not have a career to worry about. Now I am not saying that woman should not have careers what I am saying is that it is not a biological imperative for them to have one, any more than it is for a man. However, it is a biological imperative if you have a child to nurture it. Reading various online forums, it seems to be that children have somehow now become an inconvenience, they don't fit into the modern lifestyle. If your child causes you to have a bad night it will likely affect your performance the next day at work. The problem is that, in order to get children to fit in with their lifestyle, rather than change their lives parents are trying to change their children and

then complaining or getting angry when they can't. But it is not the child's fault, they don't know any better. Small children cannot know that mummy and daddy need to be well rested for work tomorrow and they cannot be 'trained' to sleep when convenient to the adults, any more than a cat can be trained.

Children Coming into the Bed

Children, like adults, can only sleep if they feel safe and secure. This is the reason why many children need to sleep with a night light on. It is not that they are scared of the dark, it is that they are scared of the unknown and thus feel vulnerable. A child naturally presumes that safety and security are provided by its parents, not a glow-in-the-dark cat night light. Therefore, if a child feels scared or insecure or lonely it will obviously want to be comforted and reassured by his or her parents. If they are sleeping in a separate room, probably the cause of the problem in the first place, they will naturally come to their parents' room, and perhaps want to get into the bed. Why is this seen as a problem rather than the most natural thing in the world? Just imagine if you, as an adult, woke up and saw glowing animals circling your head, you would be scared witless but somehow you think that is comforting for your child.

Children Crying

Children cry for a very limited number of reasons – when they are scared, alone, hungry or in pain/discomfort and sometimes, just sometimes, a child may cry to attract attention for no obvious reason. However, I defy anyone to tell the difference between a cry for food, warmth, love, soothing, security, and one just for attention. If you as an adult were crying because you were upset or scared and you wanted cuddles from your partner, to know that everything was OK, and they refused, you would rightly be upset. How do you think a child feels when it is ignored by its parents to sob its little heart out, in addition to continuing to suffer whatever made it cry in the first place? Of course, it will keep crying or come to your bed for love and reassurance. Can you imagine what it must be like for a

child in pain to be ignored by its parents, just because the parents are annoyed with its crying and they have read a book that tells them to do this, that, or the other? Again, what is the problem? This is the most natural behaviour.

BED PARTNERS

In 2005, I co-authored a paper with my friends in the Sociology Department of the University of Surrey which investigated the sleep of couples. We found that much of your sleep disturbance is caused by your bed partner.

But surely it is natural to sleep together, I hear you cry. In fact, humans are the only animals that choose to sleep together for 'intimacy'. Sleeping together is essentially a modern, predominantly European, phenomenon brought about simply by our humble dwellings. Indeed, throughout history it has only ever really been the poor who have slept together.

Until the Tudor times we, the poor, slept on the floor around the fire; men, women, children, animals, and even passing travellers all bedded down together on sacks stuffed with straw, horse hair and fragrant plants to keep the bugs away. Most 'houses' at this time were simple constructions with a fire in the middle of the main room, the smoke from which escaped through the thatched roof. This layout caused the upper part of the room to be smoky and, for this reason, it was not possible to have a habitable upper floor. It was only when we started to build chimneys from non-flammable materials that we could safely vent the smoke out of the house, which then allowed another floor to be constructed. This additional space allowed us, for the first time, to build permanent beds as pieces of furniture; and these were placed in what became called the 'bedroom'. Previously we would have had nowhere to store the beds during the day. Often two bedrooms would be constructed, one for the numerous children and one for the parents and any newborn child, although adults still slept in single beds. It was only in the

Victorian times, with increasing prosperity, that double beds started to become the accepted mode of sleeping. An important driver for this change was the desires of Victorian men– who wanted to have more sex with their wife. As author Hilary Hinds puts it, the double bed symbolised the ‘extraordinary Victorian commitment to reproduction’. Essentially the child sleeping in their mother's bed was moved to a separate room to be replaced in a double bed by the seemingly sex-crazed husband.

Interestingly science bears this out. In the book *Sleeping Better Together* the authors state ‘… that women are more disturbed by the male presence in bed than the man by a woman's presence’ and that this may be due to that fact that ‘women appear to react more to the presence of another individual in bed. This may be a logical consequence of the maternal role in infant sleep and development’. From an evolutionary point of view, and throughout history (and still in most cultures), it is the woman's role to sleep with the baby in order to monitor the baby through the night. However, because we have recently replaced this very natural way of sleeping with ‘couple sleeping’ the woman is still functioning in her evolutionary ‘mother mode’ of monitoring the person in bed with them.

Therefore, women have worse sleep than men when they co-sleep because a woman is essentially reacting to the man in the bed in the same way she would do to an infant – monitoring their breathing and their movements to ensure that nothing is wrong. Basically, our society has replaced the infant in the mother's bed with the partner who, in this respect, is just a very big baby.

Sociologists at the University of Surrey found that women actually prioritise their partner's sleep above their own – even to the extent that a woman's ‘concern for her partner's well-being may include responsibility for his sleep, inciting feelings of guilt if she inadvertently disturbs this sleep’.

This implies that women are actually sacrificing, or at least compromising, their sleep in order to ensure that their male partner gets good sleep, and they may even feel guilty when they disturb

that sleep. In practice this could mean that they modify their behaviour in various ways, e.g. laying still when they are awake in the night, not getting up to go the bathroom, and so on.

It would seem that women sacrifice their sleep and their physical and emotional well-being because society has convinced them of the ‘normality’ of sleeping together.

4
SLEEP DISORDERS

The vast majority of people who have poor sleep do not suffer from an actual sleep disorder. Instead their sleep is disturbed by the 'sleep thieves' discussed earlier (see Chapter 3 'Why we are not Sleeping'). However, some people do suffer from a sleep disorder, and so it may be useful to give information on a selection of the more common sleep disorders and their treatment.

INSOMNIA

Insomnia is the complaint of repeatedly

- finding it difficult to fall asleep
- failing to stay asleep
- waking early
- feeling that your sleep is non-restorative/not refreshing
- or any combination of the above.

The diagnostic criteria for insomnia requires that the disturbance of sleep occurs on most nights and, importantly, that it leads to adverse daytime consequences i.e. you feel sleepy during the day, feel your work performance suffers, etc. Therefore, you almost certainly don't suffer from insomnia if you feel awake, vital, and healthy during the day, whatever your sleep pattern.

Different Types of Insomnia

Insomnia is a medical diagnosis with specific diagnostic criteria, which means that many people who are sleeping poorly or feeling a

bit jaded during the day – who consider that they are suffering from insomnia – strictly speaking are not.

There are three specific types of insomnia and although most people think that insomniacs have a problem falling asleep the prevalence of each type of insomnia is roughly equal, (of course it is possible to suffer from a combination of them):

1. **Sleep-onset insomnia.** This is where there is a difficulty in falling asleep. On average most people without a sleep problem take less than 20 minutes to fall asleep after turning the light off, regularly taking more than 30 minutes to fall asleep on the majority of nights would be considered a problem.
2. **Sleep-maintenance insomnia.** This is where there is a problem staying asleep i.e. you repeatedly wake up during the night. You wake momentarily many times during sleep to check that all is right with the world; but such awakenings are very short and you are not aware of them. However, the person with sleep maintenance insomnia wakes during the night and then finds it difficult to get back to sleep. Anxiety is a common cause of sleep maintenance insomnia but it can also be due to other medical reasons such as pain or nocturia (repeatedly getting up to go to the toilet during the night). When assessing sleep-maintenance insomnia it is important to be aware of what wakes you up and what then keeps you awake e.g. you may wake needing to pee but once you have emptied your bladder it may be pain or anxiety that keeps you from falling back to sleep.
3. **Early morning waking.** This is where you wake earlier in the morning than you wish and cannot then fall back to sleep. This type of insomnia is commonly linked to depression but may also be related to the changes in our circadian rhythm that occur naturally as we get older.

Generally young people most commonly suffer from difficulty falling asleep (sleep-onset insomnia), whereas older people more commonly have problems with waking during the night or early in

the morning (NB as we get older our sleep naturally becomes lighter and thus more easily disturbed so problems sleeping are not necessarily indicative of insomnia in the elderly).

Insomnia can last for days, months, or even years. Short-term insomnia lasts up to four weeks, and by its very nature resolves itself with time, and without the need for medical intervention. Chronic insomnia lasts for more than four weeks.

Find Out Why You Can't Sleep

A small number of people suffer from chronic insomnia for no discernible reason. However, for the majority of sufferers their insomnia is a symptom of another problem.

There are numerous causes of insomnia, some more obvious than others. Some causes you can remedy yourself, while others need to be addressed by your GP. Insomnia can be linked to psychological factors, sleep environment, and lifestyle factors, as well as medical conditions, prescribed and recreational drugs, and sleep-related disorders. Below are some of the problems that can cause disturbed sleep. If you have been suffering from poor sleep and you suspect that it is due to one or more of the following then you should discuss your sleep with your GP.

- **Physical Medical conditions**. Insomnia can be caused by a number of underlying physical conditions, such as heart disease, respiratory disease, neurological disease, joint or muscle problems, gastrointestinal disease or chronic pain. If your sleep is disturbed by physical illness then it is possible that the effective treatment of the physical condition may, by itself, improve sleep. However, some treatments may have side effects that could actually make your sleep worse, so make sure you mention that you are having problems sleeping to your doctor, particularly if this occurs when starting a new medication.
- **Mental health problems**. Mental health problems such as stress, anxiety, depression, schizophrenia, bipolar disorder, and

dementia are also linked to disturbed sleep. Again, treatment of the primary condition may lead to improved sleep.

- **Medications**. Many prescribed and over-the-counter medicines can also cause insomnia, including some antidepressants, some epilepsy medicines, medications for high blood pressure, hormone treatments, non-steroidal anti-inflammatory drugs, and some medicines for asthma. If you are having problems sleeping it is important that you check with your GP the possible effects on sleep of any medications that you are prescribed. This is especially so if you are taking a number of different medications. Withdrawal from some medications, including antidepressants and sleeping pills, can lead to sleep problems.

There are a number of lifestyle/environmental problems that can disturb sleep. If you take a moment to reflect it should be pretty clear if your sleep is being disturbed by your lifestyle or your environment. In reality you should try to address these issues yourself. You should not expect your GP to use their time and resources trying to sort out something that is not a medical problem, nor should you go to your GP asking for sleeping pills because you cannot be bothered to adopt more sleep conducive behaviours.

When to go to Your GP

If for a period of four weeks or more you have had difficulty getting to sleep, or staying asleep, or you feel unrefreshed by sleep on the majority of nights, and this is having an effect on your daytime well-being, then you should go and see your GP to discuss your problem. Unfortunately, most doctors have little, if any, training in sleep medicine and because of this lack of training GPs often ignore, misdiagnose or under-diagnose sleep problems. One of the crucial things in assessing your sleep problem is to take a sleep history from you. However, GPs generally do not have the time or the skills to take a proper sleep history. Therefore, to help them – and more importantly help you get the most appropriate treatment for your

problem – below are 15 questions that you may find useful to answer before you go to your GP as they could provide information helpful to getting an accurate diagnosis. Remember, you have the right to have your sleep problem taken as seriously as any other illness.

1. Do you regularly have difficulty falling asleep or staying asleep or do you wake early in the morning?
2. Do you feel refreshed/well rested in the morning?
3. Do you fall asleep unintentionally or do you have to fight to stay awake during the day?
4. Does your sleep difficulties or daytime sleepiness interfere with your daily activities?
5. Do you snore loudly?
6. Do you hold your breath, have breathing pauses, or stop breathing in your sleep?
7. Do you have restless or 'crawling' feelings in your legs at night that go away if you move?
8. Do you have repeated rhythmic leg/arm jerks or twitches during your sleep?
9. Do you have nightmares, or do you scream, walk, punch, or kick in your sleep?
10. Do any of the following things routinely disturb you in your sleep e.g. pain, other physical symptoms, worries, medications, etc?
11. Do you feel sad or anxious during the day? What is your mood like in the morning?
12. Do you work shifts or 'odd' hours?
13. How do you sleep when you are away from home or on holiday?

14. Does your work or any other activity prevent you from getting enough sleep?
15. Do you wake up during the night more than once needing to go to the bathroom?

To further help your GP understand your problem I suggest that before you see your GP, you also keep a sleep diary. Record the following information each day for a week or so, if possible.

- bedtime
- falling asleep time
- night-time awakenings; when, and how long?
- time to get back to sleep
- waking up time
- getting out of bed time
- naps; when, and how long?
- timing of meals
- caffeinated beverages and alcohol; what, and when?
- medications; what, and when?

PERIODIC LIMB MOVEMENT DISORDER (PLMD)

Periodic Limb Movement disorder is where the sufferer repeatedly makes kicking and jerking movements during sleep, most commonly with their legs, or less frequently their arms. Although the sufferer is unaware of what is happening the repeated movements can disturb their sleep causing them to experience daytime sleepiness. Because the sufferer is usually unaware it relies on the bed partner to notice this behaviour. If your partner repeatedly jerks their limbs during the night or repeatedly seems to

‘kick’ or ‘punch’ you then you should suspect PLMD and encourage them to visit their GP. Women are more likely to suffer from the condition than men. Causes can include too much caffeine, stress and mental health problems.

RESTLESS LEGS SYNDROME (RLS)

RLS causes you to have an irresistible urge to move your legs. Sufferers may feel sensations of pain, tingling, itching, or prickling, (one person described it as ‘ants crawling under the skin’), which is only relieved by moving the legs. However, the sensations return when the legs are still again. RLS can occur if the sufferer sits immobile in a chair for an extended period of time but it is most likely to occur when they lie down in bed, making sleep difficult. RLS can be caused by iron deficiency, anaemia, or folic acid deficiency. Some pregnant women suffer from the condition, especially in the last trimester of pregnancy. The symptoms may also be due to another underlying condition such as diabetes, rheumatoid arthritis, neurological diseases, or Parkinson's disease. So, it is important you see your GP if you suspect RLS. Certain drugs can make RLS worse, including antidepressants, calcium blockers, anti-nausea medications, some anti-allergy drugs, and too much caffeine. RLS may be helped by ensuring your diet contains adequate amounts of iron, folic acid, and minerals such as calcium, potassium, and magnesium. Walking, stretching, and yoga may also help to relieve the symptoms. There are also treatments available from your GP.

NOCTURIA

One of the main causes of sleep impairment as we get older, besides those associated with natural ageing, is nocturia i.e. needing to go to the bathroom multiple times during the night. Needing to pee more often in the night is not just a part of getting older, it could be indicative of a treatable problem and you should visit your GP if this

is a regular occurrence. Frequent nocturnal awakenings and the resultant sleep disturbance associated with nocturia can lead to daytime fatigue and sleepiness together with a decrease in cognitive functioning and alertness.

Approximately 10% of the general population over age 20 has nocturia two or more times per night, but this increases with age e.g. in the 50–59 age group, 58% of men and 66% of women experience nocturia.

While the sleep disturbance of the person with nocturia is of primary importance it should also be remembered that the sleep of the bed partner can also be greatly disturbed by nocturia, caused by the sufferer having to get out of bed and go to the bathroom.

SNORING AND OBSTRUCTIVE SLEEP APNOEA

Although people who snore loudly are frequently the target of bad jokes and the occasional victims of middle-of-the-night elbow thrusts, snoring is no laughing matter. Loud snoring can be a sign that something is seriously wrong with your breathing during sleep. Snoring is a sign that the airway is not fully open and the distinctive sound of snoring comes from efforts to force air through the narrowed passageway.

It is estimated that 10–30% of adults snore. For most sufferers, snoring has no serious medical consequences. But for an estimated 5% of people, extremely loud, habitual snoring can be the first sign of the more serious disorder, Obstructive Sleep Apnoea (OSA). OSA has a particular pattern of breathing during the night with pauses in the snoring followed by gasps as the breathing starts again. These pauses can last from a few seconds to over a minute and can occur hundreds of times a night.

OSA can seriously disturb sleep producing extreme levels of sleepiness during the day interfering with work and personal life,

often without the sufferer knowing the cause. People with OSA may have trouble concentrating and can become unusually forgetful, irritable, anxious, or depressed. These problems can appear suddenly or can emerge gradually over time. If these problems emerge over time it is common for sufferers to ascribe the sleepiness during the day to the consequences of normal ageing. Because OSA puts a strain on the body it can trigger high blood pressure, heart failure, heart attacks and stroke and has been linked to a significant increased risk of car accidents due to the daytime sleepiness.

Often people with OSA seek help for disturbed sleep not realising that OSA may be to blame. People with OSA may notice that they are waking frequently during the night, gasping for air and thrashing about in their sleep. Because the sufferer is often not aware of what is happening during the night, information from the bed partner is all important. Sufferers may complain of morning headaches and loss of interest in sex, and men may experience erectile failure. OSA is most often found in middle-aged men but anyone can suffer OSA, even children.

OSA is more common in pregnancy particularly during the final trimester and has been associated with conditions such as preeclampsia/hypertension, and gestational diabetes (it should be noted that snoring has even been linked with adverse pregnancy outcomes).

It is imperative to seek medical advice if you or your bed partner suspect either of you suffer from OSA. OSA can usually be effectively treated. If you have mild sleep apnoea, treatment may include advice on lifestyle management, including helping people lose weight, stop smoking and/or decrease alcohol consumption. Serious OSA is routinely treated with a device known as CPAP (Continuous Positive Airway Pressure). This device uses air pressure to keep the upper airway open thus reducing the number of apnoea, and CPAP works very effectively in most people. However, you actually have to wear it for it to work. Other

treatments such as mandibular positioning devices are also available and are useful for some patients. You should consult your GP about the available options.

TEETH GRINDING OR CLENCHING (BRUXISM)

The repeated grinding of the teeth can cause such severe damage that teeth are sometime lost. Bruxism affects about 1 in 12 people and disrupts the sleep of both the sufferer and their bed partner. In addition, it can cause headaches and muscle aches. The sound of the sufferer grinding their teeth can disturb their bed partner. Bruxism is most common in people with sleep apnoea, heavy drinkers, smokers, and coffee drinkers, and has been linked to anxiety, stress, and dental problems. Stress management techniques and/or lifestyle changes such as cutting down on alcohol and coffee and stopping smoking can be helpful in reducing its occurrence. In severe cases the use of a plastic splint or tooth guard to protect and preserve the teeth may be necessary during the night.

CIRCADIAN RHYTHM DISORDERS

Circadian Rhythm Disorders are a result of irregularities in the biological clock. Common manifestations of such disorders are where the biological clock has been affected by a change in sleep/wake patterns such as would be the result of shift work or trans-meridian flights i.e. jet lag. However, there are cases where the biological clock is running at a different time to normal.

There are two main forms as follows.

- Advanced Sleep Phase Syndrome (ASPS), where the sufferer's bedtime has got progressively earlier in the evening so they can't stay awake in the evening and wake very early in the morning.

- Delayed Sleep Phase Syndrome (DSPS) is the opposite where bedtime becomes progressively later, the sufferer stays awake long into the night and cannot get out of bed in the morning.

