



Neurohacking promises to make you feel sharper, smarter, more creative and to banish brain fog. Anna Bonet finds out how it works

very working afternoon, without fail, I have an energy crash. For around two hours after lunch, I feel groggy, unmotivated and uncreative. The latter is particularly detrimental to the two main aspects of my job: writing and coming up with ideas. But for all of my working life, I've accepted that this pattern is just how I operate, and so I've attempted to design my days around it. Early

mornings are for tasks that require my creativity and complete focus; afternoons are for research, admin and meetings.

But it doesn't always work out like that. Sometimes, meetings that are out of my control are put in the diary in the morning. Other times, I'll have such a tight deadline that I have no choice but to continue writing through the afternoon. And when the to-do list is piling high, I can't always afford to lose over two hours of every day being – quite simply – terribly unproductive.

So what if I didn't have to? The new book by Elizabeth Ricker, *Smarter Tomorrow: How 15 Minutes Of Neurohacking A Day Can Help You Work Better, Think Faster, And Get More Done*, suggests that there might just be a solution to my problem.

Although neurohacking has been around since the 1980s, it's been gaining popularity in recent years, particularly in Silicon Valley. According to *Smarter Tomorrow*, neurohacking is what helps CEOs, leaders and tech entrepreneurs maintain that constant level of achievement (come to think about it, I don't imagine that Elon Musk wastes two hours a day wanting a lie-down).

In its broadest sense, neurohacking is simply the act of trying to rewire your brain to your advantage, so that you can fulfil your potential. 'It's about exploring, understanding and optimising your mental performance,' says Ricker, who has studied neuroscience at both MIT and Harvard. Ways of doing so can include tDCS (transcranial direct current stimulation) – a treatment that uses direct electrical currents to stimulate specific parts of the brain – and nootropics, so-called 'smart drugs'. But neurohacking doesn't have to mean taking pills or attaching electrodes to your scalp; some of the strategies are far more straightforward. In fact, you're probably already neurohacking without realising it, for example, when you plan to do a short breathing exercise right before giving a presentation to a boss.

Neurohacking technology has also become much more widespread and accessible: 'Apps, wearables and personal trackers put our personal data at our fingertips,' says Ricker. But how can we use that data? Ricker has been 'intrigued' by the idea of optimising her brain ever since she was in school, when she was told she wasn't fulfilling her potential. As a teenager, she then got into athletics, and 'discovered my brain was working a whole lot better when I was doing exercise'. Every time she worked out, Ricker was more productive, more able to focus and better at retaining information – and her grades went up. This set Ricker on a journey of researching what else was out there that

could boost mental performance – whether by improving memory recall or enhancing creativity. And it turned out there was a lot.

Keen to learn more? Ricker advises starting by identifying what she calls 'bottlenecks' in your health and lifestyle that might be holding you back (see below). Without first 'debugging', you

DEBUG YOUR BRAIN

Before beginning your neurohacking journey, start by identifying and dealing with any of the following possible bottlenecks...

Temperature

The temperature of a room can impact how you work. Researchers have found that women typically work best under warmer conditions (around 25°C) and men under cooler conditions (around 22°C), so make sure that's not holding you back.

Nutrition

Blood sugar spikes, digestive issues and allergies can all affect your mental performance. While these differ for everyone, some common culprits are caffeine, dairy and food containing a lot of gluten or sugar. Experiment by keeping a food diary and eliminating potential trigger foods that rob you of energy.

Hydration

Dehydration can make you feel tired and lethargic. So, have a water bottle with you at all times and set reminders to drink until it becomes a habit – the NHS recommends six to eight glasses a day, around two litres.

Meaning and spirituality

Feeling like your life is not meaningful can make it hard to concentrate or be creative. Try meditation, prayer, volunteering, spending time in nature or engaging in other activities that inspire feelings of awe, gratitude and altruism.

Sleep

Lack of sleep is one of the biggest obstacles to effective neurohacking. If you struggle to get to sleep, the US military perfected an approach that, if practised repeatedly, apparently allows you to fall asleep within two minutes. It involves progressively relaxing each part of your body, similar to a meditative body scan.

won't be able to get the full benefits of neurohacking, she says. Then, run some self-experiments to find out which techniques work for you. 'Test out different techniques and record the results. This will give greater self-awareness when it comes to how your brain operates, which is the foundation of neurohacking,' she advises.

