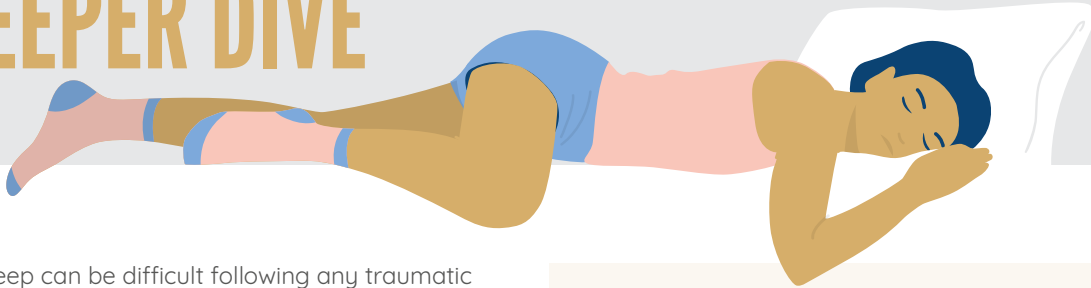


GETTING TO SLEEP AT NIGHT – A DEEPER DIVE



Getting to sleep can be difficult following any traumatic life change. And having a clot certainly falls into that category. Often sleep is disrupted by worry: What about work, leisure, family, future health, and so on? At night, worries can take over, become exaggerated and cause substantial anxiety. As well as being unpleasant in themselves, they can disrupt sleep and make us tired and groggy in the morning and functioning at less than our best. We look at how to manage worries here and in the linked information sheets. However, the leaflet also covers a range of additional strategies that can be used to help achieve and sustain sleep, and reduce times of unwanted wakefulness.

WHY DO WE SLEEP?

We spend around one third of our life asleep, so clearly sleep is important. The short-term effects of a lack of sleep are all too obvious. We feel groggy, muzzy, and are not operating at our best. Sleep allows us to process things that have happened to us, consolidate them into memory, and also to get rid of toxins and waste products from the brain that build up during the day. In the longer term, chronic lack or poor-quality sleep, increases the risk of disorders including high blood pressure, heart disease, diabetes, depression, and obesity.

The amount each person needs to sleep varies according to their genetic make-up and age, but as a simple rule of thumb, an adult typically requires around seven or more hours sleep a night. Children and teens need more, and older adults typically need less. A very small percentage (around two percent) of the population need less sleep and feel fully rested and functioning with much less than seven hours. But for most of us, seven or more hours is the optimal.

A few examples of

STRATEGIES TO MAXIMISE CHANCES OF A GOOD NIGHT'S SLEEP



Get up at the same time every morning



Take a nap during the day



Do some exercise or keep active during the day



Turn off tech 30 mins before bed



Go to bed at roughly the same time each night



Take a warm bath at least an hour before you go to bed



Avoid alcohol

WHAT MAKES US GO TO SLEEP – AND KEEPS US ASLEEP?

Three linked biological systems directly regulate when and to what degree we feel sleepy and help to sustain sleep.

Melatonin release

The first system is our biological clock, or circadian rhythm as it is more technically known. This regulates our wakefulness, making us feel awake or sleepy at regular times in the day. Key to the initiation and maintenance of sleep is the hormone melatonin, which is initially released as light fades, triggering the onset and then maintenance of sleep. Bright light, light can delay or interrupt this melatonin release. The light associated with the use of phones, tablets and so on is particularly problematic as their use both grabs our attention, and inhibits melatonin release, both of which delay the onset of sleep.

The body-clock

The second factor is known as sleep-wake homeostasis, in which the brain keeps track of the need for sleep and is programmed to attempt to achieve a certain amount of sleep over each day. The 'drive' to sleep gets stronger every hour an individual is awake and causes longer and deeper sleep after a period of sleep deprivation. It works on an approximate 14-hour cycle, with the need for sleep gradually increasing as the day progresses reaching a peak after this time, initiating the release of melatonin.