The main symptoms are insomnia and/or excessive daytime sleepiness. Both ASPS and DSPS can be improved by gradually rescheduling sleep patterns until they become more ‘normal’. Exposure to bright light, either the sun or a light-box, in the morning can help a DSPS sufferer to sleep earlier and exposure to bright light in the evening can help an ASPS sufferer to stay up later.

NIGHT CRAMPS

Night cramps are where the calf muscles, or occasionally the muscles in the feet, suddenly contract during the night causing pain, which disturbs sleep. As cramps have been linked with various dietary deficiencies including B vitamin, magnesium, calcium, and potassium, eating a balanced diet can help prevent them from occurring. Cramps have also been linked to the use of diuretics and some other medications, dehydration, diabetes, and hormonal fluctuations. Gently stretching or massaging the calf muscles before bedtime can help.

NARCOLEPSY

Narcolepsy is a very rare condition which causes the sufferer to have an uncontrollable urge to fall asleep whatever they are doing, even in the middle of a sentence. It's thought to be caused by the faulty control of the sleep/wake cycle, in particular REM sleep, and there is some evidence that it might be linked to a lack of orexin, a brain chemical that promotes alertness although there is also evidence of a genetic predisposition. Other than the uncontrollable sleep attacks, which of course could be extremely dangerous in particular situations, symptoms include insomnia and excessive daytime sleepiness. Narcolepsy is sometimes linked with cataplexy

where there is a loss of muscle tone during periods of high excitement. Narcolepsy usually starts to occur in young adulthood. Non-pharmacological treatment is based around lifestyle changes and coping strategies and there are a few medicines that can help in managing the symptoms of narcolepsy. If you experience an uncontrollable urge to fall asleep during the day, see you GP.

PARASOMNIAS (OR THINGS THAT GO BUMP IN THE NIGHT)

Sleep is not an 'all or nothing' phenomena. Parts of your brain can be asleep while others are awake. This means that if during SWS a particular part of the brain wakes up, a partial arousal, then it is possible to carry out the behaviour for which that part of the brain is responsible e.g. walking, talking, etc., without being conscious of it, because the conscious part of the brain is still asleep.

Parasomnias are a group of sleep disorders that involve movement during sleep, or seeing, hearing, or feeling things that aren't there. They can often occur together.

Sleepwalking

Sleepwalking (somnambulism) is a general term used to describe disorders where people perform behaviours during their sleep. These can range from simply sitting up and looking around, to walking around and performing tasks normally done while awake e.g. going to the fridge for a drink of milk, going to post a letter, or even getting in a car and driving. Somnambulism occurs during deep SWS and is thus not related to dreams.

Sleepwalking is reported to occur in approximately one or two per cent of adults. There is a strong genetic link in the occurrence of sleepwalking, but other causes can include overtiredness, stress, sleeping pills, alcohol – essentially anything that fragments sleep can precipitate these partial arousals. Avoiding things that can disturb sleep can help, but for chronic sleepwalkers it is also

important to make the environment as safe as possible, to prevent potentially injurious accidents. Because sleepwalking occurs during SWS sleep it is most liable to occur in the first third of the night in adults. Sleepwalkers can put themselves in situations which are dangerous. So, if necessary, wake them immediately if they are going to cause harm to themselves or others. Waking them won't kill them. However, if it is safe to do so just gently guide them back to bed.

Sleep talking

Sleep talking (somniloquy) is pretty self-explanatory: it involves talking during sleep. The complexity of what is said can range from complete gibberish or mumbling to complicated dialogues or monologues that make sense. Anyone can experience sleep talking, but the condition is more common in males and children. Sleep talkers are not aware of their speech so they may sound different from their normal speech. Sleep talking may be brought on by anything that disturbs or lightens sleep e.g. stress, depression, fever, sleep deprivation, alcohol, etc. Although not physically or mentally harmful, sleep talking can cause embarrassment and can annoy a bed partner, particularly if you say the wrong thing or ‘confess’ to something. Luckily most courts of law would rule anything said during sleep talking as inadmissible, although you may have a harder time convincing you bed partner that ‘it means nothing’.

Night Terrors

Whereas a nightmare is a bad or scary dream (and like all dreams if you wake up during it you will remember some of the story and this can be frightening or unsettling), night terrors are a parasomnia which occur during deep sleep, like sleepwalking or sleep talking. During a night terror the sleeper can appear distressed or frightened and can exhibit movements that add to the impression that they are terrified of something. However, unlike a nightmare if the sleeper wakes up they have no memory of what happened during the night terror. They are common in children but adults can have them, and

the simple advice is observe the sleeper to ensure they come to no harm but do not attempt to wake them, however distressed they may appear and however distressing it is for you.

Sleep Sex

Sleep sex (sexsomnia) is a very rare parasomnia that involves a person, almost exclusively young and male, engaging in sexual activities (including penetration) while still asleep. Although such behaviour is going to disturb the bed partner, in a loving relationship it may be understood as 'just one of those things that happens'. (I have spoken to two woman whose partners both suffered from sexsomnia and they both said that they didn't really see it as a problem as their partners were better at 'it' when they were asleep than when they were awake.) However, it may be hard for the bed partner to understand the fact that this behaviour is not intentional and, in extreme cases, sexsomnia has led to accusations of sexual assault, including rape. As with other parasomnias 'sexsomniacs' do not remember the acts that they perform while they are asleep. Sexsomnia can co-occur alongside other sleep disorders such as sleepwalking, sleep apnoea, night terrors and bedwetting. It can be triggered by stress, previous sleep deprivation, and excessive consumption of alcohol or drugs.

Nocturnal Sleep-Related Eating Disorder

This is another rare behaviour that is related to sleepwalking, during which people, mainly female, eat while they are asleep. Sufferers have been known to walk to the kitchen and prepare food without a recollection of having done so. They can consume a considerable number of calories during these episodes and this can lead to weight gain and increase their risk of developing Type 2 diabetes.

Other parasomnias are related to REM sleep, and some of these are discussed below.

Nightmares

Nightmares are essentially just bad, scary, horrific, frightening, disturbing dreams. The images and plots are often unsettling, with feelings, such as fear, anxiety, grief, and anger. In just the same way that some movies are scary, some dreams can also be scary and, as mentioned before, when you are dreaming your dreams are real to your mind and body so a scary dream will seem vivid and genuine. While for most of us our nightmares are just part of our rich dream life for some people recurrent nightmares of traumatic events may be a symptom Post-Traumatic Stress Disorder. Counselling should be sought if the nightmares are linked to a traumatic event.

Sleep paralysis

Sleep paralysis is a common condition where people wake up during the night and feel that they cannot move and/or feel a heavy pressure on their chest making it difficult to breath. Essentially when you are dreaming you are usually paralysed so that you are unable to act out your dreams. However, sometimes when you wake up from a dream this paralysis may persist for a number of seconds causing the sensation of being unable to move or breathe. Although sleep paralysis can be frightening, especially if it occurs after a ‘scary’ dream, it is harmless. It is the reason why some people feel that certain strange events occur, such as being abducted by aliens.

REM Behaviour Disorder

REM behaviour disorder is a condition that is often confused with sleepwalking. As its name suggests REM behaviour disorder occurs during REM sleep and not SWS like sleepwalking. In some people the paralysis associated with REM sleep does not always occur and therefore they can physically act out their dreams. REM behaviour disorder can occur because of abuse of drugs, medicines, or alcohol, or in people withdrawing from them. It can also be a precursor of Parkinson's disease and is common in dementia. Also, there is a

very small population of otherwise normal elderly men who seem to become chronic sufferers (see Appendix 1 ‘Sleep and the Law’).

JET LAG

Although you may not believe it, jet lag (properly termed jet-lag disorder) is a recognised sleep disorder. My first job in the sleep field was working in the Neurosciences Division of the Royal Air Force Institute of Aviation Medicine (IAM) where I was involved in a number of studies looking into jet lag. Jet lag is a problem because your body clock is unable to cope with the lengthening or shortening of the day that is involved when travelling across multiple time zones; body rhythms become out of sync with local time. The consequences of jet lag mean that you may be fully awake at odd hours, or very sleepy during important meetings; your appetite is affected and your mental and physical performance is reduced. Almost all travellers will suffer some of the effects of jet lag. A very rough rule of thumb is that it will take about 1–1½ days to recover for each time zone you cross e.g. it can take more than a week to get back to normal after a flight from New York to London. The following advice may help reduce the effects of jet lag.

- The sun entrains our body rhythms so if it is light when you arrive go outside for a walk to get some sunshine and fresh air then try and stay awake till it is dark and then follow your normal bedtime routine.
- If it is dark when you arrive go to bed as soon as is practical. Try to follow your usual bedtime routine to encourage sleep and set your alarm for the desired wake-up time.
- Adjust your watch to the new time as soon as you get on the plane.
- Try to eat your meals at the correct local time, including those on the aircraft, even if you don't fancy it.

- Dehydration is thought to make jet lag worse, so drink plenty of water on the flight; and it is wise to avoid drinking excess alcohol during the flight.
- If you are on a daytime flight then get a window seat and keep the window blind open until it gets dark.
- If at all possible don't drive or have important meetings immediately after the flight.
- If you have an overnight flight try and maximise the amount of sleep you can get by eating before you get on the aircraft.

You may wonder why, on a daytime flight, the cabin crew encourage you to put the window blinds down and sleep. Well it isn't to help you reduce the symptoms of jet lag it is merely so they can get some rest without your constant requests for more beer. It is not normal to have lunch and then have a long nap during the day so resist the temptation to do so when you are on an aircraft. If it is daylight outside, stay awake.

You may have seen the stories that new aircraft from the big manufactures are somehow designed to reduce jet lag. The claim is that because they have slightly bigger windows, are pressurised to a slightly lower level, and have funky lights that change colour, that this is going to ameliorate the experience of jet lag. It is not. It may have some small benefit for the way we feel but jet lag is caused by getting on a metal tube and flying rapidly across numerous time zones. By its very definition it is an unavoidable consequence of flying by jet. Rather than boasting about how clever the design of the aircraft is, why don't airlines just make it a more comfortable experience? Why is the seat pitch on an aircraft designed for a 2-hour flight the same as that on one capable of flying 17 hours non-stop? Indeed, some short-haul aircraft actually have better seat pitch than most long-haul configurations. Do airlines really think there is no difference in the comfort needed for these two scenarios?

Remember the only effective way to prevent jet lag, is to go by boat.

5
TREATMENTS FOR SLEEP PROBLEMS

If your sleep problem is caused by lifestyle/environmental issues then you really should not be bothering your GP with it. Identify the problem(s) and then resolve it (them). If you really need someone to tell you what to do before you will do it, and your mum is not available, then I am sure your overworked and stressed GP will find the time to print off a sleep hygiene leaflet for you. If the problems are less easy to resolve, because you really will not listen to common sense unless it is delivered by a trained professional, then they may suggest Cognitive Behavioural Therapy for Insomnia. Because you may have to wait many weeks to access this on the NHS, you may decide to go private and see any of the therapists and alternative therapists who have set themselves up as 'sleep experts' of one type or another, seemingly on the basis that they once read a book on the subject or have been on a three-day training course. Well, it's your money and, with the rates they charge, it will very soon be theirs.

If your insomnia is related to another medical condition your GP will probably try to resolve that problem with the appropriate treatments, although be aware that doctors rarely consider the effects that medicines have on sleep when they prescribe them. In this instance GPs may offer sleeping tablets in the short-term to help you sleep whilst the other treatment takes effect and your sleep naturally improves. Only in extreme cases and after exhaustive investigation and accurate diagnosis of your insomnia should a GP consider prescribing sleeping tablets long-term.

WHEN TO CONSIDER SLEEPING PILLS

There are a number of options with regards to the pharmacological treatment of sleep problems.

OVER-THE-COUNTER SLEEP AIDS

Most over-the-counter sleep aids contain first-generation, sedative antihistamines, such as diphenhydramine and promethazine. These drugs were originally used to treat allergies; however, they were found to cause daytime drowsiness. It was thus thought that this ‘sedation’ may be useful in helping aid sleep problems. But sedation, while it may be helpful in aiding sleep, is not the same as sleep induction or sleep maintenance. Of patients taking OTC sleep aids 10–25% experience impaired daytime function. Other possible side effects include a dry mouth, blurred vision, and stomach upsets. These medicines are not long-term treatments for sleep problems and they shouldn't be taken for longer than two weeks without seeing your GP. Any beneficial effects they may have on sleep is limited, their effectiveness may be lost after just a couple of days. People's sensitivity to antihistamines can vary widely – in some very sensitive people an OTC sleep aid may cause a long night of good sleep, in others it can have little, if any, effect.

Note: Over-the-counter sleeping pills shouldn't be taken by anyone with angina, glaucoma, prostate, or urinary problems, nor alongside anti-nausea or travel-sickness medications. If in doubt, always speak to your pharmacist or GP first.

PRESCRIPTION SLEEPING PILLS

Sleeping tablets merely help you fall asleep and, for a period of time, keep you asleep. They do not change the architecture of sleep, i.e. they do not increase the amount of SWS. Nor do they treat the causes of your insomnia, they merely mask the symptoms. After a few weeks of taking sleeping tablets, most users will gain no more than 20 minutes sleep and few will find the time taken to fall asleep reduced by more than 15 minutes. The NHS recommends that GPs prescribe short courses, to avoid dependency (addiction).

It is often said that sleeping tablets can be used in the short term in order to help re-establish more normal sleep patterns. However, their benefits in this regard are limited by the fact that do not treat the causes of insomnia and by taking them the patient may be less likely to make any lifestyle or behavioural changes.

Benzodiazepines

The benzodiazepines (medicines such as temazepam, nitrazepam, lormetazepam, and diazepam), as a class of drugs, have a wide range of action. Some of them are effective in the treatment of anxiety whilst others are more suitable for the treatment of sleep problems. They have repeatedly been shown to be effective in insomnia. Common side effects can include drowsiness or dizziness the following day. Benzodiazepines shouldn't be taken with alcohol, because they enhance its effects.

The ‘z’ Drugs

These newer drugs, zolpidem, zopiclone, and zaleplon are related to the benzodiazepines but have a shorter duration of action and are generally considered safer. Their short duration of action means that their hypnotic action may last only four to five hours and so they may be less effective in keeping you asleep throughout the night.

But Aren't Sleeping Tablets Going to Kill Me?

In the UK, at least, there is a strong resistance to the use of sleeping tablets based on four commonly claimed problems with the sleeping tablets.

- Tolerance. This means that, as your body gets used to the drug, higher doses are needed, to get the same effects.
- Dependency or addiction. This means you feel you are only able to sleep when you take the pills and that you will not sleep if you don't take the pills.

- Rebound. This is where symptoms worsen when you stop taking them.
- Falls. They cause falls, particularly in the elderly.

However, research has shown that tolerance to these drugs is actually infrequent. Indeed, a study from a couple of years ago showed that zolpidem was still exerting a positive benefit on sleep after eight months.

The issue of addiction is contentious. While patients may become psychologically dependent on sleeping tablets – believing that they can only fall asleep having taken the tablet and if they don't, they won't sleep – evidence of actual addiction is rare, particularly when the drugs are used at the recommended dose. I had a 94-year-old man call me during a radio phone-in who said that every night that he took a sleeping pill he slept well, but his GP refused to prescribe him a nightly dose for fear of addiction. He is 94 years old for crying out loud. Really what is the worst that can happen? This is not medicine that is dogma.

Of course, if you stop a sleeping tablet you will get withdrawal symptoms and may suffer rebound insomnia but this appears less of an issue with the newer 'z' drugs. It should not perhaps be a surprise if the underlying cause of the insomnia is still present that withdrawing the sleeping pills will mean that the insomnia reappears.

With regards to falls in the elderly, a big study of the relationship between insomnia, hypnotic use, falls, and hip fractures in older people showed that, in elderly nursing home residents, insomnia – but not hypnotic use – is associated with a greater risk of subsequent falls.

That is not to say that sleeping tablets are in any way perfect drugs – they are not. But it should be remembered that all drugs have side effects. The question is whether the side effects are worse than the condition: given the significant risks to health associated with

insomnia is an insomniac better off treated with sleeping tablets or not?

These drugs should only ever be given long-term to patients with an accurate diagnosis of chronic insomnia which is responsive to treatment, not just anyone who needs a ‘little help getting to sleep’.

If you have been taking sleeping pills for 20 years and your GP has never even taken a sleep history, you should have every right to feel aggrieved, that they have never tried to get to the root of your problem. Also, if they have continued to write you repeat prescriptions for all these years, how can they claim that it is somehow your fault for becoming ‘addicted’ to the drug.

Coming off Sleep Medication

Insomniacs are typically afraid of stopping their sleeping tablets; they believe that they need to take the medication in order to sleep and if they don't take the pill then they will not be able to sleep. This idea becomes a self-fulfilling prophesy. Abruptly stopping a sleep medication may give rise to symptoms of withdrawal as well as what is called ‘rebound insomnia’ where the patient experiences insomnia similar or worse than pre-medication. This can cause them to believe firmly in the need for them to take the sleeping tablet in order to get sleep. Rebound insomnia may only last a few days, and if patients are made aware of it they may be willing to endure a few night's broken sleep for the benefit of coming off the medication, but this should only ever be done under the close supervision of a GP. Alternatively withdraw the medication by dose reduction very gradually.

Antidepressants

Because of the ‘fear’ surrounding sleeping tablets, particularly in the UK, GPs will often prescribe antidepressant medications such as amitriptyline, dothiepin, clonazepam, venlafaxine, mirtazapine, and trazadone for sleep problems. These are usually given in lower doses than would be used in the treatment of depression and, like

antihistamines mentioned earlier, they are given because they have sedative side effects. However, remembering that sedation is not sleep induction or sleep maintenance it should come as little surprise that there is very limited evidence for the effectiveness of these drugs in insomnia that is not linked to depression. It is a fact that some of these drugs are very cheap and are thought by the doctors to relatively free of side effects, so this is perhaps the reason that GPs like to use them, regardless. If you are not depressed and your GP prescribes one of these drugs ask them why? Common side effects include a dry mouth and blurred vision and there may be difficulty in urinating, sweating, and an irregular heartbeat.

What Should I Take?

My advice is that you should ask your doctor what they would prescribe for their friends or family or wish to take themselves if they were in a similar situation and then tell them to prescribe you that same drug. They may get defensive and it may annoy them but it is your health and well-being at stake, not theirs.

COGNITIVE BEHAVIOURAL THERAPY FOR INSOMNIA (CBT-I)

Cognitive Behavioural Therapy for Insomnia has been shown to be successful in treating mild to moderate insomnia in some people and, unlike sleeping tablets, the benefits of CBT-I have been found to persist beyond the end of treatment. CBT-I, is usually delivered over the course of six to eight sessions, although there are shorter versions that have also been found to be effective. CBT-I is designed to target both the inappropriate thought processes and behaviours that can lead to sleep problems. Beliefs about sleep, and the effects of a lack of it, can cause anxiety and exacerbate sleep problems, so CBT-I also aims to give the patient a more realistic view of how much sleep they need and the effects of insufficient sleep.

Whilst CBT is effective in many cases of insomnia access to CBT-I sessions on the NHS is minimal, which has lead to the increasing prescription of online courses.

