- Sleep

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8 SECRETS TO A GOOD NIGHT'S SLEEP



We would all like more sleep, but we haven't all got the luxury of early nights or endless lie-ins. Luckily, the secret to sleeping longer isn't spending more time in bed, it's falling asleep faster. Here are eight ways to make it easier to drop off

by SOPHIE FREEMAN

The author of *The Great Gatsby,* F Scott Fitzgerald, once said, "The worst thing in the world is to try to sleep and not to." He was far from alone in that sentiment. Listen to any group of bleary-eyed new parents and one of them is likely to compare sleep deprivation to a form of torture.

Lack of sleep feels horrible. It doesn't just leave you feeling down, dozy and demotivated, it makes you eat more. As much as 385 calories, say researchers at King's College London, due to a drop in our levels of the satiety hormone leptin and a rise in the 'hunger hormone' ghrelin. It also causes changes to our gut bacteria, makes us more sensitive to pain and can lead to trouble in deciphering other people's emotions.

After a single night of poor sleep, it's possible to see changes in our blood. A study by Western Norway University of Applied Sciences showed that 34 proteins were significantly affected after six fewer hours of shut-eye, including ones related to immune suppression and impaired blood-clotting.

When it comes to trying to improve our sleep, most of us will have heard the same pieces of advice time and time again.

There's limiting your caffeine past midday (stop drinking it 8.8 hours before bedtime, to be precise) and not exercising hard within an hour of sleeping (light exercise is fine).

Others are to use the bedroom only for bed-related activities – sleep and sex – and leave your devices somewhere else. And then there's making sure you go to sleep at the same time every day, which comes with the added benefit that a regular routine can extend your lifespan.

Obviously, if you're really struggling to sleep, you should see a doctor. "You might have an underlying issue that requires being properly addressed," says Dr Guy Leschziner, a professor of neurology and sleep medicine at Guy's and St Thomas' NHS Foundation Trust, London. "It's easy to attribute poor sleep to insomnia, but there may be other conditions that explain your symptoms, for example sleep apnoea."

But in the quest for the perfect night's slumber, here are some fresh ideas...



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1 KEEP TO AN EATING SCHEDULE

While increasing your intake of fruit and vegetables can improve sleep, according to a University of Michigan study (as can a Mediterranean or anti-inflammatory diet), it's not just *what* you eat that matters, but *when*.

Researchers in the field of chrononutrition (how the timing of food intake relates to your body clock) have found that eating at specific times, as well as certain food/time combinations, can affect sleeping patterns.

If the main issue is struggling to nod off in the first place, you could try a high-glycaemic index (GI) meal four hours before bedtime. Research suggests that those who ate jasmine rice, which has a GI of 109, took an average of nine minutes to fall asleep, while those who ate a low GI meal took 17.5 minutes. High-GI meals result in a greater concentration of the amino acid tryptophan in the bloodstream. This is converted into serotonin and ultimately melatonin, which regulates the sleep-wake cycle. Timing is important, though – the same high-GI meal just one hour before bedtime doesn't have the same effect, with people taking nearly 15 minutes to drift off.

Late eating has been found to be a no-no in other studies, too. Researchers from the University of Michigan found that people who ate within an hour of bedtime were more likely to wake during the night; they slept longer, but this was due to a need to compensate for having less-efficient, interrupted sleep.

Another study by the Universidade Federal de São Paulo, Brazil, found that adult men who ate more fat late at night had lower sleep efficiency. Disruptions to women's sleep, meanwhile, were linked to both fat consumption and overall calories.

Eating at the wrong times may impact the 'clocks' in your cells too. "We have a central clock in a region of the brain called the suprachiasmatic nucleus, but also clocks in every major tissue and probably most/all cells in the body," says Jonathan Johnston, professor of chronobiology and integrative physiology at the University of Surrey. "There's strong evidence from animal studies and the few available human studies that meal timing is a dominant synchroniser of some circadian clocks outside of the brain."

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2 SQUEEZE YOUR MUSCLES

When you're looking to nod off, try squeezing and relaxing your big muscle groups. It's a technique known as progressive muscle relaxation (PMR) and can help with insomnia, according to studies, and improve your naps.