The sympathetic nervous system

The levels of activity of all body organs (heart, muscles, even our kidneys and bowels) are regulated by the nervous system. This comprises two sets of nerves which compete to regulate the level of activation in each organ. One set of nerves, known as the sympathetic nervous system, increases activation. So, if you need to run, this system makes the heart beat faster, our blood pressure rise, our muscles tense, and so on. Activation of the other set of nerves, known as the parasympathetic nervous system, tends to slow things down and allows us to rest and recuperate. Sleep requires low levels of activation of the sympathetic nervous system, and high activation of the parasympathetic system. This leaves us relaxed, calm and ready to drift off to sleep.



WHAT HAPPENS WHEN WE SLEEP?

Sleep is not a uniform state through the night. Four different stages of sleep have been identified, and we 'cycle' through them. Each cycle takes around 80-100 minutes, and we usually have between four and six cycles per night. The first three stages of each cycle involve shifting into increasingly deep sleep. The fourth is a very different experience.

Stage 1

The changeover from wakefulness to sleep. It comprises a few minutes of relatively light sleep, during which the sleeper's heart rate, breathing, and eye movements slow, and their body muscles relax with occasional twitches (that is, the parasympathetic nervous system becomes dominant). Their brain waves begin to slow from their daytime wakefulness patterns.

Stage 2

An intermediate period before entering deep sleep. The sleeper's heart rate and breathing slow even further, and their muscles relax become more relaxed. Body temperature falls and eye movements stop. Brain wave activity slows but is marked by brief bursts of electrical activity. The majority of sleep is spent in this stage.

