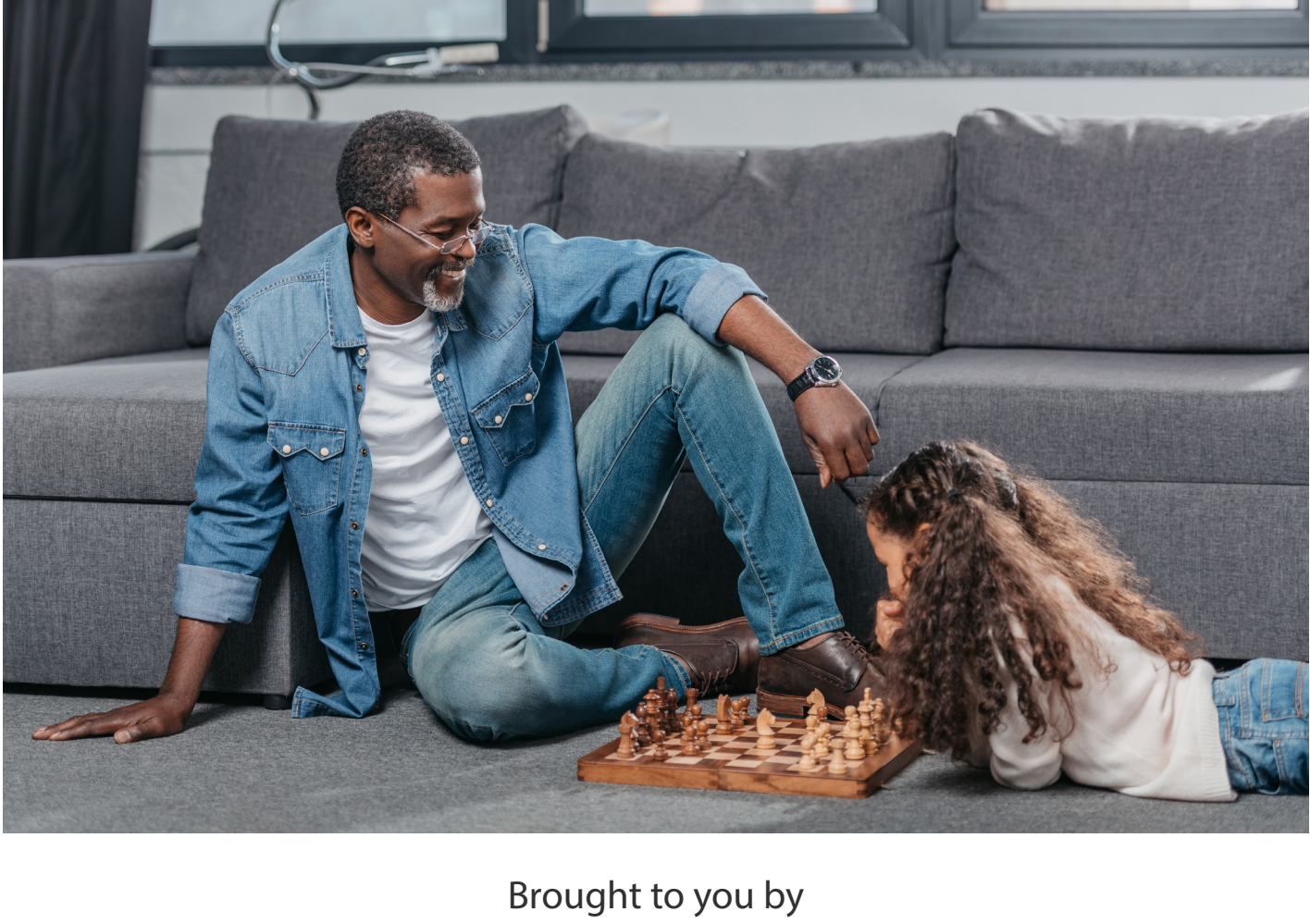


Concentration and Memory



Brought to you by

Bio-Strath®

INTRODUCTION

Everyone experiences occasional trouble with memory, whatever life stage we're at. This is often the fault of poor concentration, which is strongly linked to remembering information. But some straightforward lifestyle changes and mental skill-sharpening can work wonders to boost your powers of recall.