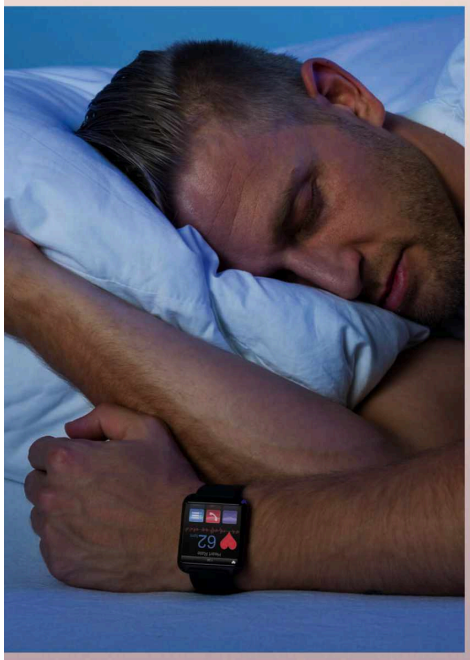
Dr Katharine Simon of the University of California, Irvine, compared people who did PMR before a nap to those who went to sleep listening to relaxing music. The results showed that the former group had 125 per cent more deep sleep and an improved sleep pattern. "PMR before napping can enhance the amount of restorative sleep one obtains, and better sleep is linked to improved attention, creativity and cognitive function," she says.

There are lots of instructional PMR videos online. Its effect on deep sleep – which is critical for supporting new memories, immune functioning and physiological restoration – is likely to be seen for nighttime sleep, too, although more research is needed.

As for how long to nap for, it depends on your desired outcome, says Simon. "For a quick refresh and better attention, shorter naps suffice. For retaining new learning, a 60-minute nap that includes deeper, restorative sleep stages is beneficial. To enhance creativity, aim for a 90-minute nap to cycle through all sleep stages, including rapid eye movement (REM) sleep."

The timing of a nap can influence the type of sleep, with early morning kips often having more REM sleep compared to ones in the late afternoon.





3 IGNORE YOUR SLEEP TRACKER... MAYBE

They come in various forms: smartwatches, wrist-worn fitness trackers and, more recently, smart rings. They're meant to help improve your sleep, but are they making things worse?

For a person who suffers from insomnia caused by excessive worrying, sleep tracking can be counterproductive, says Dr Mathias Baumert, who studies sleep technology at the University of Adelaide, Australia. "It may create additional stress on someone 'needing to fall asleep'."

A University of Oxford, study may offer further evidence that ignorance (in the case of our sleep patterns) may well be bliss. Some participants were given smartwatches that had been manipulated to show a false report of a poor night's sleep, and had a lower mood, difficulties with thinking processes and increased sleepiness. Those who were shown a report of a good night exhibited the opposite. A separate study by the University of Warwick, obtained similar results. "Even though a sleep-tracking device might say you slept poorly last night, your own perception of your sleep quality may be quite positive," says Dr Anita Lenneis, lead author of the study.

The devices aren't always accurate either. "They aim to gauge sleep indirectly, based on sensors that capture body movement (actigraphy) and physiological variables that tend to be different during sleep than while awake, most commonly pulse rate, respiration and temperature," says Dr Baumert. "Unless you measure brain activity directly, via electroencephalography, you never know for sure if a person is asleep."