There are a number of techniques that come under the umbrella of CBT-I:

- Stimulus Control Therapy
- Sleep Restriction Therapy
- Sleep Hygiene Education
- Cognitive Therapy
- Relaxation Therapy.

Stimulus Control Therapy

This aims to create a strong associate between the bed and sleep and its basic principles are

- go to bed only when tired
- limit activities in bed to sleep (and sex)
- get out of bed at the same time every morning
- get out of bed when sleep onset does not occur within 30 minutes.

Sleep Restriction

The aim of sleep restriction is to restore the natural drive to sleep by restricting a patient's time in bed (TIB). The procedure is as follows.

- Use a sleep diary to measure sleep for two weeks.
- Calculate the average time spent asleep (TST).
- Cut TIB to the TST (but not less than four hours per night). No additional sleep is allowed outside these hours.

- Record on your daily sleep log the actual amount of sleep obtained.
- Compute sleep efficiency (SE% = (TST ÷ TIB) × 100).
- Based on a weekly average sleep efficiency, increase sleep time by 15 minutes TIB if SE% >90%.
- Reduce TIB by 15 minutes if efficiency is SE% <80%.

Sleep restriction is not recommended for patients with a history of mania, obstructive sleep apnoea, seizure disorder, parasomnias, or those at significant risk for falls.

NB This process may take several weeks or months to be effective and it is important to understand that for the first few weeks it could lead to high levels of daytime sleepiness, so those people who cannot safely be sleep deprived should not undergo this process. I believe that sleep restriction, although recommended in the NHS sleep hygiene advice, should only ever be undertaken in consultation with your GP.

Sleep Hygiene

Sleep hygiene is a basic set of 'rules' designed to control the environment and behaviours that precede sleep, they usually take the form of a few common-sense rules as follows.

- Avoid napping during the day; it can disturb the normal pattern of sleep and wakefulness.
- Avoid stimulants such as caffeine, nicotine, and alcohol too close to bedtime.
- Avoid eating a heavy meal close to bedtime and be aware dietary changes can cause changes in your sleep patterns.
- Ensure adequate exposure to light during the day – light exposure helps maintain a healthy sleep-wake cycle.

- Associate your bed with sleep. It's not a good idea to use your bed to watch TV, listen to the radio, or read.
- Make sure your bed is comfortable and the temperature and light levels in your bedroom are appropriate.

However, despite the fact that your doctor may give you a sleep hygiene leaflet, sleep hygiene on its own is ineffective in treating insomnia

Cognitive Therapy

This is designed to decrease the anxiety and arousal associated with insomnia by targeting the patient's dysfunctional beliefs/attitudes about sleep.

- ‘I cannot function without a good night's sleep.’
- ‘I am worried that I will never get a good night's sleep.’
- ‘I need eight hours of sleep to feel at my best.’
- ‘I can only sleep if I take a sleeping pill.’
- ‘Insomnia is just part of growing older.’

Unhelpful thoughts such as the above can actually make your insomnia worse, by creating unrealistic expectations, and an inaccurate perception of the amount of time you spend lying awake.

Research has shown that people who claim to suffer from insomnia actually overestimate the amount of time they take to fall asleep and the amount of disturbance they suffer during the night. After learning they slept for longer than they'd thought, they began sleeping better.

Relaxation ‘Therapy’

This is essentially helping people to relax prior to bedtime to help them fall asleep. Now I am not quite certain why you cannot do this yourself and why you need ‘training’, but it's your life. Various

techniques used by therapists include hypnosis, guided imagery, and meditation; but essentially anything that helps you wind down and relax at the end of the day will help. Relaxation training on its own is not considered sufficient treatment for insomnia

Acceptance and Commitment Therapy for Insomnia

This is a variation of CBT-I, although it is claimed by some proponents to have major differences – and of course to be superior to the original. However, in contrast to CBT-I that has countless scientific papers, by renowned scientists, therapists and researchers, providing evidence of the effectiveness of CBT-I, there are far fewer papers concerning the effectiveness of ACT specifically for insomnia.

So will the Internet Treat my Insomnia?

Maybe. But it is an interesting and perhaps pertinent story that the main investor in one of the best known online CBT-I applications, invested his money in developing the online course after his insomnia was cured by reading a book by the therapist/researcher behind the online course! The book is, by the way, much cheaper than the online course.

Much of CBT-I can be done without a therapist, as most of it is common sense and just requires some will power and effort on your part. Now, I fully recognise that there are some people who have to have an ‘expert’, ‘therapist’, ‘councillor’, or whatever, to tell them something before they will do it, even if it is just common sense. It is as though they believe that money = quality of information.

SLEEP TECHNOLOGY IS THE FUTURE!

Sleep Wearables

There are numerous devices that claim to be able to track your sleep. They do this by simply measuring the movement of the

sleeper. The basis of this technique is work done in the 1980s and 1990s for the technique known as wrist actigraphy (my PhD was concerning the use of actigraphy in psychopharmacology). The original algorithms were optimised and validated for use with sophisticated, accurate, and reproducible devices, worn on the non-dominant wrist of the sleeper. The basic principle behind them can be simply stated as 'movement above a certain count or threshold = wake'; 'movement below that count or threshold = sleep'. Even though wrist actigraphy is used in sleep research and sleep medicine it is not particularly accurate in measuring sleep when compared to polysomnography (i.e. recordings of the actual brainwaves and other physiological parameters in order to quantify sleep) and few researchers/clinicians would use them without also using sleep diaries. Wrist actigraphy cannot differentiate between 'light' and 'deep' sleep or identify periods of REM sleep, and yet the new wearables claim they can, which is puzzling to say the least. While some wrist actigraphs and their algorithms have been validated and certified as medical devices the new devices/algorithms have little if any scientific validation. So, while they might provide a topic of conversation with your friends down the pub, they should not be relied upon to give you any sort of accurate information about your sleep. And, certainly, should not be used to make a decision about your alertness or ability to safely undertake a 500-mile drive. If you want a record of your sleep pattern why not keep a sleep diary, much cheaper and just as (in)accurate.

Sleep Sensors

The accuracy of devices that detect movement on or under the mattress can perhaps be best illustrated by the story (perhaps apocryphal) of the night before the first manned space flight. There were two possible cosmonauts, Gagarin and Titov, to make this flight, they had trained together for weeks and yet still no decision had been made on the final night before lift-off as to who would fly the mission. On going to his bedroom that night Gagarin noticed that there were wires coming out from under his mattress and he

reasoned that the decision as to who would fly would be based on who had had the best sleep. So, with this in mind Gagarin stayed awake all night without moving a muscle, and was of course the first man in space.

Sleep Apps

There are countless apps that claim to measure your sleep and give you some sort of sleep 'score'. Such scores are essentially meaningless, first because these apps are inaccurate in measuring sleep, and second because there is no inherent baseline to the scores e.g. a score of 77 could mean anything and you have no idea of the magnitude of change in you sleep that would for instance lead to an 'improvement' in the score to 86. It is also important to know that scores can naturally vary from night to night, so you do not know whether any 'improvement' in sleep on a single night is the result of you actually sleeping better or due to the inherent variability of the measure.

Some apps are designed to wake you up at the 'optimal' time. Now these will tend to be highly inaccurate as they are based on the wholly erroneous idea of a 'fixed' 90-minute sleep cycle (see 'Do I Need to Sleep in 90-minute Cycles' below).

Recent research has shown that sleep tracking devices and apps are predominantly used by perfectly healthy people. Their use runs the risk of becoming what is known as the 'worried well', people who are worrying so much about their sleep that they are actually not sleeping. There are reports of people telling their GP they have insomnia on the basis of the information from their wearable/app.

Son et Lumière

There are numerous devices and apps that produce various types of noise supposedly designed to help you sleep. There is evidence that white or better still pink noise can potentially help you sleep by masking annoying sounds. The benefit of other types of sound is dependent upon whether your brain perceives them as a threat.

Almost everyone on the planet has heard the sound of rainfall but if you live 600km from the coast your brain may find it somewhat surprising to hear the sound of crashing waves as you fall asleep; and who, apart from a very limited number of marine biologists, regularly hears whale song?

A number of 'smart' lights for sleep have been, or are being, developed. They are designed either to manage your alertness during the day, aid getting to sleep at night and/or wake you naturally in the morning. Our understanding of the effects of light on an individual's circadian rhythms is still in its infancy and so while they are vastly more sophisticated than just switching on and off a light bulb, they are not yet sophisticated enough to precisely modify our sleep or alertness. A lot more further basic scientific research is needed in this area.

However, there is one area where light has had benefits and that is in resetting the biological clock in patients where circadian factors appear to be a significantly contributing factor to insomnia. This is most effectively achieved using light boxes that produce 10,000 lux blue light, use of such light at the correct time can shift sleep to a degree, as set out below.

- **Delayed Sleep Phase Syndrome.** Bright light for 30 to 40 minutes upon awakening; in addition, room light levels should be reduced in the evening.
- **Advanced Sleep Phase Syndrome.** Bright light exposure in the evening will delay sleep onset.

Treatment may take a couple of weeks to be effective but it is likely that continued use of the light box will be required to maintain the benefits.

Judicious use of bright light can also be beneficial in ameliorating the effects of shift work.

NB Light therapy may trigger mania in persons with bipolar disorder, chronic headaches, eye conditions, photosensitivity, or

seizure disorder.

Unfortunately, despite all the hype, sleep technology is still very much at the expensive gimmick level of usefulness.

6
HOW TO SLEEP WELL

It has been said that from a scientific point of view we have learnt more about sleep in the past 60 years than in the previous 6000. But however much we have learnt there is still no magic scientific formula for getting a good night's sleep.

Advice about how to get a good night's sleep is often called ‘sleep hygiene’. This is the name given to a set of ‘rules’ designed to control the environment and behaviours that precede sleep. They were originally developed by Hauri in his *Rules of Sleep Hygiene* published in 1977. Over the years these ‘rules’ have been endlessly copied, modified and added to (see Chapter 10, ‘36 Things You Don't Need to Do to Sleep Better’).

Most of the sleep advice that we give has actually existed for at least 100 years. It is one of my guilty pleasures to see ‘sleep experts’, some of dubious expertise, give sleep advice in such an authoritative tone that you are lead to believe that they themselves have discovered the key to good sleep.

You will all have read that the bedroom temperature should be 16–18°C (61–65 °F). You may believe that this advice is based on some piece of recent research, perhaps conducted by the ‘sleep expert’ themselves. In that case you may be disappointed to find out that in a book published in 1881 the following advice is given ‘The mean temperature of the bedroom should be from 60° to 65° Fahrenheit’. The same is true for pretty much any other pieces of sleep advice that ‘sleep experts’ give (the only exception is the advice about avoiding blue light from screens, however that was predated by the advice to not have screens in the bedroom because they are cognitively arousing).

A lot of sleep advice seems to carry more than a slight whiff of puritanism, ‘do this’, ‘don't do that’; but remember, everything in moderation and a little bit of what you fancy has never one anyone any harm. It's like a variation of the old joke,

A man goes to his doctor and says ‘I want to live longer.’

The doctor advises ‘Give up coffee, tea, chocolate, beer, liquor and smoking. Go to bed early each night and rise early each day.’

‘Will doing all that really help me live longer?’ asks the man.

‘No’ says the doctor ‘but it will feel like it.’

TIPS AND TECHNIQUES THAT MAY HELP YOU GET BETTER SLEEP

There are many causes of poor sleep. Some people's problems are serious enough that they will need the intervention of their GP. But for most people there are things they can do for themselves to improve their sleep. Everyone seemingly wants the ‘Top 10 Tips’ for a good night's sleep as though they believe that there really are 10 magic rules that will help everyone sleep, unfortunately this is not the case. Unless an individual is sick or severely sleep deprived it is not possible to have a period of refreshing sleep totally at will, both the mind and body need to be made ready for sleep. For this there are three general principles.

- **A quiet mind.** ‘All worry and vexatious circumstances should as far as possible be habitually excluded from the mind for a considerable time before the regular hour of retiring.’ J. Leonard Corning, *Brain Rest* (1885).
- **A relaxed body.** ‘Before going to bed, the body ought to be brought into that state which gives us the surest chance of relapsing speedily into sleep.’ Robert Macnish, *The Anatomy of Sleep* (1830).
- **A bedroom conducive to sleep.**

Anything that helps you achieve a quiet mind and relaxed body will help you sleep. Thus, as an individual you need to find your own way to sleep, whatever that may be. Remember the adage; 'one man's relaxation is another man's torture'; what works for someone else may not work for you. When people find out that I am a sleep expert they often want affirmation from me as to whether what they do works, so I often get asked questions like:

Q. Does warm milk help you sleep?

A. If you like the taste and feel more relaxed for having drunk it, YES

Q. Does yoga help you sleep?

A. If you find this quietens the mind and relaxes you, YES

Q. Does thinking of different animals starting with each letter of the alphabet help you sleep?

A. If you find this quietens the mind and relaxes you, YES

Q. Does listening to Pink Floyd help you sleep?

A. If you find this quietens the mind and relaxes you, YES

You should by now see a pattern:

Q. Does XXXX help you sleep?

A. If YOU find this quietens the mind and relaxes you, YES

As you are no doubt aware you can be physically exhausted but still not sleepy because your mind is racing; so while a relaxed body is important, a quiet mind is a prerequisite for sleep.

This is particularly an issue if you start worrying about things when you wake in the middle of the night because problems that seem

insignificant during the day can seem insurmountable in the middle of the night.

So instead of you worrying about those things, think of something else. One solution that I use myself is to think of a story, something of interest, but crucially of no importance. Something that you can think about but that will keep you away from your worries rather than something that will lead you back to them. I fly a lot, so I imagine I have my own private jet and how would I arrange the furniture on it, now this is not exciting and it will never happen so it is of no consequence, it is not something that would occasion worry.

Beyond these three principles, there is some very general guidance that may point you towards what may work best for you.

The first step is to look at your life and lifestyle to see if there are things that may be causing your poor sleep e.g. diet, exercise patterns, sleeping environment, personal habits, lifestyle, stress, and worries of daily living. Keep in mind that good sleep doesn't just happen; you cannot find sleep you have to let sleep find you.

During the Day

The best way to get a good night's sleep is to be awake during the day. Daytime exercise, both physical and mental, can promote good sleep. It is also important to get adequate exposure to natural light during the day, as this is the major signal to the brain that it is time to be awake.

Going to Bed

Go to bed when you are sleepy, not when the TV programme you are watching finishes or when you bed partner wants to go to sleep. Most people's preparation for sleep seems to involve nothing more than turning the TV off, having a pee, brushing their teeth and then getting into bed and expecting to fall asleep, then being surprised that it does not happen. Thus, one of the most important things you can do is to establish a regular relaxing bedtime routine, think of

those lovely examples given in the Introduction. This will signal to the body that it is time for sleep and will allow you to put the stresses and worries of the day behind you. You should spend at least 30 minutes winding down before bed. This means turning the TV/computer off and doing those things that help you quieten the mind and relax your body. So, don't work, don't argue with your partner, don't open the gas bill, and so on. It is important that you don't try to fall asleep, the harder you try the more worked up you will get because you aren't falling asleep, so the less likely you are to actually fall asleep.

During the Night

If you are tossing and turning for more than 30 minutes at the start of the night or 20 minutes during the night it may be helpful to get out of bed, or switch the light on, and do something else, only going back to bed when you feel sleepy again. If you still don't fall asleep again get up, do something else and go back to bed when you are sleepy. Nothing is worse than lying in bed trying to fall asleep and getting ever more frustrated that you can't, you start hating your pillow for being uncomfortable and hating your partner for having the temerity to be peacefully asleep, you know they are only doing this to annoy you. This is not conducive to falling back to sleep.

In the Morning

The body craves regularity, so having a regular wake up time can be a very positive change in terms of improving sleep. This is because the body actually starts preparing to wake up about one and a half hours before you actually awake. Therefore, if your body knows when it is going to wake then it can maximise the sleep opportunity as well as prepare itself to wake up. However, if it does not know when you are going to wake it cannot prepare and thus you are liable to feel groggy when you wake. If you need a bit of assistance in waking in the morning, buy an alarm clock. The vast majority of people these days use their mobile phone as their alarm clock which puts this ‘instrument of sleep disruption’ in easy reach, for you to

check what is going on before sleep and when you wake in the night. However you are awakened, don't hit snooze! Set the alarm for the time you have to get up, and then get up.

Think Guidance, not Commandment

Sleep is a very individual thing and so any sleep advice should be seen merely as guidance that needs personal adaptation – listen to your body. So, whilst the 'rules' says one thing, think about the way your life really is. Some examples are as follows.

Avoid stimulants such as caffeine and alcohol too close to bedtime.

Perhaps the relaxation gained from sipping a fine single malt in front of a roaring fire outweigh the possible negative effects of alcohol on sleep. Or an espresso could be the perfect end to a lovely three-course meal with friends rather than a sleep disturbing potion.

Associate your bed with sleep. It's not a good idea to use your bed to watch TV, listen to the radio, or read.

But if reading or listening to the radio/TV is part of your wind-down then use it as just that. For many, including myself, reading in bed is an essential sleep inducer.

Don't smoke before going to bed – nicotine is a stimulant and will keep you awake.

However, remember that for some people nicotine withdrawal overnight could also disturb sleep.

The smell of lavender may help you sleep.

Or you may, like me, be nauseated by the smell.

THE BEDROOM

When at the University of Surrey, I designed the finest bedrooms ever constructed for good sleep. They were incredibly quiet, temperature controlled, and when you put the lights out they were very, very dark (the other key points were a single bed and a teddy bear!). The construction of the bedrooms was a brick-built outer room, an inner suspended room consisting of 10cms of acoustic foam and 10cms of acoustic tiling which gave a room to room sound attenuation of approximately 85 decibels which essentially meant that the worlds loudest snorer could sleep in the room next door and their snoring would not be loud enough to disturb your sleep. They were designed to be the ideal sleeping environment and are probably everything that your bedroom at home is not.

Sleep Sanctuary

The first important thing to remember is that your bedroom should be the room devoted to sleep. It is the *bed* room, not the office, games room, gym, or cinema – or even your sex dungeon – but the place for sleep. Some languages, such as German 'schlafzimmer' and Dutch 'slaapkamer', make this explicit: it is the 'sleep room'. Therefore, everything about the room should be devoted to the optimising of sleep. But more than that it should be a sanctuary from the stresses and strains of the world, a place where you can feel safe and secure, a retreat from daytime life.

Temperature – Burn Baby Burn

Many experts say that the ideal temperature for the bedroom is 16–18°C (60–65°F), although this is again a matter of personal preference. However, it is not just the room temperature that is important for getting good sleep. The temperature in your direct sleeping environment, i.e. under the duvet, is equally important and should be close to a thermo-neutral temperature (i.e. approximately 29°C). You are just one big fleshy hot water bottle and so you will ordinarily heat the space up to this temperature just by being in bed. During the night the body needs to lose heat and this is done mainly

through the head and face, the only bits that usually stick out from under the duvet, and thus a cool bedroom facilitates this heat loss. However, if the room is too hot or you are too hot under the duvet it is more difficult for the body to lose heat and this will cause disturbed sleep. The same is also true if you are too cold as this means the body has to work hard to maintain its optimal temperature and again this can disturb sleep. Getting the correct temperature involves getting the right combination of air temperature, duvets and bedclothes adjusted to hopefully achieve the right result. If this means you wear bed socks but have the window open, so be it. Achieving the right temperature can be additionally complicated by your bed partner as they will no doubt need a different combination from you in order to achieve their comfortable sleep temperature (hence another reason for separate beds).