CONTENTS

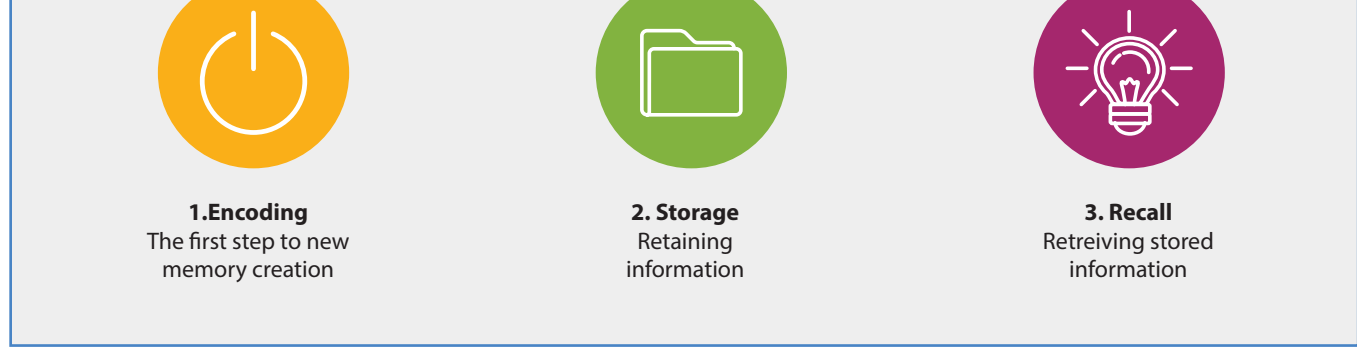
- What is memory?
 - How we remember
 - Why we forget
- How to sharpen focus and enhance memory
- Check your general health
- Tips to boost your powers of recall



WHAT IS MEMORY?

Memory is the mental process of acquiring, storing and recalling information.¹

How we remember



1. Encoding – the first step to new memory creation
Encoding begins with perception via the senses. When you pay attention to a new event or information, your brain “fires up”, ready to create a new memory. The neurons (nerve cells) in your brain become more active and signal to each other. This intensifies the experience and increases the likelihood that a memory will be encoded.

2. Storage – retaining information
This stage happens subconsciously: the brain has a “filter” that organises new information into sensory, short-term, and long-term memories. The filter helps prevent the brain from becoming overloaded with unnecessary information, while retaining what’s useful.

3. Recall – retrieving stored information
Recall is remembering - accessing an event or information from your brain’s “memory bank”. This again activates the brain, reinforcing the same neuronal patterns that occurred with the original event. As your brain recalls where the information is and how to access it, the memory is strengthened.²

Why we forget

Memory problems are commonly associated with aging, but young people - school and college students especially - often experience stress around recalling study material.

While normal aging does lead to gradual changes in thinking and memory skills, people of all ages have trouble remembering at times. **You can take action to improve your memory at any life stage.**

Often, **a memory problem may originate with poor concentration** or organisation: you aren't properly absorbing the information initially, or you aren't processing and storing it well. Your ability to concentrate can vary considerably, and there will be times when you just can't seem to focus.

Or **failure to retrieve the memory might be because of not accessing the memory frequently enough**: the information isn't recalled and the brain pathway to that memory isn't strengthened. An exam is usually harder when a student hasn't put much time into recalling - revising - the memories of their lectures!
Identifying the factors that are dulling your focus, and honing skills to improve your concentration and recall, will help improve your memory.^{3,4}



HOW TO SHARPEN FOCUS AND ENHANCE MEMORY

Check your general health

If you're concerned about poor concentration and memory, it's a good idea to check in with your doctor - especially if you're experiencing anxiety or depression, or other medical conditions that could be an underlying cause. Medications e.g. antihistamines, overactive bladder drugs and painkillers may also be culprits.^{3,4,5}

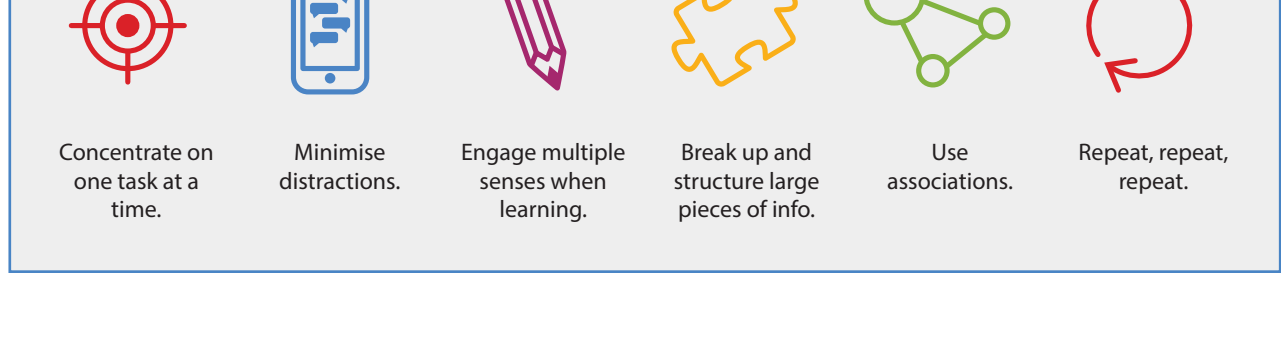
Your lifestyle may need a positive overhaul:

