- Aging

How to sleep more soundly — and reduce your dementia risk

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FORGET doing crossword puzzles, Sudoku, word search or reciting the alphabet backwards, one of the most powerful ways to protect yourself against dementia as you get older is by ensuring you get a good night's sleep.



We have known for some time that when we are in deep sleep, our body begins to do essential repairs, and fluid is released in our brains which helps wash out toxins that have been linked with Alzheimer's disease.

Last year, new research found that deep sleep is so important that even a small reduction can lead to a big increase in dementia risk. What makes this even more worrying is the fact that our sleep quality naturally tends to drop off with age.

The amount of time we spend each night in deep sleep shrinks from a luxuriously rejuvenating two hours to more like 30 minutes, which is why it is so important to do whatever you can to protect and enhance the quality of your sleep as you move through life.

As a long-term insomniac, I've spent many years studying sleep and, more recently, I've been involved in a major clinical study at a leading sleep research centre testing the best ways to combat insomnia.

It's made a huge difference to me and I've combined all I've learnt into a simple, science-based four-week plan.

Today, in the final part of a series taken from my new book 4 Weeks To Better Sleep, I outline the final crucial stages of the plan and explain how a good night's sleep is the best protection against the ravages of dementia.

Each night, when you go to bed, within an hour of beginning to nod off, you should begin to experience deep sleep.

This is the stage when you are at your most relaxed and difficult to rouse.

It is also the point in your sleep cycle where your brain sorts out your memories and decides which to save and which to delete.

Even compared to a computer, your brain can store an extraordinary amount of data — around 1,000 terabytes.

A computer with that capacity could store two billion books or 500,000 films.

But we are being bombarded by stimuli all the time, and something has to give, so, during deep sleep, important memories are shifted from the hippocampus (the brain's short-term storage area) to the safety of the prefrontal cortex (the long-term storage area — think of it as your hard drive).

The memories left behind in short-term storage are gradually deleted.

Scientists now know that deep sleep is also the stage when the brain works hard to wash away toxic proteins such as beta amyloid and tau, which appear to drive Alzheimer's disease. Without enough deep sleep, our memories fade and our risk of dementia rises dramatically. But the good news is that if you can turn things around and boost deep sleep, then this will reduce your dementia risk.

Deep sleep has been described as a 'life raft' that helps keep memories afloat, while the toxins try to drag them down into the watery depths of Alzheimer's disease.

There is also evidence that getting a good night's sleep can help people who are already at high risk of developing dementia and it can slow down progression of the disease.

If you've been reading about my four-week sleep plan in the Mail and The Mail on Sunday over the weekend, you'll be familiar with my simple tips for improving sleep, and you may even have started to put them into action already.

Studies show that you can improve your sleep quality by staying mentally and physically active during the day, creating a cool and dark sleep environment and minimising screen time before bed.

There is also research which shows that having a warm shower an hour before bed — the hour gives your body the time to cool down — can increase the quality of deep, slow-wave sleep.

Eating the right foods during the day — specifically a high fibre, high protein Mediterranean diet — will also boost deep sleep, as will avoiding late-night snacks. One of my rules is to try to avoid consuming anything with calories within three hours of going to bed.

And although people are rightly concerned about getting enough sleep, it's not just the number of hours you spend in bed, it's also the quality of the sleep that really sets you up for optimal health — and a longer life.

And if you are wondering, what is the single most important change you can make to maximise your chance of getting more deep sleep?

Well, it is to establish and stick to a regular sleep schedule — going to sleep and waking up at the same time every day.

It is a disarmingly simple but powerful tool in your quest for better sleep.

A study of more than 88,000 people, published last month in the journal Neurology, found those with irregular sleep patterns were 53 per cent more likely to develop dementia than more regular sleepers.

It's a rule I now stick to religiously. If it means keeping hold of my mental faculties for a few more years, I'm happy to press pause on the box set and prioritise a good night's sleep.

WHAT TO DO IN WEEK FOUR

IN My book, I describe how, over the first three weeks of my sleep plan, you will build a set of healthy lifestyle habits that should ringfence good sleep.

As part of the plan, you may want to try bedtime restriction therapy where, for a few weeks, you cut the amount of time you spend in bed.

This is a well-proven way of curing insomnia and boosting your sleep efficiency — the percentage of time you spend in bed asleep, rather than tossing and turning.

SAY GOODBYE TO WEEKEND LIE-INS

LIKE eating a big bar of chocolate, having a long weekend lie-in might feel good at the time, but it won't do your body and brain any favours in the long-term.

Lie-ins mess up the body's natural rhythms (your circadian rhythms) and reduce your sleep drive, so when you get to Sunday night you may struggle to sleep.

The urge to sleep is driven, at least in part, by a chemical in the brain called adenosine. It binds to receptors in your brain and causes those familiar feelings of drowsiness. The longer you are awake, the higher your adenosine levels rise and the sleepier you are likely to feel. If you have a long lie-in, there is less time for adenosine to rise, so you are unlikely to feel tired at bedtime.