Light Levels – Black is Black

The general advice is that the bedroom needs to be as dark as possible during the night. But how dark is dark? If during the night you can stand at one side of your bedroom and see the opposite wall then your bedroom is much too bright. Even small amounts of light, e.g., from your alarm clock, can have an impact on your sleep. Use opaque curtains or blackout blinds to block light from outside. Inside the room, remove or cover light producing devices and remember that clocks with red digits are less disruptive than ones with white or blue digits; so, either replace yours or turn it to face away from you. Of course, we are all different and some people do not mind sleeping in a light bedroom, as long as you sleep well and feel awake and alert during the day, don't worry.

Noise Levels – The Sound of Silence

Your bedroom should be as quiet as possible. It is a simple fact that some noise can disturb sleep, the reason for this is that when you sleep you are vulnerable, seemingly unaware of your surroundings. From an evolutionary point of view this would put you at a

disadvantage (i.e., something big and hairy can find and eat you), so you must be alert to threats even while you are asleep. Because we are deprived of our vision when we are asleep we have to rely on our hearing to give us information about the environment. Each of us wakes up literally hundreds of times during our sleep to check that we are still safe and secure, these arousals are very short, no more than 1–2 seconds, and we are not aware that we are having them. If the brain, via our hearing, does not detect anything of 'importance' then we can safely continue to sleep. However, if we perceive something in the environment that is not right (e.g. an unexpected noise), our 'primitive' brain needs to be sure that this is not a threat, and so we become fully awake to process and rationalise what is going on. However, we do not wake up to each and every noise, the sound must be 'meaningful' (i.e. the brain perceives it as important or a threat) for it to disturb our sleep. This means that we can actually get used to sounds that initially seem very disturbing. This will take at least a couple of weeks as our brain works out that a particular noise is not a threat and it is safe for us to ignore it.

The fact that we can adapt to some sounds in time does not help when we are staying somewhere temporarily, such as on holiday. So in these situations it is probably easiest to just carry some earplugs. Of course, if the sound is loud enough regardless of how meaningful it is, it will wake you up, particularly in the later part of the night when your sleep is naturally lighter and more easily disturbed. Ideally your bedroom should be as quiet as possible but this may not be an easy option. If you cannot create a quiet bedroom then you might want to try using other sounds, e.g. the drone of an electric fan, or a pink noise app, to distract the brain from the more disruptive noises. It really doesn't matter what noise you listen to; the most important thing is that your brain does not have to actively listen to it.

Remove from the bedroom any sources of noise that is at a level that disturbs your sleep (up to and including your partner!). For external noise improved double or even triple glazing may reduce noise levels.

Ventilation – Breathe, Breathe in the Air

The bedroom should not be stuffy, fresh air is good for sleep. Opening the window lowers the levels of carbon dioxide in the air and that has been shown to improve the quality of sleep.

THE BED

Most of us were conceived in bed, were born in bed, will spend approximately 25 years of our life in bed, will consummate our marriage in bed, make our own children in bed and although we don't perhaps want to think about it, hopefully, will die peacefully in bed.

> *I want to die peacefully in my sleep like my grandfather ... not screaming like his passengers.*

If you live till the age of 70 you will spend approximately 220 000 hours asleep and you will probably do this in a bed. Therefore in a lifetime you will spend more time in bed than you will spend in any other one location. So, it is surely important that it is the right bed for you, considering your weight, body shape, height, and medical status. It is unavoidable that you need to invest time in choosing it and money in buying a bed. You wouldn't buy a couch without sitting on it and putting your feet up; you wouldn't buy a car if it was uncomfortable to drive.

When Should You Buy a New Bed?

Regardless of what bed manufactures or retailers tell you about how long a bed should last, you should buy a new bed when you start noticing certain things about the old one.

- You wake up stiff, numb or with aches and pains.
- You do not sleep as well as you did.

- Your mattress feels uncomfortable.
- Your mattress creaks when you move.
- You and your bed partner roll towards the middle of the bed.

Also, remember that each night you sweat a significant amount of moisture and shed a good amount of dead skin into your mattress. So for hygiene reasons it would be good to change your bed regularly. Other good reasons for buying a new bed are if you are moving house or starting a new relationship (you would not ask your new partner to wear your ex's unwashed underwear so why would you ask them to sleep in a bed full of your ex's sweat and dead skin!).

But remember you can buy the best most luxurious, most expensive bed on the planet and it will not guarantee you a good night's sleep. That is rather like a bad driver buying an Aston Martin and expecting to become a good driver. If your lifestyle or bedroom environment is not conducive to good sleep then having a good bed will make little difference.

What Exactly is a Comfortable Bed?

Science cannot measure comfort – essentially bed comfort is a matter of personal choice. Mattresses differ in the comfort and support they provide and so the only way to choose one that is right for you is to go out and lay on as many beds as possible.

The key to the buying a mattress lies in the line of your spine. If a mattress is right for you your spine should be straight when you lie on your side, and maintain a natural curve when you lie on your back. You want to make sure that you are sleeping ‘in’ the bed not ‘on’ the bed. Too hard a mattress stops both the hips and shoulders sinking down into the mattress, too soft a mattress is unable to provide any resistance to the body's weight. Thus, when looking for a mattress, if a bed feels comfortable initially, lie on it for at least 10 minutes, more if possible (this may feel a long time and even somewhat embarrassing, but it is worth it if in the end you get the

right bed for you), and try as many sleeping positions as possible, remember that you naturally move 40–60 times each night, of which 10–20 are major positional changes so you never know what position you are going to find yourself sleeping in.

It is also important to feel what it is like when you try to roll over. It will take a lot of effort if the bed is too soft, and will feel uncomfortable on your hips and shoulders if it is too firm. One other trick for testing the bed is when you are lying on your back, place your hand between your back and the mattress. If this is easy and it feels as if your hand is in a space, then the mattress is too hard. If on the other hand you can hardly get your hand in, then the bed is too soft.

Don't Use Your Eyes When Buying a Bed

People tend to buy a bed with their eyes rather than with their body. They are seduced by a stylish bedstead or a fancy headboard rather than understanding that however beautiful a bed looks it is the feel of the bed when you are laying down that is of the utmost importance. The ‘technical specifications’ of a bed provide little helpful data to allow you to judge the comfort of a bed, for example it is not as simple as saying, more springs = better bed. The price of the bed also has no bearing on the comfort of the bed, more expensive does not necessarily equate to more comfortable (personally I find the most expensive commercially available bed to be pretty uncomfortable).

Although Women Say Otherwise Size Really Does Matter

A standard UK double bed is 4 ft 6 ins wide which means you and your bed partner each have 2 ft 3 ins of space in which to sleep. However, the single bed that your children sleep in is either 2 ft 6 ins or 3 ft wide, which means as an adult you each have actually got either 3 ins or 9 ins less space to sleep in than your child. Your child shares their bed with a ‘glow in the dark’ Teletubby. You however

share your bed with a kicking, punching, farting, snoring, duvet hugger; and you wonder why you are not sleeping well.

One of the easiest ways of getting a better night's sleep therefore is to get a bed that's more than 4 ft 6 ins wide, essentially the minimum size bed that two adults should sleep in is a 6 ft bed, but if for space reasons that is not feasible then as big as you can possibly fit into your bedroom.

Money, Money, Money

You may think that beds are expensive. But if you think of the cost on a per night basis beds are a real bargain, for just £/$/€1 per night over the 10 years that a bed should last means you could spend £/$/€3,650 on a bed! A pound/dollar/euro a night between the two of you seems to be a small price to pay for better sleep. Compare this to the cost of your large latte each day, or how much you spent on your car, watch, smartphone, TV, etc. In the UK, 8% of the population spent less than £100 on their bed, what did they expect to get for that sort of money, really?

The Pillow

The pillow is to your head and neck what the mattress is to your body. Therefore the pillow must work in conjunction with the mattress to provide the correct support. Again, the only way of judging if a pillow will be comfortable for you is to actually try it out on a bed in the same way that you would use it at home.

The Duvet

Having too warm or too cool a duvet will affect the body temperature loss during the night making getting good sleep more difficult. The good thing about the duvet is that, unlike mattresses and pillows, there is a standard, meaningful classification system – the ‘tog’ rating – so regardless of what the duvet is made of, you know that a particular ‘tog’ is designed to provide a particular level of warmth.

Separate Beds

As discussed earlier (see 'Bed Partners' in Chapter 3) your bed partner can be a significant contributor to your poor sleep and so you may consider sleeping in separate beds/bedrooms. Sleep is one of the most selfish things you can do; you cannot share your sleep with anyone.

> *'I could not possibly sleep separately from my husband/wife/boyfriend/girlfriend, which would be the end of our sex life/intimacy/relationship/marriage. I love him/her'.*

There are plenty of 'experts', such as psychotherapists/couples' therapists/relationship experts/people off the TV, who will authoritatively state something along the lines of 'it's not natural to sleep apart and to do so would be the end of your sex life/intimacy/relationship/marriage'. However, the idea of routinely sleeping together lacks any evolutionary, physiological, and historical evidence for being the 'natural' way to sleep. Indeed, it is something that has occurred only comparatively recently and in a small number of cultures/nations. Why does this idea exist to such an extent? Sociologist Rob Meadows describes an instance where 'Sleeping together for Mike is far more important than Jean's lack of sleep (which he is aware can at times makes her ill).' How can anyone think that this is acceptable let alone 'natural'?

It is a Hollywood myth that you fall asleep in each other's arms. In reality, after five minutes of cuddling, you start getting uncomfortable or getting pins and needles and so you say 'right I'm going to sleep now' and then you both move to the opposite sides of the bed and never the twain shall meet!

Humans are in fact the only animals that choose to sleep together for 'intimacy'. Most other animals that sleep together do so merely for warmth and/or security or because of physical proximity. (Adult great apes, our closest cousins, who construct a nest each night and who have been observed to either modify the nest or make an

entirely new one if the nest is not comfortable, do not share a 'bed'). Humans are also the only animals who explicitly choose to have sex where they sleep. In other animals there is no connection between sleep and sex, they are entirely separate activities carried out at different times and different locations. The reason they became linked in the human mind is that at the same time as we started building 'bedrooms' (see 'Sleep and Relationships' in Chapter 2) we were also developing our sense of shame/embarrassment. Because sleep and sex were the two things that we did privately, behind the closed bedroom door, the bedroom became inextricably linked with sleep and sex.

This is borne out by the work of behavioural physiologist Roberto Renfinetti who says there does not appear to be strong evidence for a biological need for sex to take place close to bedtime/wake time. Stating that 'although human adults seem to find opportunities for sex at practically any time of the day, most sexual encounters occur around bedtime (11 p.m. to 1 a.m.). A smaller peak in sexual activity occurs around wake time.' The relationship between the doing of both sleep and sex in bed can also be attributed to environmental factors 'particularly from the work/family schedule of the individuals and from partner availability.' Basically, we have sex in bed, close to bed time because it is the only time that we are together and in private. During the day we are too busy, in too public an environment, or removed from our partner. You have sex at night in bed, simply because you are both there at the time, hardly the most romantic of reasons.

People claim that it is important to sleep together for 'intimacy'. Indeed, in his book *Two in a Bed* Paul Rosenblatt goes so far as to state that 'most people who said they lost sleep because they shared a bed said, in various ways, that despite losing sleep they gained what they thought of as much more precious and essential to life than a good night's sleep, intimacy'. I would argue that the science behind good sleep proves that it is far more 'essential to life' than intimacy. Some have argued that the frequency of sexual activity is reduced when sleeping separately. However, this does not measure

the quality of these ‘encounters’. For instance, Rosenblatt describes a situation where the woman goes to bed to sleep and, some time after, the man goes to bed and wakes his partner up to have sex. Perhaps, not surprisingly, the woman is said to be unhappy with this series of events. Is this sort of ‘encounter’ a sign of a loving, strong relationship? Isn't it nicer for your partner to tiptoe across the landing for a snuggle than to have an arm thrown across you because you are there?

The advice to sleep separately is not for everyone. If you are happy with your sleeping arrangements then there is no reason to change. However, if you are being repeatedly disturbed from your sleep by your bed partner and this is affecting the way you feel during the day then you may want to consider changing to separate beds/bedrooms

Not sleeping together, if it works for you both, is a mature, pragmatic solution to a problem and has no bearing on the strength, or otherwise, of your relationship. Potentially, sleeping separately will mean that you will sleep better and thus feel better and happier and therefore much more in the mood for ‘cuddles’. Surely this is more romantic than having your partner disturb your sleep and thinking ‘you have ruined my night, ruined my day, ruined my life and you still want to have sex’.

Jennifer Adams in her book *Sleeping Apart Not Falling Apart* gives a comprehensive guide to how to manage the decision to sleep in separate beds. In essence, it should be made in an adult, grown-up manner not in a judgemental ‘I can stand this any longer, go to the back/guest/spare room’ way.

If you cannot have separate bedrooms then at least consider having a bigger bed or separate beds. This will only keep you away from your partner's movements but will not allow you to avoid the annoying noises they make. Also, don't compromise on bed times/wake times to fit in with your partner, go to bed when you are sleepy and get up when you want to, compromise just means that there are two miserable people.

As an advocate of separate sleeping I would ask why after the intimacy, the pillow talk, the cuddles, don't you just slip out of bed and go to your own room to sleep if you know that your, or your partner's, sleep is going to be disrupted by remaining in the bed together? You've both enjoyed all the fun parts of bed sharing; now it's time to be sensible.

SLEEP FOODS AND SUPPLEMENTS

Almost all sleep self-help books contain a chapter on foods and supplements that they claim will help you get better sleep, indeed some people have gone so far as to write entire books on the subject. However, the simple fact is that a balanced, varied diet will provide the vast majority of us with all the nutrients that the body needs for sleep and good health. Therefore, as long as you are eating a healthy diet, you do not need to eat anything additional to get better sleep. If you are not eating healthily then the simple fact is you should be!

The neurochemistry and neurobiology of sleep is very complicated and the suggestion that taking any particular chemical, herb or supplement will help you get better sleep is rarely, if ever, supported by any scientific evidence. Thus, any effects that the supplements, etc. may have is probably mainly due to the ‘placebo’ effect. If you are taking something and you feel that it works for you then fine, there is probably little reason to stop taking it. However, it is important to remember that all herbal remedies/supplements, however ‘natural’ may have adverse side effects and can interact with prescription medications, so you should always inform your GP if you are taking herbal medicines or other supplements.

You should also be aware that the actual dose and purity of various supplements, extracts, or teas can vary massively from product to product. Indeed, some products have actually been found to contain none of the active compound.

Hops

The hops are a popular herbal sleeping aid as they are thought to be helpful for insomnia linked to anxiety and stress. I personally feel that hops are best taken in a nice pint of India Pale Ale.

Valerian

This is the most popular herbal therapy for insomnia and there is some research that suggests it can help to reduce anxiety and promote sleep. Several studies indicate that valerian (for up to 4-to-6 weeks) can improve the quality of sleep and slightly reduce the time it takes to fall asleep.

‘Sleep formula’

This is a combination of valerian and other herbs such as hops, lavender, lemon balm. However, there is no reliable evidence that combination products are more effective than valerian alone.

Hot Milk

A study in 1972 showed that a hot, bedtime, milk-cereal drink, Horlicks, improved sleep. Now there is nothing specific about the ingredients of Horlicks or any other hot milky drink that specifically aids sleep. Their effects are probably much more to do with the routine of having a drink each night being both relaxing and a strong signal for your mind and body to expect sleep to occur soon and so to wind-down and prepare for slumber.

HOW TO SLEEP IN THE HEAT

Essentially, to get a good night's sleep you need to lose between 0.5–1^{0}C of body temperature. This is usually mainly lost from the head and face as that is the bit that sticks out of your duvet. The ideal temperature for a bedroom is approximately 16–18^{0}C, which is much cooler than under the duvet and so there is a temperature

gradient allowing you to easily lose the body heat needed. When the bedroom is warmer than this e.g. during hot weather, it is more difficult to lose body heat and this can cause sleep to become fragmented and disturbed.

Some tips to help you sleep in the heat

- Because food and alcohol are very calorific, eating and drinking too much in the hot weather means that the body is also having to burn off these calories making it even more difficult to get a good night's sleep. So, in hot weather reduce the amount of alcohol you drink and avoid having big heavy meals in the evening.
- Keep the curtains/shutters of the bedroom closed during the day if your bedroom faces the sun.
- Sleep under a cotton sheet or wear cotton pyjamas as this will help wick away any moisture so will stop you feeling clammy during the night.
- An air conditioning unit may be able to lower the temperature of the room but the noise that it makes may be just as disturbing of sleep.
- Strange as it may seem, taking a warm shower will actually help you cool down quicker than a cool shower. Having a cool shower does not reduce the core body temperature only the skin temperature and so the body may in fact try to produce more heat to re-warm the skin. Having a warm shower heats the skin thus fooling the body to try and cool down.
- Have a desk fan blowing air across your face, this facilitates heat lose. Even better is if the fan is blowing air across a bag of frozen peas.
- Drink some iced water before bed and have a glass of water next to your bed to drink if you wake in the night.
- Tie cold damp cloths around your wrists or neck.

- Sleep downstairs, remember heat rises.

7
HOW TO GET YOUR CHILD TO SLEEP

In the past we sought wisdom from the wise, i.e. we got what little instruction we needed on how to bring up a child from our mothers or our grandmothers. This has now been replaced by self-appointed ‘experts’, whether in book form or on the internet. Their advice, mostly erroneous and often contradictory, is seemingly causing unnecessary confusion, fear and anxiety in parents. For example, I had a woman write to me recently saying that she had a 5-week-old child and when could she expect it to start sleeping through the night! What false expectation had been engendered in her, and by whom, that she felt it necessary to ask this question?

Remember in the past you came home from school did your homework, watched *Blue Peter*, sat with your parents whilst watching *Nationwide* and then the family programmes, *Top of the Pops*, *Tomorrow's World*, and so on. Then at 9 p.m., if not earlier, the adult programmes, *Panorama*, *World in Action*, etc. started, (it was even called the ‘9 o'clock watershed’ and was the signal that children should be in bed). Once in bed your options were to go to sleep or read under the covers by torch light, we certainly never had a TV in the bedroom.

In the past when you were told ‘it's time for bed’ this meant ‘go to your bed, read and your lights will go out in 20 minutes.’ Now ‘go to bed’ means ‘get out of the adult space because I want to watch the match/soap/reality show without you bothering me; I don't care what you do as long as you keep out of my way.’ The child does not mind as they have plenty to do in their bedroom – a TV, games machine, computer, smartphone. At some point later in the evening you remember that it is probably time for your child to go to sleep so you go to their room and demand they switch the TV/games machine/computer/smartphone off and go to sleep, now! The

problem is that 1) for the last three hours they have been killing zombies, so are cognitively aroused and 2) the blue light from their TV/games machine/computer/smartphone has suppressed their natural releases of melatonin and so, however hard they try, they will not easily be able to fall asleep.