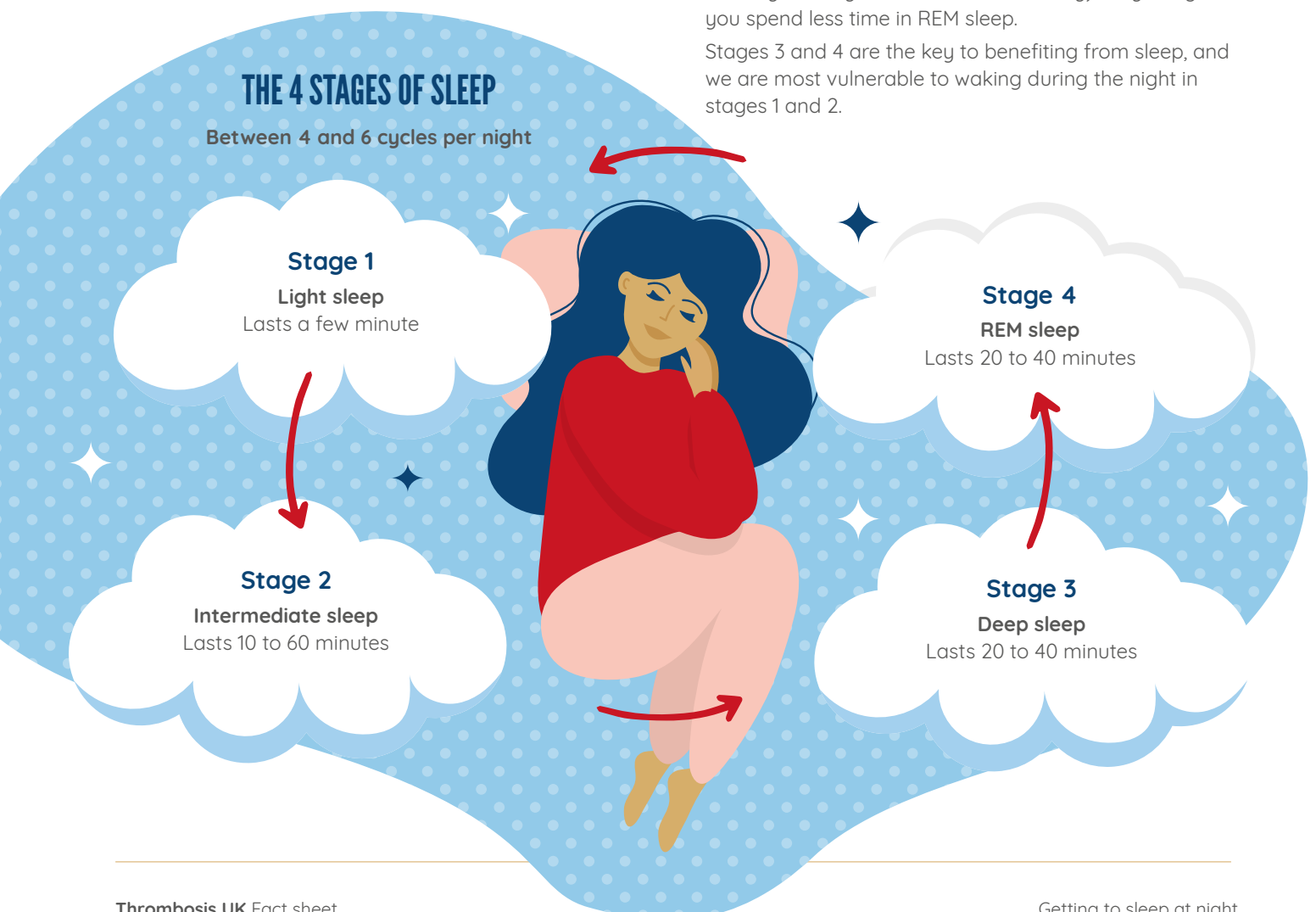
Stage 3

The deep sleep needed to feel refreshed in the morning. We are in this stage for longer periods during the first half of the night – which is good news for people who have to wake earlier than optimal. During it, the heart rate and breathing are at their slowest, and muscles are the most relaxed. Brain waves become even slower, and the sleeper can be difficult to rouse.

Stage 4

This stage occurs for the first time around 90 minutes after falling asleep and it is the one in which most of our dreaming occurs. It is known as Rapid Eye Movement or REM sleep and is characterised by the dreamer's eyes moving rapidly from side to side behind closed eyelids. At this time, brain wave activity, heart rate and breathing are close to those of wakefulness. Most dreaming occurs during this stage and to stop the dreamer acting out their dreams, their limbs are paralysed. It is still not fully understood why we dream, but we do know that it involves consolidating memories and processing the events of the previous day (or actually the day before this, rather oddly). As you age, you spend less time in REM sleep.

Stages 3 and 4 are the key to benefiting from sleep, and we are most vulnerable to waking during the night in stages 1 and 2.



MAXIMISING SLEEP

While a good night's sleep is always a good thing, it's not always easy to achieve.

Strategies to maximise chances of a good night's sleep can be divided into three broad categories:

1

Those that developed during the day

2

Those that are used before going to bed

3

Those that are used when in bed – either to help get to sleep or to manage periods of wakefulness

None of the strategies provide a single answer to the problem of poor sleep, but together they can make a real difference.

STRATEGIES TO USE IN THE DAY

Get some early light

The first strategy may be quite surprising, because it involves one of the first things you do in the morning. Exposure to bright, and ideally natural, light first thing can be crucial to a good night's sleep. Eat your breakfast by the window, go for a 15-minute walk, or similar. This may be a surprising suggestion, but it comes back to the body clock discussed earlier. Essentially, exposure to bright light early in the day does two things. It stops the production of melatonin, the hormone that induces sleepiness, helping you feel awake and ready to deal with the day. It also starts the body clock timer to reactivate the release of melatonin roughly 14 hours later. So, bright light early in the morning, stimulates sleepiness at night.

Get up at the same time every morning

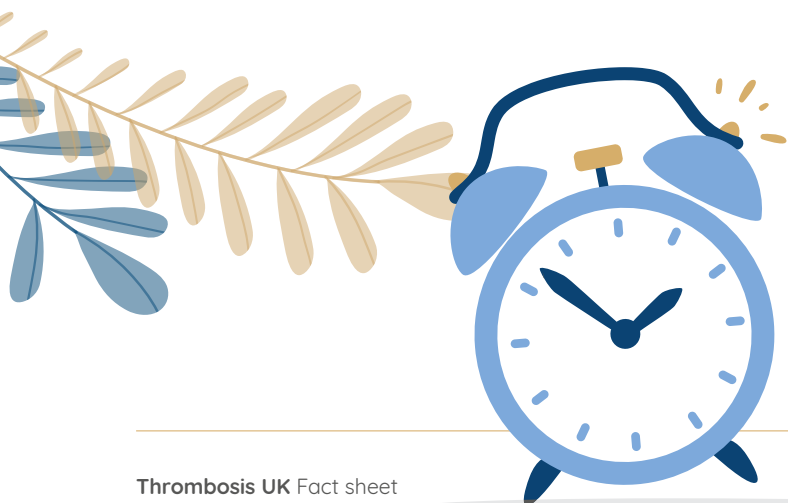
Ideally you need to establish a routine time of going to bed (give or take an hour or so), so getting up at roughly the same time each day (including, sorry, weekends and holidays!) triggers this 14-hour clock and makes it more likely you will sleep when you go to bed at this routine time.