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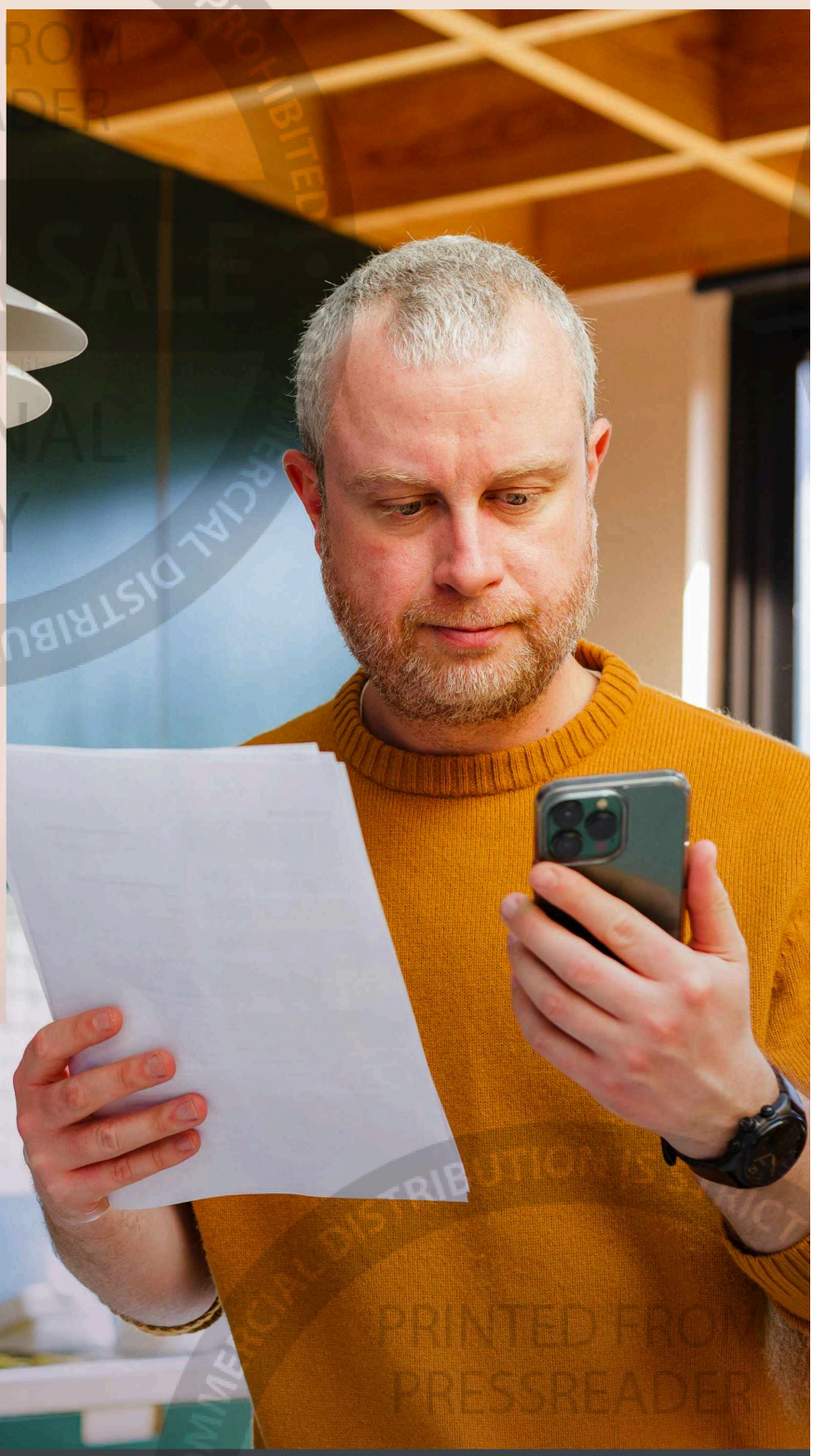
4 PUT IN SOME WORRY TIME

By scheduling a specific time of the day when you can focus on the things that are worrying you, and jot them down on a piece of paper, you may lessen those sleep-destroying thoughts that can rear their head at bedtime.

"It's better to write the worries down rather than thinking about them," says Dr Chris James, a consultant clinical psychologist who runs an online practice specialising in sleep. "Thinking can lead to rumination, where you keep turning the thoughts over and over in a loop, which can be exhausting and make you feel more worried as the worries snowball."

The act of writing down your worries creates "mental distance" from them, says James, so your brain can "use its ability to apply logic and greater perspective." Knowing that you've 'done' your worrying earlier in the day, and that you have more time to do it again the following day, means that if nagging thoughts do pop up as you go to sleep, you can tell yourself 'I don't need to think about this right now.'

Schedule your worry time for whenever is most convenient, although don't put it too close to bedtime in case it starts to "wake your brain up", says James. For anyone who might find it awkward, he adds: "A good thing about the strategy is that it's something you can do privately, so you could write down your worries in a note on your phone and it would just look like you're messaging."



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5 SORT OUT YOUR BEDTIME THOUGHTS

If your scheduled worry time isn't stopping those bothersome thoughts from intruding on your bedtime, another option is to try cognitive refocusing treatment for insomnia (CRT-I). First used with military veterans, its aim is to help people drift off by changing the style and content of their pre-sleep thoughts.

In poor sleepers, pre-sleep ponderings tend to relate to planning and problem solving, and are likely to be more unpleasant than those of good sleepers, according to a review by Université Laval in Québec, Canada. Changing those physiologically and emotionally arousing thoughts to non-stimulating ones is the key.

In a study by Syracuse University, New York, a group of insomniacs were told to put in place the usual sleep hygiene rules – such as no caffeine after midday, keeping the bedroom dark and no exercise within two hours of bedtime – but half the group worked with an instructor to identify three topics each that would be compelling enough to maintain their attention and replace existing thoughts. These could include new meal recipes or plots from their favourite movies and TV shows.

The important thing was that the chosen topics had to be "devoid of emotion-laden, negative, exciting or worrisome content," say the researchers. Participants were asked to focus their attention on these topics when getting to sleep (and if they woke in the night) and do nothing else. Even looking at the clock could disrupt focus. "The presumed mechanism is that CRT-I reduces emotionally and physiologically activating thought content (for example, worry, rumination, dwelling on daily and future concerns, and thinking about the consequences of poor sleep) to improve the calm and relaxed state that may promote sleep onset," says Prof Les Gellis, who led the study. "We found that at the [one-month] follow up, participants in the group showed a large reduction in nighttime arousal while the sleep hygiene group showed only a small reduction."