One of the main problems with the pre-sleep activities of modern children such as TV, games machines/internet use is they are unstructured activities i.e. they do not have a clearly defined end point. Research has shown that a more structured pre-bed routine is better for inducing sleep. Parents may mistakenly think that a child will take the sleep they need, but children do not have sufficient self-awareness to know when they should settle to sleep or to resist the temptation of all the competing activities and pastimes, so this is why parental guidance in imposing a routine is necessary.

A worrying modern trend is competitive parenting. Bringing up a child is not a competition and your child is not better or more intelligent just because they have developed the habit of sleeping through the night. To try to make a child sleep through the night or to ‘sleep train’ your child in order to somehow demonstrate its superiority to other children is both misguided and wrong.

HOW TO GET YOUR CHILD TO SLEEP

- Teach them the difference between day and night: daytime is light, noisy, interactive; night time is dark, quiet, and dull.
- Bedtime routines are important, regardless of a child's age. It should include about 15–30 minutes of calm, soothing activities with a definite endpoint. Discourage television, exercise, computer and telephone use, and avoid drinks containing caffeine. For babies and younger children, it really is quite depressingly simple: bath, story/lullaby, lights out, sleep.
- Help children avoid an overloaded schedule, identify and prioritise activities that allow for relaxation and sufficient sleep

time.

- Remember, even the best sleepers will have periods of time when they do not sleep well.
- We are all different and so if your child is happy, healthy and well behaved on less than the recommended hours, don't worry. If they are tired, crabby and prone to temper tantrums then however much sleep they are getting it is probably not sufficient.
- The key is to do what is right for you, your partner, and most importantly your child – not what your friends, neighbours, mother-in-law, sleep experts or self-help parenting books tell you.

IS CO-SLEEPING WITH MY CHILD WRONG?

For most of human history the accepted norm was for mothers to sleep with their babies. This is still true in the majority of cultures in the world including countries such as Japan and India. By sleeping next to its mother, an infant receives protection, warmth, emotional reassurance, and is easily fed. However, recently, in Western societies, the practice of mothers and infants sleeping together has been actively discouraged. Western parents are taught that they should not co-sleep with their child for two reasons.

1. It will make the infant too dependent on them.
2. It increases the risk of accidental suffocation or sudden infant death syndrome (SIDS).

With regards to the child becoming too dependent on their mother, studies actually suggest that children who have ‘co-slept’ in a loving and safe environment become better adjusted adults than those who were encouraged to sleep without parental contact or reassurance.

The fear of suffocating infants has a long history. However, since before the Middle Ages ‘overlying’ or suffocating infants

deliberately was considered the problem and it was for this reason – infanticide – that the Church forbade parents sleeping next to their infants. Later, the practice of giving infants alcohol or opiates to get them to sleep became common, and this could cause babies to die during the night. There was also a problem with children sleeping in smoke-filled, unventilated rooms, which could give rise to asphyxia.

Thankfully these conditions to a large extent no longer exist. However, health officials in some Western countries now promote the message that sleep contact between the mother and infant increases the chances of the infant dying from sudden infant death syndrome (SIDS). But the research on which this message is based only indicates that bed-sharing can be dangerous when it occurs in the context of extreme poverty or in situations with multiple risk factors: parental obesity, parental drug/alcohol use, prone sleep position, sleep surfaces such as a couch or waterbed or pillow, tobacco exposure, co-sleeping with other children, maternal exhaustion, or leaving baby unattended on an adult bed. It should be noted that Japan where there is still a high rate of mother/baby co-sleeping actually has the lowest rate of SIDS in the industrialised world.

Despite a myriad of advice to the contrary infant-parent co-sleeping, especially with night-time breast feeding, is inherently safe, protective, and beneficial. It would appear to be ‘where’ and ‘by whom’ the co-sleeping takes place that is the risk factor not the act itself. It seems that the custom of separating infants from their parents during sleep time is more the result of cultural history than biological or emotional need. If one were cynical, one might suggest that the modern advice against mother/baby co-sleeping is in part designed to preserve the hegemony of adult co-sleeping rather than for any fundamental physiological or psychological reasons (see ‘Bed Partners’ in Chapter 3).

If you are obese, an alcoholic, a smoker, and sleeping anywhere other than in a bed you should avoid co-sleeping. Anyone else should do what is best for them and their child.

8
BUSINESSES AND SLEEP

Some companies have been lauded recently for providing nap pods, which may on the face of it seem like a good thing. But a few things come to mind: if employee sleepiness is such a problem why do the companies only provide a few nap pods for a workforce of many thousands? Why are their employees sleepy in the first place? Why is it only the HQ staff that have this benefit? Isn't this just a cynical ploy to keep the people in the office for longer?

One company has received glowing reports for allowing people to come in late if they are sleepy (do they also offer aspirin for when you turn up hungover?). But again why are their employees sleepy? And does the same rule apply to the people working long days in the Asian sweatshops making their products?

Another company 'pays' their staff to sleep well (actually not to sleep well, but merely to register below threshold movement on a sleep tracker for seven hours a night). But, according to a report, this is far less impressive than it sounds because for every 20 days an employee reports sleeping at least seven hours, he or she can earn $25, up to a maximum of $300 in total (which would require 240 nights of good sleep per year). On this basis the company 'values' good sleep for their employees at $1.25 a night. Remember the economic cost of poor sleep to a business has been estimated to be approximately $3000 per individual, so essentially the company is willing to 'pay' their employees a tenth of the benefit they themselves would possible get. Now doesn't that make you feel valued? Also, given the inaccuracy of the fitness trackers and their night to night variability, it is quite likely that an employee may not be able to reach this target anyway however well they slept (see 'Sleep Technology is the Future' in Chapter 5).

These are not fatigue management strategies, merely a good way to get positive PR to make them appear a caring company. In my view they are window-dressing rather than an honest attempt to help the work/life balance.

One good way for companies to actually make a difference to their employee's sleep is allow them to only work for the hours which they are paid. If you only pay your employees for eight hours, why do you expect them to more work more than this, for free? If an employee puts in an extra hour, once in a while, say thank you and buy them a doughnut. If they are consistently working more than an hour extra then pay them for this time (giving them time off in lieu would just be a con, if they are working so hard, you know they are not going to ever be able to take it). However, if this is happening it is probable that it is not one person in your business working extra hours so, perhaps you should hire another member of staff. The unspoken threat that your employee needs to do unpaid extra hours if they want to keep their jobs may have been partially true during the recession but now it is merely profit-grabbing exploitation.

Technology has vastly increased the rapidity of information transfer but has done nothing to increase the rapidity of human response. In the days before emails, it would take time to write a letter, a couple of days for it to arrive, a day or so for the recipient to read, consider, and compose their response, and then another few days for the response to make it back to you. Now, if you haven't responded to an email within a few minutes, people send a follow-up mail or ring you to find out where you are. All technology has seemingly done in this regard is allow us to make ill-thought-out responses, really quickly and with increased stress. Now we can never go back to the 'good old days,' but at least we can become less demanding and allow people the time to give their considered response.

It is also important that there is a company policy that states that (unless it is a dire emergency) we do not communicate with each other outside agreed times, e.g. you cannot be contacted about work more than an hour before or after your shift.

We evolved to be productive in the daylight and asleep in darkness, so our bodies and brains are designed to function in natural daylight. Recently, with advances in lighting technology, it has become possible to programme lighting systems to mimic the changes in natural daylight across the working day in an attempt to boost the productivity, alertness, and happiness of the workforce (we all know how attractive the desk is by the window). Human centric lighting is a feature of some of the most productive and creative companies. So, in theory, the installation of such lighting into a business is a laudable aim. However, we are all different, as are our circadian rhythms, and with the ubiquity of open-plan offices any lighting programme is going affect each of us differently, and perhaps not optimally. Individually programmable lighting would be an ideal solution but that would mean a return to the good old days where everyone had an office of their own, with walls and a door (I know it is hard for you to imagine that such a utopia used to exist).

However, while long hours, shift work and the unspoken threat of losing your job means that business can negatively affect your sleep it is in some situations not as easy as it seems to remedy the problem. Consider the following scenario.

Company A is a delivery firm that, for operational reasons, often needs to make early morning deliveries to its clients. This necessitates its drivers getting up at 2 a.m. in order to drive to the depot to pick up the delivery truck, which means that the drivers are driving both their own cars and the company truck between 2 a.m. and 7 a.m., the period when it is most likely they will have a road traffic accident. It is thus obvious that from a health and safety perspective the drivers are at an identifiable, increased risk of an accident and thus they should not be permitted to drive at that time. However, while scientifically valid such a decision may be unattractive to the company.

If there are operational reasons, such as the prohibition of delivery trucks overnight in city centres, as to why the client asks for the

early morning delivery, what can Company A do to resolve the situation?

If Company A stops its drivers driving in the early morning, their customer is liable to find a company that is neither as health and safety aware, nor conscientious about their workforce, and give the contract to them instead.

Company A could decide to double crew the truck for the delivery so one driver could do one leg of the journey while the other one rests and they swap over for the return leg. This would appear to be a good decision until you realise that this would necessitate both drivers driving to the depot in the early morning. Also, such a system would increase the costs to Company A which would either reduce their profits or increase their prices, thus reducing their competitiveness.

If you ask any health and safety person they will say that 'you cannot put a price on safety'. However, a company's board of directors probably do not feel the same way and so are essentially willing to play Russian roulette every time they allow their drivers to drive while sleepy, hoping that the accident, when it occurs, is not so catastrophic that it loses them their jobs and/or crashes the share price.

Nonetheless, there are things that the company can do to encourage employees to take more responsibility for their own sleep. Yes, I know your boss is a person for whom there is legitimate doubt as to the marital status of his/her parents at the time of their birth; and I fully understand that the company you work for is a soulless corporation, lacking any semblance of human compassion, designed simply to grind down and exploit the working person. However, with that said you do have a responsibility to turn up fit for work, and that includes having had sufficient sleep to correctly and efficiently perform your role. To do otherwise means that you become a health and safety liability. In the same way you would not turn up to work drunk you should not turn up to work sleepy. You should certainly not expect your boss to provide a 'nap-pod', or for

that matter any sympathy, for you to recover from your marathon binge-watch of the latest ‘must-see’ box set or whatever else you were doing.

If you are an eight-hour-a-night person getting the following hours of sleep per night is equivalent to consuming a number of 500ml beers

- 6 h sleep ≈ 2 beers
- 4 h sleep ≈ 4 beers
- 2 h sleep ≈ 5 beers
- 0 h sleep ≈ 7 beers

Turning up to work under the influence of alcohol would be a disciplinary offence in most workplaces and yet people turn up to work sleepy, even though the impairment of their performance is the same.

HOW TO MAKE SHIFT WORK TOLERABLE

The heading for this section comes from the title of a book from a few years ago by two leading shift work researchers. Shift work can only ever be made ‘tolerable’, it is never going to be able to be made good. But it can be made better. A more enlightened approach to shift work will almost certainly save the company money, making it more productive and competitive.

Scheduling shift work needs to, as far as possible, eliminate or minimise the risk to health and safety. Most experts agree that a forward shift rotation should be used (i.e. mornings, then evenings, then nights) to minimise individual adaptation problems. However, there is an argument about the ideal length of the rotation period (the number of days on any one shift before switching to the next shift). A common shift system has a rotation period of one week, with five to seven consecutive night shifts. However, from a chronobiological view this is probably the least ideal system, as it is

known to take at least seven days for adjustment of the circadian rhythms. It is argued, therefore, that just as adjustment starts to occur, it is time to rotate to the next shift. For this reason, some researchers believe a longer shift rotation – with two weeks to one month on the same shift – would be beneficial as that would allow sufficient time for the circadian rhythms to adjust. However, problems may occur if the worker reverts to a 'normal' day/night schedule on their days off, thus, negating any adaptation. Others suggest a rapid shift rotation where different shifts are worked every two to three days. It is argued that this system may reduce disruption to body rhythms because the readjustment of circadian rhythms is minimised.

Some people advocate extended work days of ten or twelve hours, this has the advantage of fewer consecutive night shifts and longer blocks of time off. However, the additional fatigue from long work hours may also have adverse effects.

Lighting that mimics daylight can provide benefits in terms of alertness and vigilance; in many industries light levels are reduced at night making it even harder for the workers to focus on their tasks, or even stay awake.

In most organisations, shift patterns are developed by middle-management people who work 9 to 5 and who have little if any understanding of human factors. The CEO and management of a company is even further removed from the reality of round-the-clock operations. The last time, if ever, they were on the shop floor in the middle of the night was so long ago they don't even remember what it was like. Workers should be involved in the development of rosters as a key part of risk control, as schedules and workloads will impact on individuals differently. It is important to make sure that this input is candid; so confidential surveys, anonymous feedback or risk-free focus groups are a crucial mechanism to gain valuable information as regards what really happens in an organisation in the middle of the night.

For employees it is important that they find a job that suits their own individual physiology in terms of morningness/eveningness. Early morning types would be unwise to take a job that forces them to stay up late, owls shouldn't become milkmen. Because some people may be more suited scheduling at specific periods in a shift cycle, it would be beneficial to measure an employee's morningness/eveningness and, where possible, assign them hours that are in harmony with their chronotype. These characteristics may not be as important as broader work/life balance issues but reinforce the need for active staff involvement in work scheduling. I know of a night sister in hospital who loved working nights as, for whatever reason, it suited her life. However, she was told that she would have to start working days because she was 'deskilling' by just working nights. This is simple stupidity. Her skills were as a night sister who was willing and able to cope with night shift. There was no 'deskilling'. Rather, her skill set was perfectly suited to this important role. Why muck up her life and the life of her replacement, who may not be as happy, or capable of, working nights?

It is also important to remember that our ability to work shifts changes as we get older, in your twenties and thirties you may adapt relatively easily to rotating shifts while this may become increasingly problematic in your forties.

Ideally, workplaces should also provide the following.

- Rest areas in which workers can take short breaks from duty: these should be proportionate to the number of staff working, and the timing of breaks should be scheduled.
- Healthy food. In too many workplaces only junk food is available to the workers working overnight, even though day workers have access to fresh nutritious food. Therefore, access to suitable catering facilities is essential, providing nutritional food and beverages consistent with diet guidelines that maximise the ability to work shifts and extended hours.

- Access to counselling services to assist in any issues arising from the disruption to individual, family, or social patterns caused by shifts or extended hours.
- Access to advice on sleep, diet, and physical fitness.

Many shift workers rely on caffeinated beverages to stay awake during the night but this could actually be making matters worse if the caffeine subsequently disturbs their sleep. They should avoid caffeinated beverages at least five hours before their intended bed time. The use of caffeine by workers doing the evening shift is also problematical as they will be going to sleep just a few hours after their shift finishes and the short-term benefits of the caffeine improving alertness will be more than offset by poorer subsequent sleep

Shift workers should also avoid the use of alcohol to 'help them get to sleep' as getting to sleep is usually not the problem, it is getting good quality sleep and staying asleep that is the issue in night workers and alcohol is going to make the problem worse.

It is an unfortunate truism that society places less value on protecting the day sleep of night workers than it does protecting the night sleep of the majority. It is impossible to make society care about your sleep but you can get you family and friends to respect you daily sleep opportunity.

Shifts should be structured with strategically placed rest and meal breaks. Shift workers should avoid the situation in which long, unbroken periods of work stretch in front of them, particularly in the early morning when alertness and vigilance are at their lowest. Ideally it should be possible for them to take short breaks every couple of hours; to walk around, get something to eat and drink or visit the bathroom.

Unless the shift worker is on a rapidly rotating shift pattern it is probably best for them to avoid napping during the 'lunch break' of a night shift 1) because it will confuse the circadian system in believing that it is still OK to sleep at night and 2) they will probably

experience sleep inertia, that feeling of grogginess that people have after being awoken from a short sleep. Studies have found that sleep inertia is particularly severe at 4 a.m., so a nap at this time may actually reduce safety.

A simple rule for shift work is that a correctly set body clock is the single most important factor in ensuring good sleep and fewer negative effects. Thus, within the limits of what is possible given their work and domestic routines, shift workers should be highly regular in their sleeping patterns and should consciously avoid ‘snacking’ on sleep whereby they grab it wherever and whenever they can. The process of taking naps should only be regarded as an emergency catching-up process, coping with acute sleep decrements as they occur, rather than as an integral part of the shift worker’s overall sleep strategy. The only exception to this might be an afternoon or evening nap before the first night shift.

If you work shifts, particularly night shifts, try to use public transport, if at all possible. Driving home after working a night shift significantly increases you risk of an accident.

9
WHY YOU SHOULD ACTUALLY BE ABLE TO SLEEP IN HOTELS

I spend much of my time travelling, lecturing about the importance of sleep, this inevitably means that I spend many nights staying in hotels. To me the most important part of a hotel is the ability to get a good night's sleep. I am only sleeping there because I cannot get home and sleep in my own bed. You would therefore think that hotels would do as much as they could to provide their weary travellers with a peaceful, relaxing, comfortable place to sleep. Some hotels give the impression that they want to help you sleep, for instance giving you a small vial of lavender spray for your pillows. Other hotels have put a big topper on an otherwise pretty awful mattress to give you an initial sensation of comfort, others offer a pillow ‘menu’ (if they were serious about good sleep wouldn't it be better to offer a mattress menu?). However, in general, many hotels seem to spend much more on their TVs than on the mattress/bed, and it is certainly true that some chain hotels spend less on the mattress than you are spending on your stay with them.

While it is obvious that a hotel in a noisy location may have problems with external noise that could disturb your sleep, a less obvious problem of hotel rooms is the noise generated within the room, from air-conditioning and the mini-bar, as well as due to poor sound insulation between rooms. If I book my hotels I have a preference for staying in one of the budget chains, specifically because they lack potential sleep disturbers, such as air-conditioning, mini-bars, discos and the fact that their TVs are so weedy you never hear what the person in the next room is watching. They also inform you when you are booking a hotel if there is a problem with noise from traffic or nearby bars and clubs, OK the

beds aren't the best but at least I stand a chance of getting some sleep.

A hotel that provides good quality beds would be a good place to start. The National Sleep Foundation did a survey concerning the bedroom environment and they questioned the survey panel on several aspects of their sleep experience and whether these were better in their own bedroom, at a quality hotel room, or equal at both. They found that in the majority of cases the panel members found their own bedroom was better than that of the hotel, specifically in the following areas.

- Comfortable pillows (62%)
- Quiet room (59%)
- Comfortable feel of sheets and bedding (56%)
- Comfortable mattress (55%)
- Fresh air, free of allergens (50%)

So, it seems that hotels cannot get the basics right for a good sleep more than half the time. The whole reason for sleeping in a hotel is that you cannot, for whatever reason, sleep in your own bed; so surely the comfort of the room from the perspective of sleep should be the very *raison d'être* of the hotel. Perhaps it is time for hotels to remember that they are first and foremost a place to sleep and so maybe they should devote their energies to providing a nice, comfortable, quiet place to sleep and realise that the spa/restaurant/nightclub/bar/TV/rainfall shower/bath in the bedroom are very much secondary. Here, then, is my advice to hotels.