Take a nap during the day?

Napping is good for you. It can boost memory, lift your mood, and make you feel more alert and alive. But! There are certain guidelines to maximise these benefits and prevent a nap having a negative effect on your sleep. Naps as short as 10 minutes can be of benefit. But if they go on too long, say more than 30 minutes, they can leave you feeling groggy. So, keep nap times relatively short. It is also important not to nap too late in the day. Napping late in the day interferes with the 14-hour clock cycle, and increases the difficulty in getting to sleep. As a rule of thumb, try to nap before 3 pm.

Do some exercise or keep active during the day

Exercising at moderate intensity for as little as half an hour three times a week has been shown to improve how quickly people fall asleep and how long they sleep for. It can also reduce day-time sleepiness. Moderate exercise raises your heart rate and makes you breathe faster and feel warmer. A lovely definition is that you are exercising at a moderate intensity if you can still talk, but not sing! So, something like brisk walking is moderate intensity exercise. Don't forget that moderate exercise does not have to be formal exercise, doing work around the house, carrying heavy shopping bags, walking to the bus can all contribute to your levels of moderate exercise. It does not seem to matter when you exercise. Exercise even quite late into the evening is fine, just as long as you have time to cool down before beginning to wind down before going to bed.



STRATEGIES TO USE IN THE EVENING

Not surprisingly, there are a number of things you can do in the evening before going to bed to help you sleep.

Some are obvious, some less so..

Wind down

Wind down during the evening before going to bed. It can be useful to have normal lighting on in the room to prevent early dozing during the evening, but this can be dimmed around 30 minutes before going to bed. Don't drink caffeinated drinks that may stimulate. If you smoke, try to smoke your last cigarette as far from the time you go to bed as possible.

Turn off tech

Turn off tech 30 mins before bed. As noted earlier, blue light and constant stimulation inhibit melatonin release, and make it difficult to wind down. Night mode on a tablet, phone or computer does reduce this effect, so if you have to do this, make sure you put this setting on. But make sure that what you are looking at (e.g work emails) is not going to increase your stress levels and trigger the rumination that can inhibit sleep.

Go to bed at roughly the same time each night

Establish a natural rhythm of sleep but base this time around a time you naturally feel sleepy. Don't go to bed too early to have more time available to sleep. Remember the 14-hour clock. Trying to go to sleep much earlier than this allows, and the risk is that you will simply toss and turn and not get to sleep – and then because you are frustrated, find it even more difficult to get to sleep. If you want to go to bed earlier to let you to get a longer night's sleep, don't make any large changes. Treat this as a medium-term process, with steps of 10 minutes or so each night until you reach your desired bed-time.

Take a warm bath

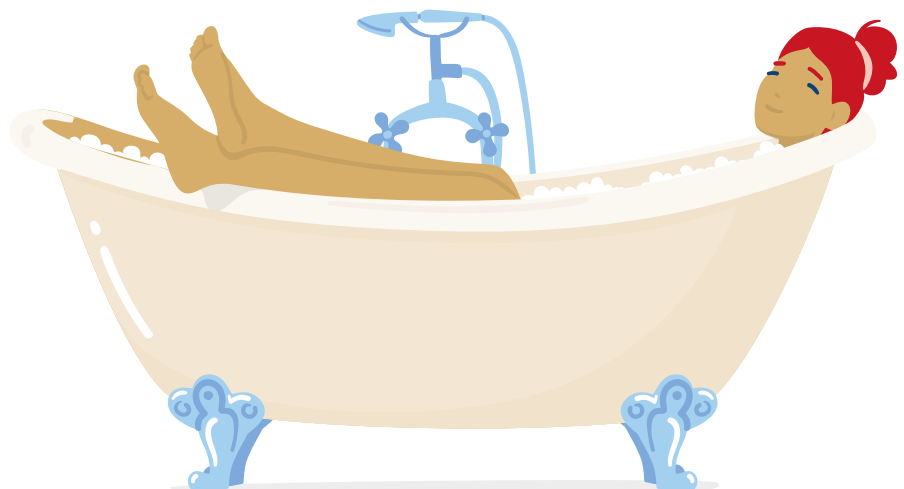
Take a warm bath. Some people find a warm bath helps them relax. But because being over-warm can inhibit sleep (think long summer nights!), make sure you take this at least an hour before you go to bed. This allows your temperature to fall, and combined with the bath may initiate sleepiness.