As for my sluggish afternoons, I've since tried a variety of interventions. I changed my caffeine pattern, drank more water, switched up what I ate for lunch, and tried lunchtime naps. What has helped most is a combination of two things: a 15-minute walk around the block, followed by a 10-minute guided meditation on the Calm app. With those two things, I'm now far better at working in the afternoons.

Part of me wonders whether I had created a self-fulfilling prophecy, stuck in my own narrative that I couldn't be productive after lunch, but since learning about neurohacking, I've discovered that it is possible to rewire your brain and think a little differently. Turn the page and try it for yourself...

FIVE NEUROHACKING TECHNIQUES TO TRY AT HOME

1 BEST FOR CREATIVITY: Experimenting with the scent placebo

The placebo effect is a well-known and powerful way of hacking your brain. One study saw researchers tell participants that smelling cinnamon would make them more creative – and it did. And other research has shown it doesn't matter if you self-administer; it can still achieve the desired effects. So, to enhance your creativity, smell a cinnamon scent and say these magic words: 'Studies have shown significant improvements through mind-body self-upgrading processes. Inhaling this scent will increase my creativity.' Then, for 10 minutes, do a task that allows you to be creative. You could play with words to see if they turn into a short story, reimagine the decoration of your home, or draw something from your imagination. If you do this on a regular basis, your brain should associate the smell of cinnamon and the 'magic words' with creativity.

2 BEST FOR MEMORY: Spaced repetition

Forget someone's name 10 seconds after they've told it to you? Then try spaced repetition. Based on research around the average timing of human forgetting, it's a type of memorisation method that uses flashcards but focuses on going over information just before you would typically forget it. There are lots of spaced repetition apps, but AnkiApp is the most popular (free on the App Store, Windows, macOS and Google Play). Practise for 15 minutes a day and you'll find you're better at recalling information.

3

BEST FOR MOOD: Laughter yoga

A fast-track way to boost your mood is laughter yoga.

Evidence shows that whether or not your laughter is genuine, the benefits are the same: laughing releases the 'happy chemicals' dopamine and serotonin, and in turn, lowers the stress hormone cortisol. No yoga kit is required – simply spend five minutes a day laughing. If there's nothing funny to hand, fake it. You might sound – and feel – like a crazy person, but you'll feel happier afterwards.



4 BEST FOR FOCUS AND PRODUCTIVITY: A seven-minute HIIT workout

A huge amount of research has found that exercise can improve mental performance – particularly when it's high intensity. The morning has also been proven as the best time to exercise for this, as it's associated with a cognitive performance boost of nearly 30%, while afternoon exercise studies averaged a cognitive boost of about 8%. Do the following HIIT exercise first thing for better focus and productivity during the day:

- *Jumping jacks for 30 seconds, then rest for 10 seconds.*
- *Wall sit (back to a wall; knees bent) for 30 seconds, then rest for 10 seconds.*
- *Push-ups for 30 seconds, then rest for 10 seconds*
- *Abdominal crunches for 30 seconds, then rest for 10 seconds.*
- *Step-ups on to a chair for 30 seconds, then rest for 10 seconds.*
- *Squats for 30 seconds, then rest for 10 seconds.*
- *Tricep dips on a chair for 30 seconds, then rest for 10 seconds.*
- *Plank for 30 seconds, then rest for 10 seconds.*
- *High knees on the spot for 30 seconds, then rest for 10 seconds.*
- *Alternating lunges for 30 seconds, then rest for 10 seconds.*
- *Push-ups with rotations (lifting one arm up to the sky at a time) for 30 seconds, then rest for 10 seconds.*
- *Side planks for 15 seconds on each side (total of 30 seconds), then rest for 10 seconds.*

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BEST FOR ENERGY: Blue light

If you're tired and lacking in energy, consider how much light you're getting and what colour it is. The sun is our natural source of blue light, meaning we associate it with being awake and alert. In fact, blue light had similar effectiveness to caffeine when study participants attempted to drive while sleepy. When you're lacking in sunlight, invest in Cambridge-based leading light-therapy retailer Lumie's DeskLamp SAD Light (£120, lumie.com); it's enriched with blue light*, to help boost energy levels naturally.

Smarter Tomorrow (John Murray Press) by Elizabeth Ricker is out 17th August