- Spend more on the mattress than you spend on any other item in the bedroom.
- Do not have guest rooms that can be disturbed by the hotel disco, bar, etc.

- Make sure you warn potential guest of problems with noise from roads, railways, airports, nightclubs, discos, pubs in the neighbourhood.
- Have proper sound attenuation room to room, corridor to room, and outside to room (doors to connecting rooms are particularly useless in attenuating noise).
- Make sure the heating doesn't ‘knock’.
- Make sure you cannot hear the guest in the other rooms flushing their toilet or having a shower.
- Make sure you install silent mini-bars.
- Don't put guest rooms next to – or opposite – the lifts, nor next to the lift machine rooms.
- Don't install sources of bright lights, e.g. clocks on TVs, docking stations, etc.
- Install blackout curtains that actually ‘black out’.
- Make sure the temperature is easily controlled.
- Don't have rooms that overlook machinery, ducts, vents, etc.
- Don't put waterproof mattress protectors on your beds.
- Make sure it is possible to get fresh air in the room.

HOW TO SLEEP IN A HOTEL

Many years ago, scientists identified a phenomenon they termed the ‘First Night Effect’ which essentially means that sleep will be disturbed on the first night sleeping in a new place. This is because our brain is monitoring the environment for anything that it perceives as a threat – from the constant hum of the air conditioning, the permanent light of the TV, to random traffic noise, and the glow of street lights. The first night effect means that your sleep will be disturbed however ‘ideal’ the bedroom.

A hotel with a comfortable sleeping environment – with fabulous mattresses, pillow menus, quality linen and adjustable air conditioning – can help us physically relax. But to get the best night sleep, hotel guests also need to be able to relax their minds.

Your hotel room should be a sanctuary reserved for sleep. Make the most of the facilities: eat in the restaurant, do any work in quiet spaces or lounge areas, socialise with colleagues or friends at the bar, and only head to your bedroom when you are sleepy and ready for bed.

Make the room temperature right for sleeping, one of the real problems with hotels is the inability to get the right temperature. Bedrooms are either too hot because the heating has been running constantly, or too cold because the hotel doesn't heat the room prior to you checking in. Another problem is those rooms where the power goes off the minute you remove the key card meaning it is impossible to run the air con to achieve the correct temperature. The ideal temperature should be around 16–18°C (60–65°F), so, if you can, adjust the air conditioning when you check in to your room. If you can open a window that's ideal but external noise is often a real problem in hotels.

Reducing noise can really help, although many hotel appliances can't be unplugged. To reduce noise in the room try using a pink noise app which can help mask sounds, or use earplugs.

Light is a signal to our body that it's time to get up so it's important to sleep in as dark a room as possible. If that means putting the room menu card in front of the standby light on your TV to prevent it blinking at you all night, then do it (for wall mounted TVs a tie or towel may be necessary). Or pack an eye mask. Many hotels have blackout blinds and curtains so use them, although often they are badly fitted and do not achieve darkness.

Try to replicate you normal evening routine, it is far too easy when in a hotel to just have a pee, brush your teeth and get in the bed and watch some rubbish on TV. Take time to get unstressed for bed and

relax. Have a bath/shower, read a book, listen to music. Jot anything down that you are worried about, or want to remember for the next day, on that pad by the phone (you have always wondered why they provide one).

And finally, why is it when people stay in hotels they turn into such inconsiderate people (the offspring of unmarried parents)? They walk the corridors, at all times of the night, talking – even shouting – with no thought for others who may be sleeping, even though every single room on that corridor is a bedroom! Don't be one of these people.

10
36 THINGS YOU DON'T NEED TO DO TO SLEEP BETTER

There really is a load of daft advice out there. One of my favourite examples starts so well and then descends in to the most utterly ridiculous nonsense:

> '**Make your bedroom quiet, dark, and a little bit cool.** *An easy way to remember this: it should remind you of a cave. While this may not sound romantic, it seems to work for bats. Bats are champion sleepers. They get about 16 hours of sleep each day. Maybe it's because they sleep in dark, cool caves.'*

DO I NEED 'PROFESSIONAL' HELP?

Well that depends on your idea of 'professional'. The sad fact is that anyone can call themselves a 'sleep expert'. But for some so-called experts it is difficult to find much evidence of their relevant experience, training, or expertise in sleep, whatever they claim. Here are some things that in my opinion do not necessarily make you a 'sleep expert'.

- Calling yourself a 'sleep expert'.
- Being quoted by the media about sleep.
- Being called a 'sleep expert' by the media (even if they call you 'Britain's leading sleep expert').
- Calling yourself a 'sleep therapist', 'sleep practitioner', etc.
- Having a qualification in neuro-linguistic programming.
- Being a hypnotherapist.

- Being a psychologist.
- Having a qualification in cognitive behavioural therapy.
- Being a mindfulness practitioner.
- Having attended a 1/2/5-day introduction to sleep course, even if it gives you a pretty certificate. (I have been in the sleep field for over 36 years and am still learning and don't have a certificate.)
- Presenting a TV programme about sleep. (Just because someone can read a script convincingly, takes direction, and looks good on TV does not necessarily make them an expert of any sort.)
- Writing a book about sleep. (Most sleep self-help books are written by non-experts.)
- Writing a ‘sleep app’.
- Having the word ‘sleep’ in your Twitter/Facebook/website, etc. name.
- Working for a bed manufacturer.
- Selling beds.
- Working for a PR company.
- Writing a blog about sleep.

Ask yourself

- Would you want to be treated by a doctor who only had less than a week's training?
- Would you trust a psychiatrist who only had less than a week's training?
- Would you trust your cat to a vet who only had less than a week's training?

So why would you trust your sleep, or the sleep of your child for that matter, to someone who has had less than a week's training, if that?

You can become ‘sleep practitioner’ merely by attending a three-day training course. Worryingly although this training is usually focused on children's sleep many of these ‘experts’ feel that this then somehow qualifies them to deal with adult sleep problems as well.

To become ‘certified’ in sleep you simply need to pay approximately $200 to someone willing to issue you with a certificate and answer a 60 multi-choice questions. Don't worry, you get three attempts to pass it and it is unsupervised. (NB the title ‘certified sleep educator', however, is legitimate.) It should be clear to anyone, other than the deluded souls who use these titles, that this is in no way sufficient to get even a superficial understanding of the complexity of sleep, let alone give you the knowledge and experience to correctly advise people.

Amazingly, some people call themselves ‘sleep experts’ merely because they have had a couple of children, have read a few sleep self-help books, and claim to possess some sort of ‘special gift’.

My advice is to choose your ‘sleep expert’ wisely.

DO I HAVE TO BUY THE LATEST SLEEP BOOK?

Dedicated sleep self-help books have a long history, the oldest one in my collection was published in 1880, although some of the advice still given in modern sleep books goes back at least 400 years. What is interesting is that the basic advice has not really changed very much over the years. Many sleep self-help books are written by people with little or no expertise in sleep, usually health journalists or freelance writers, and therefore they are pretty generic as they inevitably draw from the same source material. Therefore, in order to differentiate their book from all the others, the authors start to give their own advice which has led to a lot of unscientific nonsense being presented as sleep advice to the unwary reader.

One recent sleep book started by saying that if you ask a good sleeper how they get to sleep they will say ‘nothing’. The book then goes on for another 200 pages telling you why you have to follow the author's way of doing ‘nothing’. Sleep books are getting a bit like diet books where every author has their own ‘path’ to good sleep. Like diet books there will be another one along in a few weeks that claims to be the new sure-fire way to get better sleep, just like the last one.

My advice is if you have to buy a book by someone then at least make sure they are a bone fide sleep expert. Even so, books by actual sleep experts can suffer from a few gimmicks such as the ‘author's journey’ and their desire to save the lives of millions. You might get some interesting but not especially relevant ‘science’ to show just how ‘clever’ the author is and how key their research is in the story of sleep, or perhaps some ‘end of the world is nigh’ scaremongering (the gimmick of the book you are holding in your hands is that there is no gimmick).

DO I HAVE TO EAT A BANANA BEFORE BED?

It is claimed that you should eat a banana before bed because it is a source of the amino acid tryptophan and may thus help you sleep. Now, aside from the fact that there is little, if any, scientific evidence that dietary tryptophan directly helps sleep, who wants to eat a banana just before bed? They could just as easily have recommended turkey sandwich, or indeed any other food that contains protein.

DO I REALLY NEED TO STOP DRINKING COFFEE AT NOON?

Coffee contains caffeine, a stimulant, whose effects, in some people, can last for a number of hours. It is true that research has shown

that one cup of coffee can lead to problems in getting to sleep and affect sleep quality. However, like alcohol some people are more sensitive to caffeine than others. If you are particularly sensitive you should avoid caffeine for a number of hours before bedtime (I cannot tell you how many hours that is down to you as an individual). But don't panic, if you have had a lovely three-course meal with friends and a few glasses of wine, then why not round off the evening with a nice cup of coffee? The big meal and the drinks are probably going to disturb your sleep, so one coffee is not really going to make much difference. If you have been drinking two double expressos every evening for the last 40 years without any problem sleeping and you have only now developed a sleep problem it is almost certain that coffee is not the cause of the problem and giving it up will not be part of the solution.

WHAT ABOUT A NICE CUP OF TEA?

The way most people make a cup of tea, waving a tea bag somewhere close to a cup of boiling water for a few seconds, means there is only a small amount of caffeine in the average cup of tea. Drinking the amount needed to get an effect of caffeine would be enough to cause numerous bathroom visits during the night.

DON'T TAKE MY CHOCOLATE AWAY FROM ME

Many killjoy ‘experts’ caution that chocolate contains caffeine and so should be avoided. However, the levels of caffeine are really quite low – for instance 1 oz of milk chocolate contains about 6 mg of caffeine. This means that to get the same amount of caffeine from milk chocolate as you would do from a cup of ground coffee you would have to eat over a pound of chocolate (0.5 kilo). I do not think it would be physically possible to eat the amount of white chocolate needed to get any sort of caffeine effect (1 oz of white chocolate contains less than 2 mg of caffeine). Only dark chocolate

contains any appreciable amount, (1 oz = about 20 mg of caffeine) but still you would have to eat approximately 150 g to get the same amount as a cup of ground coffee (about a bar and a half). So that ‘wafer-thin mint, for monsieur’ really is not going to trouble your sleep.

MUST I AVOID SPICY FOODS 4–6 HOURS BEFORE BEDTIME?

The rationale behind this piece of advice is that spicy food will affect your ability to stay asleep. This ignores the fact that at least three quarters of the world's population eat a diet that by western European/American palates would be considered ‘spicy’. Does that mean that no one in countries like India is able to sleep well? The advice should be to avoid eating foods known to upset your stomach or are too spicy for you, for example if you are used to eating nothing spicier than ‘mac n cheese’ it would probably be unwise to have a Naga Gosht at any time, let alone before bed.

AM I A BEAR, LION, WOLF OR DOLPHIN?

Look in a mirror, what do you see? That's right, a human. Not a bear, lion, wolf or dolphin. ‘Lark’ and ‘owl’ have some relevance to what they are trying to denote but these other animal terms are just plain silly and have nothing to do with ‘chronotypes’. Most bears hibernate, something that humans cannot do. Lions and wolves are essentially just big cats and dogs, and their sleep patterns as anyone who has ever owned either a cat or a dog are vastly different than that of the average human. Dolphins sleep hemi-spherically, one side of the brain at a time, again a skill that humans have yet to evolve. So be a human!

SHOULD I BUY A ‘BED IN A BOX’

The first question you should ask yourself is, when has a cheap, ‘one size fits all’ product ever been the answer to a problem? There are many claims about how the new bed producers are ‘disrupting’ the bed industry, but really what they have done if to convince us that their cheap, ‘one size fits all’ product is worthwhile. They have done this by spending loads of money on advertising and assiduously courting the media; and so somehow they have convinced people that it is so very difficult to go to a bed showroom, choose a bed, and then get it delivered to your house.

‘But the salesmen are on commission’ they cry. But aren't they in most other types of stores?

‘It's embarrassing trying beds’ they claim. Really? Are you embarrassed trying out a couch? You do realise that it is only laying down, fully clothed; just how is that embarrassing?

‘The salesman intimidates me with his knowledge’ they protest. But isn't that actually a good thing? You know, advice from an expert, about something you know little about? You would happily seek the advice of the salesman if you were buying a high-end hi-fi or a car; so why not a bed? And don't Apple have the genius bar? (And no, the ‘genius’ bit does not refer to you.)

So, what is the benefit of the ‘bed-in-the box’ other than it saves you the hassle of buying the correct bed for you and it is delivered in a box? Now, some of brands have introduced a second model. But because you cannot try them how do you choose between them? And if the whole *raison d'etre* is the idea of ‘one size fits all’, are they admitting that it, in fact, doesn't? And what is so convenient about the fact that the bed is delivered to your door in a relatively small box, compare to delivered to your door by a delivery man in a relatively bigger box? But at least you won't feel embarrassed choosing a bed in the box, not even when you have to ring up to return it when you realise that it is not for you (return rates on these mattresses are much higher than beds sold in bricks-and-mortar shops, perhaps the reason why a number of the brands,

despite all the hype about disrupting the market, are actually putting their beds into traditional retail outlets).

SHOULD I TAKE MELATONIN?

Well, in my opinion, no. Melatonin is a hormone that is secreted at night by the pineal gland in the brain; it acts as a messenger that sets off a cascade of events that induce and maintain sleep. In the UK melatonin is used as a short-term treatment for insomnia for patients over the age of 55 and is only available on prescription from a GP. However, melatonin supplements are widely promoted as sleep aids, but there's little scientific evidence that melatonin improves sleep patterns and its long-term safety is unclear. People believe melatonin must be safe because you can buy it in over the counter in America, but there again you can buy guns over the counter in America; it does not mean they are safe, it means that the law is different. Because they are not regulated in any way it has been found that many melatonin products, particularly those available online, contain little if any active compound.

One particularly worrying recent trend is the prescription of melatonin to children. While it is true that melatonin has been shown to be beneficial for children with autism there is little medical justification for giving it to non-autistic children with problems sleeping. Doctors, particularly psychiatrists, may believe it is safe, and evidence for short-term studies supports this idea. However, we currently do not know for sure what effects taking melatonin can have on a child's developmental processes or its safety in the longer term.

But What About Foods that Boost Melatonin Levels?

Any food that contains protein will provide the body with the building blocks needed for the production of melatonin, so you do not have to eat anything specific to help you sleep. Although many people advise eating food high in tryptophan there is actually very

little credible scientific data showing that dietary tryptophan has any direct effect on levels of melatonin, or any beneficial effects in normal sleepers.

DOES IT MATTER WHAT POSITION I SLEEP IN?

No, you fall asleep in the most comfortable position for you, move numerous times in the night into other positions which, if you do not awake, you have no knowledge of, and then wake up in either the same position you fell asleep in or an entirely different one. Regardless of what some people might say there is no such thing as a ‘side sleeper’ or a ‘back sleeper’. The position you fall asleep in is simply the most comfortable position for you to lay in when you are conscious. Once you are asleep you are unaware of these bodily sensations and therefore you can adopt a myriad of positions. Changes in position during the night are not an indication of disturbed sleep, but are your body's way of naturally relieving pressure. You also change position in the night in order to help regulate your temperature, by moving to a cooler area (this is also why ‘flipping’ your pillow helps you fall asleep).

Temperature is also a factor in determining the position you actually sleep in. When it is cold you adopt the foetal position in order to conserve heat and because it is too cold at the bottom of the bed for your feet; when it is warm you stretch out in order to maximise surface area to aid the loss of heat (anyone who has ever owned a cat will have observed the different sleeping positions it adopts in different situations).

I'LL SLEEP WHEN I AM DEAD

The witty retort to this would be something along the lines of ‘yes you will, and by recklessly getting less sleep than you need, putting yourself at an increased risk of major diseases, you are contributing

to a reduced longevity meaning statistically you will die earlier than you would have done if you had slept well' (never let it be said that scientists are incapable of pithy, humorous remarks).

EARLY NIGHTS DON'T WORK

Going to bed early because you have got a 'big' day tomorrow just means that you will almost certainly lay there not sleeping until somewhere around your normal bedtime, getting ever more frustrated because you haven't fallen asleep, and you really do need sleep because you really do have a very big day tomorrow. This frustration of course adds to your inability to fall asleep earlier than usual.

YOU CANNOT CATCH UP ON SLEEP

When we have a poor night's sleep the next night the body will try to make up all the missed SWS sleep and about 50% of the REM sleep (which is why when you have a disturbed night, the next night you seem to sleep like a log or, as my Danish friend says, like a 'shot cow'). However, once you have two or more disturbed nights in a row you are unable to make up all that you have lost, even by having long sleep periods at the weekend. Catch up sleep at the weekend can be beneficial but only if you have deprived yourself of sleep during the week and it is not a replacement for getting good sleep every night.

Our propensity to try to 'catch up' on sleep at the weekends can be a cause of the 'Monday morning feeling'. During the week we keep pretty regular sleep times but at the weekend, it's 'party time'. We maybe stay up late on Friday night and have a couple of beers, lie-in on Saturday, another late night and then a long lie-in on Sunday. The body gets confused and starts to think thinks it is on holiday; but unfortunately you come down with bang when you have to wake up on Monday morning and crash into the harsh reality of another week at work.

MORNING PEOPLE ARE BETTER

Benjamin Franklin wrote ‘Early to bed and early to rise, makes a man healthy, wealthy, and wise’. But is this correct? Well I, in my expert opinion, think morning people are innately superior to everyone else; but then again, I am a strong morning type! There is some research that shows that early birds report feeling happier and healthier than night owls. They have also been found to be more proactive, meaning they do well in school and business. It is claimed that evening people tend to be smarter, more outgoing, more creative and have a better sense of humour than morning types (not of course first thing in the morning when they are miserable sods).

The main problem with being an owl is that this means sleeping patterns are out of sync with the typical 9 to 5 corporate schedule.

However, none of this really matters because our circadian rhythm is, to a large degree, genetically determined. You cannot ‘train’ yourself to be a lark or an owl, so you are just going to have to do the best with what you are.

DO I NEED TO ‘GROUND’ OR ‘EARTH’ MYSELF OR MY BED?

There is a large amount of pseudo-science mumbo-jumbo written about the need to ‘ground’ or ‘earth’ because of electromagnetic fields (EMF), some of it extremely worrying. For example, one ‘expert’ claims if you sleep in strong electromagnetic fields during pregnancy, your child will likely begin to exhibit neurological abnormalities within the first two years of life, such as neurological dysfunction, hyperactivity, and learning disorders. Of course, this ‘study’ has not been published in any scientific or medical journal and has no validity at all.

Proponents of ‘grounding’ present such a seductive image: ‘Have you ever noticed that you sleep better on a beach vacation after walking in the sand or being in the ocean? The sand and ocean

water are both naturally conductive materials and both help ground the body and remove excess positive electrons.' A far more plausible explanation is that you are on holiday – relaxed, stress-free, exercising in the sea, fresh air and sunshine; happy, eating good food, and enjoying the wine. This is why you would sleep better. From a scientific and medical perspective there is no need to 'ground' or 'earth' yourself or your bed. Of course, as it is entirely pointless and ineffectual to do so it will cause you no harm, other than possibly making your bank account emptier.

