



A surprisingly potent technique can boost your short and long-term recall – and it appears to help everyone from students to Alzheimer's patients.

To memorise new material, it's easy to assume that the more work you put in, the better you will perform.

Yet taking the occasional down time – to do literally nothing – may be exactly what you need.

Just dim the lights, sit back, and enjoy 10-15 minutes of quiet contemplation, and you'll find that your memory of the facts you have just learnt is far better than if you had attempted to use that moment more productively.

Although it's already well known that we should pace our studies, new research suggests that we should aim for "minimal interference" during these breaks – deliberately avoiding any activity that could tamper with the delicate task of memory formation.

So no running errands, checking your emails, or surfing the web on your smartphone.

You really need to give your brain the chance for a complete recharge with no distractions.

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## Effortless way to improve your memory

When trying to memorise new material, it's easy to assume that the more work you put in, the better you will perform. Yet taking the occasional down time – to do literally nothing – may be exactly what you need. Just dim the lights, sit back, and enjoy 10-15 minutes of quiet contemplation, and you'll find that your memory of the facts you have just learnt is far better than if you had attempted to use that moment more productively.

Although it's already well known that we should pace our studies, new research suggests that we should aim for "minimal interference" during these breaks – deliberately avoiding any activity that could tamper with the delicate task of memory formation. So no running errands, checking your emails, or surfing the web on your smartphone. You really need to give your brain the chance for a complete recharge with no distractions. An excuse to do nothing may seem like a perfect mnemonic technique for the lazy student, but this discovery may also offer some relief for people with amnesia and some forms of dementia, suggesting new ways to release a latent, previously unrecognised, capacity to learn and remember.

The remarkable memory-boosting benefits of undisturbed rest were first documented in 1900 by the German psychologist Georg Elias Muller and his

his student Alfons Pilzecker. In one of [their many experiments on memory consolidation](#), Muller and Pilzecker first asked their participants to learn a list of meaningless syllables. Following a short study period, half the group were immediately given a second list to learn – while the rest were given a six-minute break before continuing.

When tested one-and-a-half-hours later, the two groups showed strikingly different patterns of recall. The participants given the break remembered nearly 50% of their list, compared to an average of 28% for the group who had been given no time to recharge their mental batteries.

The finding suggested that our memory for new information is especially fragile just after it has first been encoded, making it more susceptible to interference from new information.

Although a handful of other psychologists occasionally returned to the finding, it was only in the early 2000s that the broader implications of it started to become known

with a pioneering study by Sergio Della Sala at the University of Edinburgh and Nelson Cowan at the University of Missouri.

## Principles for Project Management Success

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You're out to lunch with someone you've known for a few years. Together you've held parties, celebrated birthdays, visited parks and bonded over your mutual love of ice cream. You've even been on holiday together. In all, they've spent quite a lot of money on you – roughly £63,224. The thing is: you can't remember any of it.

From the most dramatic moment in life – the day of your birth – to first steps, first words, first food, right up to nursery school, most of us can't remember anything of our first few years. Even after our precious first memory, the recollections tend to be few and far between until well into our childhood. How come?

This gaping hole in the record of our lives has been frustrating parents and baffling psychologists, neuroscientists and linguists for decades. It was a minor obsession of the father of psychotherapy, Sigmund Freud, who coined the phrase 'infant amnesia' over 100 years ago.

Probing that mental blank throws up some intriguing questions.

## The Mystery of why you can't remember been a baby?

Babies are sponges for new information – so why does it take so long for us to form your first memory?

Did your earliest memories actually happen, or are they simply made up? Can we remember events without the words to describe them? And might it one day be possible to claim your missing memories back?

Babies are sponges, absorbing information at an astonishing rate - yet they fail to form clear memories of events.

Part of the puzzle comes from the fact that babies are, in other ways, sponges for new information, forming 700 new neural connections every second and wielding language-learning skills to make the most accomplished polyglot green with envy. The latest research suggests they begin training their minds before they've even left the womb.

But even as adults, information is lost over time if there's no attempt to retain it. So one explanation is that infant amnesia is simply a result of the natural process of forgetting the things we experience throughout our lives.