This might not be a problem when you're young, or if you are lucky enough to sleep well, but if you're prone to insomnia, this shortfall could be enough to tip you into a run of bad nights.

That's why, unless you are doing bedtime restriction therapy, I recommend you stick to a regular sleep window, going to bed and waking up at the same time seven days a week — weekends included.

you should also aim to exercise regularly and work to keep a lid on your stress levels by practising mindfulness and breathing exercises whenever you can.

BOOST YOUR MICROBIOME

OVER the past few years, scientists have become fascinated by the activities of the microbiome — these are the trillions of microscopic bacterium, fungi and viruses which live in our gut.

New research is emerging all the time, and I have been very excited to discover that studies show some of our microbes actually produce 95 per cent of the body's serotonin and dopamine — natural chemicals that make us happy, calm and which aid restful sleep.

We now know that a poor diet of highly processed food depletes these microbial populations, and that they thrive on a fibre-rich Mediterranean diet, which is one that contains oily fish (such as salmon, mackerel, anchovies, sardines and herring), nuts, olive oil and a wide variety of fruit, vegetables and pulses.

If you've been closely following my plan, you will have already been increasing the vegetables and fibre in your diet.

At week four, it's time to call in the reinforcements! If you've managed to build a good army of fibre-munching microbes, you can now start topping up your ' good bacteria' by eating fermented foods such as sauerkraut, kimchi, kefir and kombucha.

These foods deliver fresh populations of helpful bacteria into your gut to boost the number that are already present.

A word of warning, however — if you haven't tried fermented foods before, start slowly. Although these foods are great at helping to boost the beneficial bacteria in your gut, they can be an acquired taste and may produce gas!

MAKE THE MOST OF NATURAL LIGHT

IF YOU are an owl — someone who perhaps struggles to fall asleep before midnight — I recommend going out into the early morning light each day to help reset your internal body clock and increase the chance of good sleep that night.

During the long, dark winter, it can be difficult to get enough light, and 30 minutes every morning in front of a light box can help.

Light levels in your house or at

In the final part of our indispensable series to help you sleep better in just four weeks, MICHAEL MOSLEY explains how important quality rest is for the brain

the office are more likely to be a miserable 25 to 50 lux (a measure of light intensity), but a good light box can produce 10,000 lux, which is similar to the sunshine on a bright spring morning.

Extreme larks, on the other hand, who wake very early and struggle to stay awake at night, might benefit from a blast of light in the early evening to wake them up.

The same is also true for anyone who does night shifts.

PUT YOUR PHONE TO BED FIRST

YOU'VE probably heard this before, but at night it is best to keep your phone out of reach as you will otherwise be tempted to pick it up and start scrolling.

According to Google Trends, the most popular time of day for people to search for the word 'insomnia' is at 3am (presumably that is when people are doom-scrolling on their smartphones).

I recommend putting your phone or tablet on the other side of the bedroom or even in another room altogether.

SLEEP TO BOLSTER YOUR IMMUNITY

GOOD sleep is essential for helping you to fight off infections, because that is when your body makes many of the essential components of your immune system.

Studies show that if you regularly sleep for fewer than six hours a night, this makes you four times more likely to develop a cold than someone who sleeps for seven hours or more.

Similarly, if your sleep efficiency (the percentage of time you spend in bed asleep) is less than 90 per cent, you are nearly six times more likely to develop a cold.

TRY NOT TO WORRY ABOUT IT

ONE of the main things that keeps people awake at night is worrying about the terrible consequences of not getting to sleep.

Irrational thoughts like: 'I won't get to sleep and if I don't, then I'll be exhausted at work tomorrow and I might lose my job' go round and round in a loop.

But it's important to realise that these thoughts are not real.

At night, your filters are down, and you are more vulnerable to inner demons, so any thoughts you might have will inevitably be less rooted in reality than any negative thoughts you might have during the day.

If you find yourself lying in bed at night ruminating, try imagining what a sympathetic friend would say if you were to share your concerns with them, or try giving your negative thoughts a silly name, such as 'donald'.

Then, as soon as you notice those irrational worries starting to kick in, you can say to yourself: 'That is just donald sounding off again.' This might sound crazy, but give it a try. The process helps you to look at your thoughts dispassionately and allows the stressful associations to slip away.

SHOULD I TAKE MELATONIN?

AS WE get older, our brains tend to produce less of a key hormone called melatonin, which is released in the evenings to help co- ordinate the parts of the brain that tip you into sleep. Lower levels of melatonin could partly explain why sleep deteriorates with age.

In the u.S., controlled-release melatonin is the recommended first-line treatment for older adults with insomnia, and you can buy tablets at the chemist. It seems to be safe with very few side-effects.

But in the UK, Australia and much of Europe, you can only get melatonin on prescription. It is perfectly legal to buy online, but there is no guarantee of quality, so be careful.

Studies show that a 2 mg dose is safe for people over the age of 55 to take around one to two hours before bedtime.