- Get heart-healthy. What's good for the circulatory system is good for the brain i.e. regular exercise and a diet rich in fruits, vegetables, whole grains, and lean proteins, and low in saturated fat, sugar and salt. Ask your doctor, dietician or pharmacist about a good multivitamin supplement to ensure you “feed your brain” with optimal nutrients.
- Get enough sleep. Concentration is better when you're well rested, and therefore so is input of new information, and memory consolidation and recall.
- Limit caffeine intake. While moderate caffeine may help short-term focus, excessive amounts can make you jittery and sleep deprived. Kids under 12 should skip caffeine, and adolescents should limit daily intake to 100 mg (around 1 cup coffee). Excessive caffeine can disturb teenagers' concentration and sleep, which may disrupt formation of new neural connections.
- Manage stress levels. Chronic, high levels of stress hormones may have an inflammatory effect on brain cells, hindering concentration and thus memory formation.
- Keep mentally active. The most potent kinds of “brain gym” are those that challenge you and take you out of your mental comfort zone, such as learning a new language.
- Stay social. Research has found that octogenarians with active social lives (e.g. visiting friends and family, volunteering) are more likely to have memory skills comparable to people two or three decades younger.^{3,6,7}



TIPS TO BOOST YOUR POWERS OF RECALL

By tweaking certain behaviours and habits, you can improve your concentration, which in turn helps you encode, store and retrieve information more effectively:



- Concentrate on one task at a time. If you try to focus on multiple tasks or information sources, you may end up focusing poorly on all of them. If input is poor, the resulting output - memory retrieval - will be poor too. It helps if you're fully engaged with the task, so practise looking for an interesting angle in material you find dull.^{3,4}
- Minimise distractions while concentrating. Create a calm, quiet environment and avoid interruptions. Don't answer the phone; try putting up a “Do Not Disturb” sign. Don't have social media platforms open while you're working. Every time you switch tasks because of a distraction - to check your Facebook page, let's say - your focus slips. However, don't overtax yourself so you start to feel fatigued: take short breaks every 30 minutes or so.
- Engage multiple senses when learning: the more ways you process new information, the more likely you'll remember it. Take notes while listening in class; read the occasional passage aloud to yourself. Visualise and verbalise information so you can more easily scan your memory for it later.
- Break up and structure large pieces of info. E.g. to remember a phone number, try grouping the first three digits, the middle three, and the last four.
- Use associations. Try using word associations, or relating new information to something that's already in your memory.
- Repeat, repeat, repeat new information to yourself to strengthen those memory pathways.^{6,7,8}



References:

1. Very Well Mind. What is memory and how does it work? 2020, May 15. Available at: <https://www.verywellmind.com/what-is-memory-2795006> Retrieved 22 July 2021

2. The Human Memory. Memory Processes. 2020, November 25. Available at: <https://human-memory.net/memory-processes/> Retrieved 22 July 2021

3. Harvard Health Publishing. 4 ways to improve focus and memory. 2021, February 1. Available at: <https://www.health.harvard.edu/mind-and-mood/4-ways-to-improve-focus-and-memory> Retrieved 9 July 2021

4. Cleveland Clinic. Why improving your concentration helps your memory. 2019, October 31. Available at: <https://health.clevelandclinic.org/why-improving-your-concentration-helps-your-memory/> Retrieved 9 July 2021

5. Psychology Today. How to Improve Your Concentration and Memory. Revised 2020, May 3. Available at: <https://www.psychologytoday.com/us/blog/hide-and-seek/201301/how-improve-your-concentration-and-memory> Retrieved 9 July 2021

6. Harvard Health Publishing. Memory. Available at: <https://www.health.harvard.edu/topics/memory> Retrieved 9 July 2021

7. The Guardian. How physical exercise makes your brain work better. 2016, June 18. Available at: <https://amp.theguardian.com/education/2016/jun/18/how-physical-exercise-makes-your-brain-work-better> Retrieved 9 July 2021

8. The Guardian. The lost art of concentration: being distracted in a digital world. 2018 October 14 Available at: <https://amp.theguardian.com/lifeandstyle/2018/oct/14/the-lost-art-of-concentration-being-distracted-in-a-digital-world> Retrieved 9 July 2021