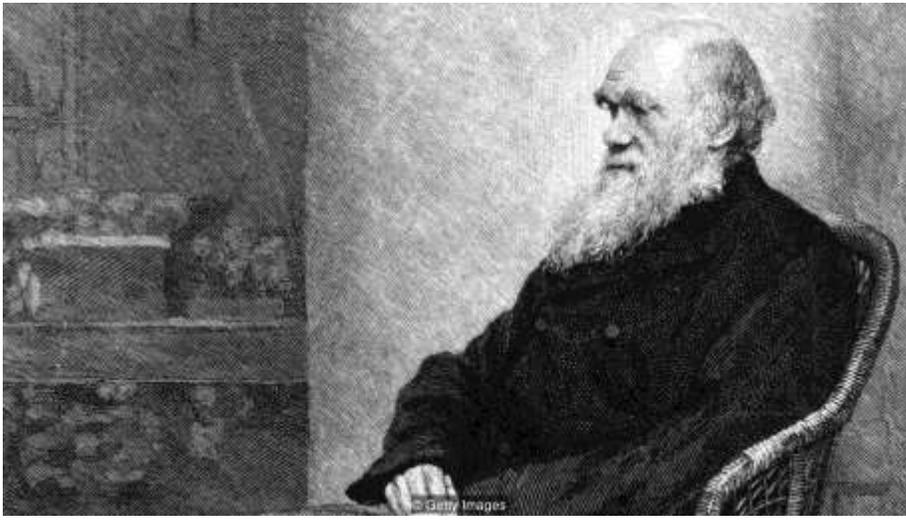
An answer comes from the work of the 19th Century German psychologist

Hermann Ebbinghaus, who conducted a series of pioneering experiments on himself to test the limits of human memory. To ensure his mind was a completely blank slate to begin with, he invented the "nonsense syllable" – a made-up word of random letters, such as "kag" or "slans" – and set to work memorising thousands of them.

His forgetting curve charts the disconcertingly rapid decline of our ability to recall the things we've learnt: left alone, our brains throw away half of all new material within an hour. By Day 30, we've retained about 2-3%.

Crucially, Ebbinghaus discovered that the way we forget is entirely predictable. To find out if babies' memories are any different, all we have to do is compare the charts. When they did the maths in the 1980s, scientists discovered we recall far fewer memories between birth and the age of six or seven than you would expect. Clearly something very different was going on.

Our culture can determine how our memories form and develop.



## Charles Darwin

popularised the view that we had emotional 'fingerprints' from the book:

The Expression of Emotions in Man and Animal

# A new way to look at emotions - and how to

One day at graduate school, one of Lisa Feldman Barrett's colleagues asked her out on a date. She didn't really fancy him, but she had been in the lab all day and felt like a change of scenery, so she agreed to go to the local coffee shop. As they chatted, however, she started to become flushed in the face, her stomach was churning, and her head seemed to whirl. Maybe she was wrong, she thought: perhaps she really did like him. By the time they left, she'd already agreed to go on a second date.

Still feeling somewhat giddy, she

got home, put her keys on the floor, and promptly threw up. It wasn't love, after all; it was flu. She spent the next week in bed.

How could someone mistake the rush of an infection for the fever of love? A psychologist at Northeastern University in Boston, Massachusetts, Barrett has spent her career examining the ways we construct emotions, culminating in a recent book – [How Emotions Are Made](#) – and her experience on that date is just one of many examples that illustrate the ways our feelings can confound us.

Although we may believe strongly that we know how we feel, she shows that the sensations of anger, anxiety, hunger, or illness are not nearly as distinct as we assume – and we may sometimes misinterpret those signals with profound consequences. Fortunately, Barrett's theories also offer us some practical ways to gain control of our feelings, and to live a calmer and more productive life. It's quite a departure from the centuries-old assumption that we display emotion "fingerprints". This theory suggested that each emotion creates a specific combination of facial expression, body language, and other physiological cues.

**Towards total recall**  
**If you are interested in further, low-effort ways to boost your recall, you may benefit from the following strategies:**

**Test yourself. So-called "retrieval practice" – actively forcing yourself to remember information – is far more effective than passive reading.**

**"Space" your studies, leaving a few weeks between the times you revisit material. Indeed, it's often better to wait until you are on the cusp of forgetting the material to avoid "overlearning".**

**Talk to yourself. Simple describing an event cements it in your memory.**

## Due to an unusual illness, Matthew creates false memories

**that seem as vivid as the real thing. He's had to learn to live with a past that is as uncertain as the future..**

The mind doesn't seem to like a blank space, however, and over the course of the recovery, Matthew's memory started creatively filling in the gaps left by this amnesia. He once sent an angry email to the neuropsychiatrist, for instance, asking why he had been asked to leave rehab. "I can assure you I'm not very well at all, there's something very wrong with me," he told them. It was only later that he found out that he had discharged himself – the decision had been completely his own. Yet he had a clear memory that the staff had sent him away.

Discovering this tendency for confabulation was deeply unsettling; it was as if he had discovered his mind was no longer his own. "Your brain is not just a reality-creating machine," Matthew says. "There's a difference between the things you perceive and the things the brain creates for you to understand the world you live in." Often the false memories would be built around a preconceptions of the way an event would have turned out. When he had returned to work, for instance, he had worried that his bosses would not be sympathetic to his difficulties. "I knew my employers were hardnosed business people, quite harsh, very strict with work. So my brain had already put them in a specific box and expected that they were going to react in a certain way."

**Add variety. It can sometimes be beneficial to mix up and rotate the subjects you are studying, a process called "interleaving", rather than studying each one in a single block.**