Avoid alcohol

Alcohol inhibits the onset of REM sleep, which is probably the most important phase of sleep, in terms of how we feel the following day. High levels of alcohol may feel of benefit, as we may slip into the light stages of sleep more easily (or not), but this key stage, which is much more important, will be inhibited and leave you feeling tired and muzzy in addition to any effects on hydration and so on.

Put the day to rest

Put the day to rest before you go to bed. Apologies for the sexism here, but a classic study of many years ago found that women who did the washing up prior to going to bed slept much better than those who did not do so. Told you it was sexist – sorry! But the key issue here is that doing this task allowed them to stop thinking about it, and to relax into sleep. And this issue holds for all of us. Worries, concerns, thinking through problems, planning for the next day, and so on can all increase our brain activity and prevent the onset of sleep. So, if you have things you need to think about that may cause some degree of tension or stress, spend some time thinking through them before going to bed. And if they come to mind in bed, distract away from them. Do not engage in these types of thoughts. We discuss some distraction strategies you can use in the day and night in the information sheet called 'Coping with Worries: active distraction techniques'.



Distract away from worry.

Even after trying to put the day to rest before getting into bed, many people may still worry once in bed. Worry is an odd thing. It can be unpleasant, but it's also easy to get hooked into and to take over our thoughts. We may even want to worry at some level. Hopefully, by sitting and thinking about things before going to bed, this will mean you don't need to worry, and can distract away from it. The key to distraction is to really concentrate on something other than the worry as soon as you catch yourself slipping into worry. Its best to plan what this distraction may be so you can quickly disengage from the worries and start focusing on it. Distractors can be things you can think: think of a calm or favourite place, plan an upcoming holiday, count backwards in sevens from 96, work out which is your favourite film/music star. Distractors can also be things you can do: read a book, listen to music, and so on.

It really does not matter what the distractor is, but the key is you really engage with it, pushing out any unwanted thoughts and focusing intently on the distractor. This may mean you do things slightly differently to normal. For example, if you are reading a book or article online, don't skim read - focus on each word of each sentence until you are absorbed in the content. If you are listening to music, focus on the lyrics and try to really follow them, don't let the music just waft across you. If worries come back to mind, refocus on the distractor. It does get easier.



Learn to relax

Learn to relax. Being even a little less relaxed than ideal can inhibit getting to sleep. One of the reasons that worry can impact on our sleep is not just because it activates the brain, it also activates the sympathetic nervous system, and stops the natural reduction in heart rate and breathing associated with sleep. Stopping worrying can reduce this arousal. However, it is also possible to learn to directly reduce this activity using active relaxation. Purposefully going through the body, relaxing each of the main muscle groups (following the guidance in our leaflet, 'Guided Relaxation' with link to an audio recording) can aid relaxation, increase parasympathetic action, and speed up the process of getting to sleep. Going through the routine if you wake up in the night can also be useful.

If at first you don't succeed.

If you wake during the night or cannot sleep for 10-15 minutes after going to bed, find your head is buzzing, or you cannot relax, stop actively trying to get to sleep. Do something that is relaxing and requires some concentration until you feel drowsy. Read a book, listen to relaxing music or an audio book, do some other activity that is relaxing for you and requires concentration until you feel drowsy. Remember to try not to put on bright lights and not to look at social media or a computer unless you are using 'night mode'. Then try again. And finally... You won't need all the strategies, and some will work better for you than others. So, experiment and find out what works for you, and good luck!

Links to support groups

Thrombosis UK (www.thrombosisuk.org)

The Stroke Association (www.stroke.org.uk)

Tel: 0300 772 9603 Email: admin@thrombosisuk.org



Reg Charity No: 1090540