I HAVE A BAD BACK SO I NEED A FIRM MATTRESS

The old wives' tale that you need to have a firm bed if you have a bad back is simply wrong. In the past people with bad backs were advised to put a door under their mattress or to sleep on the floor. Nowadays, despite no evidence to support their advice, chiropractors, osteopaths, and doctors still recommend an 'orthopaedic' or really firm mattress. The reality is a study found that, in patients with lower back pain, subjective sleep was worst in those sleeping on firm mattress. In fact, if you have back pain you should sleep on a somewhat softer mattress; not a soft mattress, but one that is softer than your body weight would normally require.

SHOULD I PAINT MY BEDROOM A PARTICULAR COLOUR?

A common piece of advice is that you that you should paint your bedroom; blue, dark grey, lavender, white, neutral green or 'skin' colour (there seems to be a bit of confusion about the actual ideal colour). However, the simple fact is that your bedroom should be reserved for sleep, and this is best done when you have your eyes closed and it should be dark, therefore room colour has absolutely no effect on sleep.

IT'S HOT, DO I NEED TO SLEEP LIKE AN EGYPTIAN?

According to the internet the Egyptian way of sleeping is where before sleep you wrap yourself in a blanket that has been made damp. When I asked an Egyptian friend about this their response was simple: 'why would you do that?' Why, indeed? This is an example of what we scientists call 'totally made-up nonsense'.

IS IT NATURAL TO SLEEP IN TWO SEGMENTS?

In 2001 the historian Roger Ekirch proposed the idea that in pre-industrial times our sleep was 'segmented' with two periods of sleep ('first' and 'second') separated by a period of quiet wakefulness. This idea is endlessly quoted in the media and even by some people who really should know better. The problem is that while it is possible to find numerous examples of the phrase 'first sleep' in the literature, an extensive reading of original sources shows there is no evidence for the idea of 'segmented sleep'.

> *'The tendency has always been strong to believe that whatever received a name must be an entity or being, having an independent existence of its own.'*
>
> **John Stuart Mill**

The idea of a pre-industrial segmented sleep that Ekirch presents is, I believe, a classic case of reification. He found a number of examples of the use of the phrase, 'first sleep', and inferred that such an entity existed. This is completely erroneous.

Below are the seven major problems for the hypothesis that, to quote Ekirch, 'Until the close of the early modern era, Western Europeans on most evenings experienced two major intervals of

sleep bridged by up to an hour or more of quiet wakefulness' and that this mode of sleeping was 'the predominant pattern of sleep before the Industrial Revolution'.

1. The absence of descriptions in the literature of behaviour resembling Ekirch's proposed 'segmented sleep'.
2. The scarcity of the phrase 'second sleep' and its absence in almost all other languages in which the phrase 'first sleep' occurs.
3. The absence of descriptions, or names in any language, of the hypothesised intervening period of wakefulness.
4. The existence in many cultures of the concept of 'third sleep'.
5. The fact that examples of 'first sleep' occur at various times of the night and even during the day.
6. The lack of any scientific evidence of 'segmented sleep' in people living under real-life 'pre-industrial' conditions.
7. None of the models of circadian rhythms developed over the years hypothesise the existence of these two separate periods of sleep, nor the middle-of-the-night period of wake in humans.

For a point-by-point dissection of the concept of segmented sleep see my website www.thesleepconsutancy.com/ekich

'I AM SUPERMAN': POLYPHASIC NAPPING

Essentially, polyphasic napping is where you replace a consolidated period of nocturnal sleep with multiple short naps throughout the 24-hour period. There are various versions of the pattern of naps but they are all equally daft. Polyphasic napping is the type of sleep pattern adhered to by cats, three-month-old humans, extreme sportsman (although only every temporarily), and young men, predominantly, who believe in a slightly fascistic way, that they are 'Uberman' (this phase usually lasts until such a time as they get a

girlfriend or a job). Proponents of polyphasic napping claim that, Nikola Tesla, Leonardo da Vinci, Salvador Dali, Thomas Jefferson, Napoleon Bonaparte, Thomas Edison, and Winston Churchill, amongst others were all polyphasic nappers without giving a single piece of evidence to support their claims, of which of course there is precisely none (notice also how they never reference boring underachievers).

DO I NEED TO SLEEP IN 90-MINUTE CYCLES?

There are a number of apps that are designed to wake you up at the 'optimal' time based on your having a requisite number of sleep cycles, and indeed there is a whole sleep programme that is based around the idea of sleeping in 90-minute cycles. However, there is one small problem with this idea: sleep is not as 'regular' as they seem to assume. The average length of the first NREM-REM sleep cycle is anywhere between 70 and 100 minutes; with subsequent cycles averaging approximately 90 to 120 minutes. There is no easy way of knowing the length of any particular sleep cycle, on any particular night, so something that assumes a 'fixed' 90-minute cycle length will potentially be hugely inaccurate.

DO I HAVE TO AVOID ALCOHOL TO GET GOOD SLEEP?

Alcohol is the most widely used sleep aid and it has probably been used as such for as long as we have known of this magical elixir. Unfortunately, there is a lot of puritanical nonsense written about alcohol and sleep; it is as though the advice is being written by the temperance movement. I once gave a public lecture and afterwards an 89-year-old woman approached me and asked what was the problem with alcohol and sleep? I enquired why she was asking and she told me that she used to have a small sherry before bed until

her doctor told her to stop it as it would disturb her sleep. She then added plaintively ‘I do so miss it’. Alcohol works on the same receptors as sleeping tablets and so it will help put you to sleep. The problems come later in the night: the headache caused by dehydration, the need to visit the bathroom, and the disturbed and restless sleep from the heat generated as you burn off all the excess calories consumed. However, these effects are only going to occur after you have drunk a pretty decent amount of alcohol.

How much alcohol is necessary to disturb sleep? Well, everyone is different. We all know someone who would become intoxicated from a mere sniff of a barmaid's apron, and others who have a larger capacity of alcohol. That said, if you are drinking half a bottle of scotch before bed then it will of course disturb your sleep. However, a small sherry, a nip of whisky, or whatever before bed has never done anyone any harm and can be the perfect end to a nice evening.

I HEAR VOICES IN MY HEAD: AUTONOMOUS SENSORY MERIDIAN RESPONSE (ASMR)

ASMR has had a lot of media coverage over the last few years. Yet despite the scientific sounding name and the claims made for it there is very little scientific research into this phenomenon. What evidence there is shows that whatever effect, if any, that it has is only experienced by some people. The only study concerning ASMR having a beneficial effect on sleep was conducted in subjects who were already ASMR users and so it is hardly a surprise that they thought that there was a positive effect. If they didn't they would not still be using it (the study had no control group or control and no ‘sham' condition, so is basically scientifically worthless). ASMR is of course simply a fad; and like any fad, ‘believers’ (and those who make money by making outrageous claims about it) believe in it. We are all individuals so some people may find whispered voices relaxing and helpful in falling asleep, whereas others are more likely to find it really kind of creepy.

THE RHYTHM OF THE NIGHT: BINAURAL BEATS

According to that repository of all knowledge, Wikipedia, a binaural beat is ‘an auditory illusion perceived when two different pure-tone sine waves, both with frequencies lower than 1500 Hz, with less than a 40 Hz difference between them, are presented to a listener dichotically (one through each ear)’. According to PubMed, the repository of real science, there is precisely one paper showing a beneficial effect on sleep of binaural beats. However, the study did not use a double-blind, crossover design and is therefore, frankly, of no scientific value.

DO I NEED TO SLEEP LIKE A ‘CAVEMAN’? – PALAEO SLEEP

Why? As the advocates of this say it is only in the last 200–300 years that we have had problems sleeping supposedly due to our modern lifestyle. Now I know that some people's understanding of history can be slightly lacking but the Palaeolithic age was actually 70 000 years ago. (It is also really quite wrong to call the Palaeolithic people ‘cavemen’ as they were nomadic hunter gatherers, and didn't live as a rule in caves.)

So, this is how to sleep like a ‘caveman’: you use your computer (invented 1944), go on the internet (invented 1989), order a book (first printed book 1455), pay with your credit card (developed 1950), and get sent a CD (invented 1982) that uses binaural beats (first described 1839) which arrives via the postal service (first documented 2400BC). All rather modern isn't it? And not something that your average ‘caveman’ could possibly have used. It is claimed that the ‘caveman’ did not have any worries and therefore slept really well. But it is naive to believe that the sleep of our ancestors was somehow less disturbed by worries. OK they were not our twenty-first century worries – like whether you need to de-

clutter your bedroom – but very real worries about being eaten by predators, killed by enemies, where the next meal was coming from, and the supernatural fear of the night, all of which will have played on the minds of our 'cavemen'. Anthropologist Fred Wendorf in his book *Prehistory of Nubia* shows that Palaeo man had an awful lot to worry about:

> *'The best explanation for relatively short [Palaeolithic] life span is the combination of stresses of nomadism, climate and warfare. The latter is especially clear in the Jebel Sahaba population, where projectile wounds affecting bone are very common and almost half the population probably died violently.'*

Another claim made is that you should sleep on the ground for the authentic paleo experience, which rather overlooks the fact that most if not all mammals make a sleep site or nest, however rudimentary and in fact humans have been sleeping on mattresses for at least 77 000 years, right around the Palaeolithic era.

I will not make the obvious point that if life was so good in the Palaeolithic age then they would probably have not died so young (compared to our 'really unhealthy' post-industrial lifestyle that has caused us to live longer and healthier now than at any other time in history).

GET TO SLEEP IN UNDER 60 SECONDS: 4-7-8 BREATHING

There has been a huge amount of press coverage about 4-7-8 breathing and its claim that it can get you to sleep in 60 seconds. All you have to do is to 'place the tip of your tongue against the ridge of tissue just behind your upper front teeth and keep it there through the entire exercise. You will be exhaling through your mouth

around your tongue; try pursing your lips slightly if this seems awkward.' Then you repeatedly do the five-step procedure below:

- Exhale completely through your mouth, making a whoosh sound.
- Close your mouth and inhale quietly through your nose to a mental count of four.
- Hold your breath for a count of seven.
- Exhale completely through your mouth, making a whoosh sound to a count of eight.
- This is one breath. Now inhale again and repeat the cycle three more times for a total of four breaths.

Remember this is claimed to be able to get you to sleep in less than a minute, so why not give it a try and see how effective it is? Put the book down close your eyes and try it now, I will wait for you ...

...

...

Did it work? No, I didn't think so.

YOU'LL SLEEP BETTER NAKED

The main reason behind this piece of advice seems to be based on the fact that researchers at the University of Amsterdam have found that the best way to ensure a good quality sleep is lowering your skin temperature. Unfortunately for this theory what the Dutch actually found was that induction of a 0.4°C *increase* in skin temperature suppresses nocturnal wakefulness and shifts sleep to deeper stages. And how, anyway, if you are sleeping under a duvet would sleeping naked reduce your skin temperature?

DO I NEED TO AVOID BLUE LIGHT?

Light, in particular sunlight, is the primary *zeitgeber* (time giver/setter) for the body. Sunlight is broad spectrum (think rainbows) but it was recently discovered that it is specifically light in the blue part of the spectrum which is involved in telling the brain and body that it is daytime and thus we should be awake. Studies have shown that blue light emitted by screens has an effect by suppressing the release of melatonin, one of the important messengers in the initiation of sleep. People who use screens in the hours before bed have been shown to have poorer sleep and feel sleepier the next day. But what about stripping out the blue light from the screen? Well, recent research has shown that even with blue light stripped out there is still suppression of melatonin production and other studies have found that other wavelengths of light, as well as brightness, are also implicated modulating our sleep/wake cycle. Even the use of 'paper white' devices before bed has been shown to disturb sleep. Therefore, it is best to just avoid using technology such as your smartphone, tablet, TV, and laptop for at least 45 minutes before your intended hour of retiring.

Long before the discovery of the effects of blue light the advice was to avoid screens before bed. In those days is was the TV that was the issue, because you should not be cognitively arousing yourself before sleep. The simple fact is that you should be preparing the mind for sleep, not reading/answering emails, 'talking' to your imaginary friends on social media, or watching funny cat videos.

DO I NEED AN ALARM TO REMIND ME TO GO TO SLEEP?

Perhaps, but only if you are a child. An adult would know what time to go to sleep, would be able to tell the time (thus knowing when it is in fact the required bedtime), and take responsibility for themselves and go to sleep. I am currently developing alarm apps to remind people when to eat, when to defecate, and when to breath. As they say, there's one born every minute.

DO I HAVE TO BAN MY PETS FROM THE BEDROOM? THEY ARE SO CUTE!

There is conflicting research behind this question, and yes serious scientists have actually done the studies. Some argue that they disturb sleep and will bring dirt, allergens – and, in the case of cats – mice, birds, worms, etc. (either alive, partially alive or dismembered) into the bedroom. Others argue that the companionship they provide can aid sleep, perhaps by increasing the feeling of being safe and secure – the 'guard dog'.

Both cats and dogs can snore just like humans. Dogs can and will adapt to their owner's sleeping habits and positions, whereas cats cannot, or more probably will not, give up their crepuscular lifestyle and will go to sleep wherever they feel comfortable, however much that may disturb you. Dogs can be trained to obey a command to get off the bed, but good luck trying that with a cat. The simple fact is if your pet disturbs your sleep, they should be banished from the bedroom. Although of course that may be difficult if they are used to sleeping in the room and they will probably spend all night letting you know they want to come back in, which could be worse. So, it is probably best to make a rule right from the start and stick to it. But they are cute and, let's be honest, they probably disturb you much less than your partner or children, so maybe they can stay?

COUNTING SHEEP, SURELY THAT WORKS?

Research from a few years ago by Oxford University showed that counting sheep does not actually help you get to sleep. The reason for this is that by the simple act of counting the sheep you are actually cognitively arousing your brain. The research claimed it was far better to visualise a tranquil, static scene.

DO I NEED TO GO TO A SLEEP 'SPA'?

If you feel the necessity to go on a break billed as something like an ‘insomniacs retreat and sleep disorders boot-camp spa therapy weekend’, you should understand you'll usually sleep better when you are in relaxing environment; so the mere act of going to a spa for a couple of days and having massages, body scrubs, relaxing by the pool, etc. will help you sleep better – temporarily. However, your life is not one long spa weekend, so this improvement in your sleep should not be taken as evidence of effectiveness of the ‘sleep advice/therapy’ received. Only if when you go back to your normal life the advice helps you constantly sleep better can the advice be said to be effective, but then in that case the expensive ‘boot-camp’ would not have been necessary, the advice would have worked without it.

HELP! MY ROOM IS CLUTTERED

When you are asleep you have your eyes closed and it should be dark, really dark, therefore room clutter has absolutely no effect on sleep. People who recommend that you have to tidy and de-clutter your bedroom claim that not to do so will cause you to worry and this will disrupt your sleep. So, it is not actually the clutter but the worry about the clutter that will disturb your sleep. To be honest, if the only thing you have to worry about is the untidiness of your bedroom then you must have a pretty decent life because, seriously, there are far more important things to worry about.

MUST I EAT BREAKFAST WITHIN 30 MINUTES OF WAKING UP?

The ‘theory’ being that if you don't eat breakfast within this time your body believes it is living in famine and produces stress hormones that are not conducive to restful sleep. Eating breakfast within 30 minutes of waking supposedly convinces the body that food is plentiful.

It is barely credible that the body is so sensitive that it has not evolved to cope with an overnight fast of eight hours or so without thinking that it is experiencing a famine. You have eaten three meals a day, plus treats and snacks, for as long as you can remember. But if you don't eat breakfast within 30 minutes of awakening your body suddenly thinks that there is no food available, really! The idea also does not account for differences in wake-up time – if you go to bed at 11 p.m. and wake up at 5 a.m. surely this would be different from you waking at 8 a.m. If your body believes that it is in a state of famine after six hours sleep then surely it will believe automatically that it is in a state of famine after nine hours sleep, regardless of when you eat breakfast. And surely any feeling of famine is dependent on the timing of your last meal at night.

There is, of course, not a single piece of scientific evidence to support this theory.

MINDFULNESS AND SLEEP

There are some studies that have shown that mindfulness can help you sleep better, However, the benefits of mindfulness are simply due to the fact that, for some people, mindfulness is an effective way of quieting the mind, whether it is by thinking happy thoughts, by focusing on your breathing, or whatever.

CONCLUSION

In this book I have argued that, despite claims to the contrary, we are not facing a ‘catastrophe’ because of poor or short sleep. What is important though is that the phenomenal increase in the amount of information that we are now exposed to means that our sleep is now more important than ever before. No longer is it just the thing we did once we had fulfilled all our biological needs. It is now crucial for the ‘brain work’ necessary to cope in the modern world.

With all the stories in the media, the doom and gloom merchants, the unscientific advice of inexpert ‘sleep experts’, the technophiles promising us that technology is the future of sleep, it is perhaps hard to remember that getting good sleep should for the vast majority of us be easy: wind down, lay down, close your eyes, and sleep.

My all-time favourite piece of nonsense written about sleep comes from a ‘futurologist’ writing in one of the broadsheet newspapers in 2004, who stated that we ‘will end up in a world where the need to sleep is optional. I would say that will happen within the next quarter of a century.’ Now I am sure that the writer is very good at futurologising, or whatever it is called, but he seems to know very little about sleep. If I claimed to be a ‘futurologist’ (there does not appear to be a qualification for this, so I presume that means anyone can be one), and I suggested that in 25 years time breathing will be optional, I would be thought crazy.

There is no ‘future of sleep’, there seems to be a naive belief that in future technology or pharmaceuticals will somehow radically change our sleep. This will simply not happen. All the clever technology and smart pharmaceuticals in the world are not going to change the way we sleep or our need for sleep, any more that they will change our need for food, water, or breathing (remember those

sci-fi films from the 1950s and 1960s where we would get our nutrition from a handful of different coloured pills).

Sleep is a biological necessity and has evolved over millions of years, so the simple fact is that we will carry on sleeping the way we have always slept: laying down, at night, with our eyes closed for somewhere between six and nine hours a night.

It is your sleep and it is your life. Sleeping well is a decision you have to make. You can either choose to go through life feeling at your best, happy, focused, alert, healthy, productive. Or you can choose to experience life through the fog of sleepiness.

To feel better each day, you need to sleep better each night. Ideally you need to determine the amount of sleep you need to feel at your best and then you need to give your body and mind the time to get it. Yes, cleaning the kitchen, catching up on personal emails, or watching your favourite show are important, but not nearly as important as getting good sleep.

This really is a great time to be alive, but we also live in a world where it has never been more important to get good sleep.

Sleep well, live better.

Good night, sleep tight.*

NOTE

* And no ‘sleep tight’ has nothing to do with rope beds losing tension and having to be tightened up or some such nonsense, ‘tight’ is simply an archaic synonym for ‘well’ . . . good night, sleep well.