6 SPEND LESS TIME IN BED

In sleep restriction therapy (SRT), the aim is to reduce the amount of time a poor sleeper spends in bed beyond the average number of hours they're actually asleep. Simply increasing your amount of bed time in the hopes that it will increase your sleep doesn't work, according to Stephanie Romiszewski, a sleep psychologist and co-founder of re:sleep.

"Rather, it tends to make things worse. Sleep becomes more broken, more diluted and sleep anxiety can increase, further exacerbating the lack of sleep," she says. "By reducing time in bed to the actual average sleep time, you improve sleep efficiency – getting to sleep becomes easier and the quality improves."

It's then possible for people to increase their bed time incrementally to add further sleep duration if needed. Although, as Romiszewski stresses, some people "just need to increase sleep quality and not duration".

The gentler cousin of SRT is sleep compression: making small reductions in the time spent in bed rather than a dramatic cut all at once. "Sleep anxiety is more easily managed as you're getting used to less time in bed gradually, which seems counterintuitive to start with, and also the process relies on building a strong sleep drive at predictable times of the day," says Romiszewski. The results of sleep compression can be "very powerful", if the person keeps to a rigid plan over time.

It needs to be stressed that not everyone is a suitable candidate to undertake SRT or sleep compression. People with bipolar disorder, seizures or those with untreated daytime sleepiness or mental health conditions should work with experienced sleep experts.

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7 YOU CAN LEAVE YOUR SOCKS ON

There have been multiple studies to suggest that one method to improve sleep is to go to bed with your socks on. Researchers at Seoul National University, South Korea, found that people were able to nod off 7.5 minutes earlier, slept for a full 32 minutes longer and woke up less often during the night.

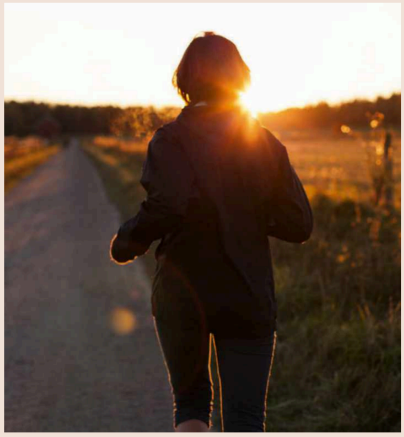
Leaving your socks on taps into our body's preference for a slightly lower core temperature at night, which is driven by a redistribution of blood to the skin, most prominently at our extremities, under the guidance of our biological clock. When our hands and feet are warm, it's a sign that we're ready for sleep, via activation of the hypothalamus in the brain, which is full of temperature-sensitive neurons and is strongly involved in sleep regulation.

"Warm feet go hand-in-hand with sleep, in a casual way," says Dr Roy Raymann, a leading sleep neuroscientist and founder of the Sleep Czar consultancy. "If our feet are too cold, it prevents the brain area switching to a sleep-permissive state."

There's an added, perhaps surprising, advantage, too: wearing socks in bed might just give your love life a boost. Researchers at the University of Groningen, the Netherlands, studying male and female orgasms found that only 50 per cent were able to climax. But when the participants wore socks, the figure jumped to 80 per cent. Who knew wearing socks in bed could set the mood, as well as give you a good night's sleep?



8 CATCH SOME EARLY RAYS



"Morning sunlight, particularly bright sunlight, can have important consequences on your circadian rhythm," says Prof Guy Leschziner. "So, if you're one of these people with a delayed sleep phase – which means you're potentially a significant night owl, wishing to go to bed late and wake up very, very late – then morning sunlight pushes your circadian rhythm forward. It makes you more able to go to bed a little earlier and wake up a little earlier."

Early sunlight has this effect because there are cells in our retinas, not related to vision, that relay information about light exposure directly to a deep part of our brains, the suprachiasmatic nucleus, which encodes the master circadian clock – the keeper of our circadian rhythm. "Daytime sunlight may help improve mood and make you feel more alert as well," adds Leschziner.

The recommended amount of sunlight is 30–45 minutes, shortly after waking up. On overcast days, a suitable alternative would be a lightbox with an intensity approximating natural sunlight, or 10,000 lux.

In a study carried out by researchers at the University of Queensland, Australia, young adults were exposed to morning sunlight and found that their circadian rhythms shifted as much as two hours forward. **SF**

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