APPENDIX 1
SLEEP AND THE LAW OR ‘HOW TO GET AWAY WITH MURDER’

You may have seen cases in the press where people have claimed that they have committed crimes whilst asleep and therefore did not know what they were doing and thus are not guilty of that crime. Essentially, the law says that in order for a crime to have been committed there need to be both a ‘guilty act’ and a ‘guilty mind’. It is obvious that if someone has been killed that there is a guilty act, but was there a guilty mind? If there was then it is murder, if it was an accident or you were impaired through drink or drugs the law might then consider it manslaughter. But what would happen if you weren't impaired but had no knowledge or recollection of what you had done? In the past it was pretty simple because if you did not have a guilty mind you would have been judged to be insane or a lunatic and sent to an asylum (it is also this lack of a ‘guilty’ mind which means that young children are judged not to be criminally liable). However, if people do things during their sleep it can be argued that they are not conscious of what they are doing, i.e. do not have a guilty mind, but it is wrong to claim that they are insane. Sleep-related crimes pose a problem for the law as the person is obviously not a lunatic but is claiming, because they were asleep, not to have known what they were doing, hence the concept of non-insane automatism, i.e. you don't know what you are doing but you're not mad.

There are essentially three defences that have been used in the courts.

1. **Sleepwalking.** When you sleepwalk you can carry out basic over-learned behaviours. This may be a problem if you do the wrong thing in the wrong place at the wrong time (e.g. you

sleepwalk to another bedroom and get into bed with your young niece who happens to be staying with you).

2. **Sexsomnia.** This is an extreme variant of sleepwalking where a man has, or tries to have, penetrative sex.
3. **REM behaviour disorder.** When you dream you usually lose muscle tone so you are unable to act out your dreams. However, in some rare cases this temporary 'paralysis' does not happen and so you are able to act out what you are doing in your dreams (e.g. if you are dreaming of attacking a dinosaur you could potentially carry out the same attack, in reality, on your bed partner/roommate).

The law has to ask two questions of a defence: is it possible? And, is it probable? Now whilst sleep disorders undoubtedly exist, and thus it is quite possible for them to be the explanation for what occurred, the degree of probability that they did occur is much harder to ascertain scientifically, and it is left to the judge and jury to reach a conclusion as to the veracity of the defence on the basis of the information presented to them by expert witnesses. The problem is that there is really no way of scientifically providing proof either way, and so the 'evidence' is based upon the opinion of the experts. This has, in my opinion, meant that some of the successful uses of the 'sleep' defence, whilst possible, have perhaps been less than probable. The simple fact is that I am pretty sure that I know enough to be able commit a crime and use a sleep defence successfully. If I know that, then it is not too great a stretch of the imagination to believe that some clever lawyer may also know how to play this card. I can guarantee that this defence will be used more often in the future and, in many cases, it will be in a cynical attempt to get the guilty found innocent. So, are guilty people 'getting away with murder'? It is certainly possible.

APPENDIX 2
303 MORE THINGS YOU REALLY DO NOT HAVE TO DO IN ORDER TO GET GOOD SLEEP

All of these tips have, at one time or another, genuinely appeared in books, newspapers, or on the internet. I am not saying that you cannot do them if you want to, I am just saying that they are unlikely to actually help.

Eat an orange.

Move your electric clock or clock radio at least six feet from your head.

Stop eating completely by 7 p.m. (on average).

Eat three eggs fried in coconut oil with a few macadamia or Brazil nuts.

Remember the mundane details of the day in reverse order.

Picture a place in the world that fascinates you and fly over it like Superman.

Convince yourself that you slept well last night, even if you didn't.

Scrape your tongue.

A salad a day keeps insomnia at bay.

Stimulate your scalp with a boar-bristle brush.

Submerge your face in a bowl of ice water.

Pretend you're really, really tired.

Because the mind is slow, stable, and dull between 6–10pm, it is the ideal time for falling asleep.

Bedroom walls that are brown, purple, grey, gold, or red, may be negatively affecting your sleep.

To help you fall back to sleep apply moisturiser to hands, feet, and lower legs.

Go through the alphabet and come up with something you're grateful for starting with each letter.

Picture a movie playing in your head.

Think of yourself as a big-name soccer player scoring the most amazing goals ever.

Laugh yourself to sleep.

Do not have fancy archways in your bedroom.

Keep all bedroom doors closed at night.

Compose emails with each word starting with successive letters of the alphabet.

Imagine ‘It's time to get up’.

No water two hours before bed.

Imagine yourself in a big building, and you are trying to get to the never-ending bottom floor.

Your bed should always align to the north.

Avoid sharp metal within the bedroom (knives, axes, swords, guns, scissors, etc.).

To help you fall back to sleep, eat a yoghurt.

Listen to entirely instrumental music at low volume.

Roll your eyes in the back of your head so as to relax the eye muscles and trigger melatonin.

Eat a 250-calorie snack, made up of 75% carbs and 25% protein.

Compose sentences with the same initial letter to each word.

Drink milk obtained from cows during the night.

Put on a pair of sunglasses in the evening.

Mix 1 tbsp honey, 2 tbsp apple cider vinegar, cup of hot water and drink it 30 minutes before bed.

Think of famous people with the initials AA followed by AB, AC, etc.

Breathe in for ten seconds then out for ten, then in for nine and out for nine, and so on.

Record the sound at night using your mobile phone and listen to the noise during the day.

Any books on display in your bedroom should be about loving relationships.

Drink an iced cherry and banana smoothie.

Keep your eyes open and repeat to yourself ‘I will not sleep’.

Avoid sleeping with your head next to a steel radiator.

Close your eyes and roll the balls upwards three times.

Cover your face, head, and neck with your arms and hands in any comfortable configuration.

Do NOT drink very cold water.

Ensure that there are no sharp corners of walls or furniture pointing towards your bed.

Spend four or five hours a day on your feet.

Count to 102 in increments of 3 over and over again.

Eat spring onions at night.

Don't count sheep, talk to the shepherd.

Note down all that you feel grateful for from the day's events.

Yawn 10–12 times just before going to bed.

Do a striptease (without an audience).

Call a loved one before bed.

If you close your eyes and roll your eyes up three times, it can help you in getting a good sleep.

Go to sleep every night at 10:30 p.m.

No personal development reading two hours before bed.

Don't have chocolate within 7–8 hours of bedtime.

Sprinkle just-washed sheets and pillowcases with lavender water.

Pretend you're at work.

Don't watch upsetting television programs prior to bedtime.

Plant a cypress near your house to hear the wind sigh in it.

Drink ½ cup of natural pineapple juice just prior to bedtime.

Start to breathe like a sleeping person.

Before going to bed have a glass of raw lemon juice.

Imagine you are a baby in a pram and someone is gently rocking you to sleep.

Force yourself to yawn two or three times.

Sleep in a new location like the sofa.

Drift off to sleep by ensuring you're horizontal.

Work back through the main events of your life.

Don't watch highly emotional movies before bed.

Inhale through your left nostril.

Lay a sock over your eyes.

Before it's bedtime, be mindful of who you interact with … both online and offline.

Blink really quickly for 60 seconds.

Listen to music that consists of a sleepy girl's voice.

Stretch for five minutes before you get into bed.

Clap your hands every day for half an hour.

Focus your eyes on the tip of your nose and nothing else.

Heat your bare feet before a fire for at least 15 minutes before bedtime.

Avoid sleeping with your cheeks touching the pillows.

Count how many three letter words end in ‘y’.

Go to bed by 9:30 p.m. so you are asleep by 10 p.m.

Move your favourite night activities to the morning.

Intense exercise is probably the single best way to induce deep, restorative sleep.

The earlier you open your eyes each day, the easier it will be to fall asleep that night.

A spoonful of raw local honey about 30 minutes before bed.

Listen to music that has instruments where the musician has to pause to take natural breaths.

Getting up an hour or so earlier allows you to be ready to go to sleep earlier.

Set two bedtimes. The first is to cue your body it's time to wind down the second is for actual lights out.

Prepare for bedtime all day long.

Adequate seafood is important.

If you cannot avoid TV viewing completely, at the least favour animal shows or sports.

Bedroom art: choose images that you want to see happening in your life.

Keep your bedroom closet clean and organised.

Pretend you are in no hurry to go to sleep.

Don't place the bed head against a wall shared with a bathroom.

Do a headstand.

Get to sleep before midnight at least four times a week.

Recall a dream and get back into it.

Make sure that any stresses of the day have been dealt with by 8 p.m.

Breathe in for five seconds, hold for five seconds, breathe out for five seconds, hold for five seconds, repeat until your mind is silent.

Interrupt your thought process and then think to yourself, ‘Continue. I'm listening.’

Eat a few peanuts.

Ingest a massive mashed sweet potato covered in coconut oil and cinnamon three hours before bed.

Spell Czechoslovakia backwards.

Eat animal fat and/or olive oil at dinner.

Eat low-mercury fish and seafood at dinner.

Sit before an open fire contemplating the dull embers as they glow.

Curl your toes for a count of seven and then relax. Repeat for a few minutes.

Eat eight almonds and two dates within 30 minutes of waking.

Make sure there are no heavy or sharp items hanging over your bed.

Press gently behind the earlobes and make small circles with your fingers.

Listen to the sound of bacon sizzling.

Everything you do five minutes before bed (brush teeth, set alarm, wash face,) do at 1⁄3 the speed.

Mix 5 tsp of organic raw honey and 1 tsp of Himalayan pink sea salt, take ½ tsp before bed.

Talk to yourself in bed.

The bed must not be in a position facing open shelving.

Describe your home town in the clearest possible terms as though to a complete stranger.

Drink a pint of hot water before each meal and at bedtime.

Read Cicero's defence speeches.

Pretend to snore.

Mirrored closet doors next to your bed should be removed or covered at night.

Do not leave a gap or space between the wall and your headboard.

Use the index and middle fingers of each hand to gently pull your mouth open.

Eat a sugar lump and drink a glass of water.

Lay perfectly still and count 1…2…3…4…sleep 1…2…3…4…sleep 1…2…3…4…sleep.

Eat most of your carbohydrates at dinner.

Rub the nape of the neck with vinegar just before going to bed.

Always combine a protein food with a low to medium GI carbohydrate food.

Imagine a room covered wall-to-wall and floor-to-ceiling with black velvet.

Minimise social interactions after dark.

Avoid spices and herbs in large quantities after midday, and especially at dinner.

Make sure to eat enough salt throughout the day.

Have a bath containing a handful of coarse hay.

No unpleasant images or artwork in the bedroom.

Put your phone on airplane mode to avoid EMFs which can disturb sleep.

Eat any small amount of fresh fruit.

Lifting weights in the evening is a perfect bedtime routine.

Count backwards slowly from 500, imagining drawing the numbers on the backs of your eyelids.

Set a one-episode limit of your favourite TV programme, then switch off the television.

List the number of operas you have seen.

Constantly repeat ‘I will sleep’.

Imagine lying in a pool of black velvet, and letting yourself sink down into it.

Make sure not to hang a mirror next to or opposite the bed.

Think backwards from being in bed.

Avoid bookshelves opposite your bed.

Eat two cups plain popcorn with a drizzle of olive oil.

Mirrors are a big problem as you should never be able to see yourself when lying in bed.

Work out your tax return in your head.

Cut an onion in two and wear it around the neck at night.

To help you fall back to sleep change into a fresh pair of pyjamas.

Before going to bed, write down your three core priorities for the day ahead.

Have a hard-boiled egg alongside a cup of tea.

In the evening (around 8 p.m.) dim your lights and turn off electronic devices.

Adjust the colour, texture, position, and sleeping direction of your headboard.

The bed should be the biggest piece of furniture in the bedroom.

If you have fresh damp grass, walk on it barefoot before bed.

Do the dishes in the last hour of the evening.

List the first names of all your friends and acquaintances, taking each letter of the alphabet in order.

Play a game of golf in your imagination in the greatest detail possible.

Have the bed positioned in such a way that you can see the door.

Add dill into your food.

Don't eat more than 30g of carbohydrates before bed.

Drink 1 litre of Rooibos tea.

Read a company report and accounts in bed.

Rearrange or re-decorate your bedroom.

Eat a banana, marmite, and lettuce sandwich.

Take five to six times longer to undress.

Make yourself foetus-like and curl up on your side.

Always clean your bed before sleeping as nightmares can be caused due to an untidy bed.

Lay still and count the different sounds you hear.

Rub your stomach when you're tired.

If you awaken in the night and cannot go back to sleep, get up and change the position of your shoes or turn them in the opposite direction.

List the number of boy's names ending in -bert.

Take a tablespoon of honey, preferably raw, before bed on an empty stomach.

Eat a potato.

Spend at least ten minutes humming like a bumble bee before you go to bed.

Spray your feet with a mix of magnesium oil, lavender and Roman chamomile essential oils

Do not take a bath before bed in water below 100°F (38°C).

Limit your time in bed to only eight hours.

Take three or four drops of peppermint essence in tepid water.

Don't take a hot bath or shower at night.

Imagine it is 6:45 a.m. and close your eyes ‘for just five minutes’.

Envision a candle on a motionless, infinite ocean.

Rewind through the events of your day, focusing on conversations, sights and sounds.

Read one chapter exactly of a book every night.

Don't eat too many oysters.

Day dreaming can cause you to get sleepy during the day which makes it hard to fall asleep at night.

Position your bed so that your head isn't near a power outlet.

Inhale and expand your belly while taking in air, then exhale.

Put pillows under your heels so your feet are higher than your head.

A hectic and disorganised bedroom can make it hard to fall asleep.

Lay the wrong direction in your bed (head where your feet go).

Eat a small bowl of yoghurt with a few of your favourite toppings added.

Look at photos of other people sleeping.

List the number of girl's names ending in -lyn.

Drink a nice warm cup of herbal tea and add a tablespoon of butter.

A vase of poppies kept in your bedroom will make you sleep soundly.

Do not hang pictures of naked people in the bedroom.

Take the trash out in the last hour of the evening.

Do not use incandescent bulbs in your bedroom.

Socialise with people you like.

Rub your body down with magnesium oil or lotion.

Eat a handful of grapes.

Stand on one leg ‘to exhaustion’ – until it hurts too much to continue.

Beds that have built-in storage drawer's underneath are considered bad.

Chow on magnesium-rich foods such as pumpkin seeds, spinach, and swiss chard.

Ditch your old school ticking clock for a modern clock.

A sweet potato with a little butter and honey drizzled on it.

Go to the garden collect some stones and throw them, hard, one after another.

Allow your bedroom to be a ‘non-conceptual place’.

Close the window when you sleep.

Have at least one hour of full body sun with either a bikini or boxers around noon.

Press your thumb in between your eyebrows and the top of your nose.

The bed must have two identical bedside tables (one on each side).

If you wake up in the night, take a teaspoon or two of a 5:1 mixture of sugar and salt.

Put aluminium foil over your window to make it pitch black.

Look upwards for a few minutes (with your eyes only, not your head).

Display meaningful art or display fun art in new ways in your bedroom.

Boosting levels of melatonin throughout the day can help regulate sleep patterns.

Mentally conjugate irregular French verbs in all tenses.

Have a bath containing green birch leaves.

Apply nettle leaves finely chopped and mixed with whisked egg white to the temples and forehead.

Retrace your steps from some favourite long walk.

Walk around the block (before bed).

Don't place large pieces of furniture by your bed.

Shut the door when you go to bed if there are other people in the house.

Have a bath containing a big handful of lime flowers.

Cut a lemon and place it next to your bedside table.

Take a bath in camomile tea while drinking camomile tea.

Remove photos of family and friends from your bedroom.

Drink bottled gourd juice mixed with sesame oil.

Tell yourself that in five minutes, you have to get up and go out to a meeting.

Imagine warmer feet and hands.

Drink a cold beer while having a hot shower.

Keep your bed easily accessible and approachable from all sides.

Just before retiring, run barefoot in the snow, then plunge the feet in a cold bath and dry vigorously.

Before you tuck yourself into bed, slip a bar of soap under the covers.

Counting backwards from 999 three numbers at a time ... 999, 996, 993, etc.

Get rid of photos and memorabilia of old flames in the bedroom.

Plan a non-negotiable agenda for the next day.

Eat half a dozen fried oysters before bed.

Picture yourself writing numbers on a blackboard. Write 100, erase it, write 99, erase it ...

Eat about two full-sized carrots, dipping in almond butter for each bite.

Fantasise about gaining a super power while in your normal sleep position.

Eat a plate of ice-cream, slowly.

Do not fill your bedroom with useless objects.

Count the number of a's and b's and c's in the Lord's Prayer.

Put a handful of salt in your pillow slip.

Don't brush your teeth just before sleeping, the smell of peppermint is alerting.

Switch off anything that reminds you of the next morning's schedule.

Lay perfectly still with your eyes closed and breathe deeply for ten minutes.

Gently squeeze your second toe just below the nail.

Vividly recall a time when you've naturally and irresistibly felt yourself sliding into deep sleep.

Plan a skiing trip in your mind.

Eat a large apple, chewing it slowly, skin and all.

Think what is it like to drive a Toyota Corolla.

Count by 7s, 8s, 9s or any number whose multiples you haven't memorised.

Imagine you are left a fortune and plan how to spend it.

Cover your eyes with some satin undies.

Place the right hand on the forehead and the left hand on the back of the neck while counting to 49.

Eat two tablespoons of organic almond butter on celery sticks before bed.

Keep 12–14 hours between your last meal of the day and your first meal the following day.

Lights out for a full night of sleep is precisely 10:37 p.m.

Get to bed as early as possible.

Pretend you are in a sleeping competition where you try to get to sleep first before someone else.

Lay on your left side and breathe through your right nostril only.

Repeat the Ten Commandments, slowly, over and over.

Avoid positioning your bed directly under a window.

Re-engineer your life so you're in bed by 9:30 p.m.

Go to bed exhausted from your true passions.

Never use sad or lonely images to decorate your sleeping space.

Slowly repeat ‘s-l-e-e-p’.

Pick a three-digit number and find whether it's prime.

Have a solid bedroom wall behind you when you sleep.

Before bed play a game of solitaire.

List the number of airports you have visited.

Poor breathing during the day affects sleep at night.

Make your bed every morning as it ensures the sheets don't get creases which can affect sleep later.

Drink pumpkin juice with half a tablespoon of honey.

Go to bed at 9–10 p.m. instead of midnight.

Use ice baths to provoke sleep.

Listen to soft music, especially if played on an organ.

Do not have a see-through open glass walled shower room in your bedroom.

Have a poached egg on wholegrain bread.

Picture yourself interacting with your favourite characters in a movie, book or TV show.

Don't place the bed so it faces a window or artificial light.

Watch something that you know makes you sleepy.

Repeat ‘Om Ram Jai Jai Ram’ until sleep comes.

Drink some bone broth.

Have a bath containing freshwater weeds gathered from thermal pools.

Just close your eyes and stay as still as humanly possible.

Put a knife and fork crossed under your pillow.

Read a book that you really want to finish.

If you can afford it, buy a mini-planetarium.

Boil an unpeeled banana in water for ten minutes and drink the water one hour before bed.

Sit outside in the moonlight for a few minutes.

Press on the indent between your big toe and second toe.

Walk up and down the hallway.

Shut off the wi-fi at night.

Avoid having furniture that's too big for your space in the bedroom.

Hum to yourself.

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