Maximising your thinking and memory abilities

Normal ageing

What happens to our thinking and memory?

About this handout

This handout is for anyone who is interested in what happens to thinking and memory abilities as we age.

People are often critical of their ability to remember and to think efficiently. It is true that some aspects of our thinking and memory become less efficient with age. This is a normal part of ageing. Other kinds of thinking and memory may actually improve as we get older. A lot of variation exists between people—some retain an excellent memory as they get older.

How do our brains physically change as we get older?

- Brains reach their maximum size during our early 20s then very slowly decline in volume over time (at a rate of about 2% per year)
- We all experience some general shrinkage of brain cells (neurons) and reduced connections between them as we get older
- The availability of some brain chemicals and blood flow may lessen.

"Use it or lose it"

- There is evidence to suggest that the brain can grow new neurons and new connections throughout life
- This new growth appears to depend on how physically, socially and mentally active a person is throughout their life
- It's important not to lose confidence and "give up" too early. Sometimes the use of simple strategies, such as regular use of a diary or finding ways to reduce stress levels, can help to improve daily function.

How are thinking and memory affected by the normal ageing process?

- We are all likely to notice some mild changes to our memory and thinking as a normal part of the ageing process:
  - Some general slowing in our thought processes and reaction times
  - A decrease in the efficiency of our short-term memory and capacity to retrieve long-term memories
  - Difficulty with thinking of the correct name for objects or people.
- Despite these mild changes, healthy older adults usually remain capable of living independently in their own homes throughout their lives. They retain the ability to shop alone, manage finances, perform basic household duties, and monitor appropriate social behaviours.

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Key Points

Some aspects of our thinking and memory tend to decline as we get older (and some continue to improve!)

Healthy older adults will remain capable of living independently throughout their lives

Keeping mentally, socially and physically active as well as using some basic strategies may help to maintain our memory and thinking abilities as we age

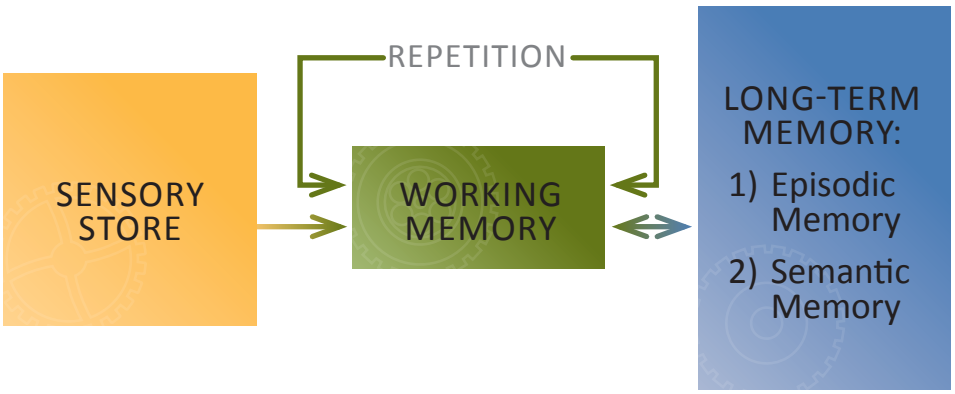
- The subtle cognitive changes associated with the normal ageing process, particularly as a person enters their 70s and 80s, may also have an impact on more complex or challenging activities. For example, an older person may find they are less efficient at writing; they need extra time or assistance in understanding complex financial or legal issues or learning new things (e.g., how to use the internet).
- In some cases, noticeable changes (i.e., the person was previously very competent using the internet) may signal the early stages of a brain illness. If you are worried, this is the time to talk to your general practitioner and organise a formal assessment.

How does our memory change?

It's obvious that memory is one important ability that many people worry about as they get older. We rely on memory to carry out even the most basic activities of daily life (e.g., remembering what to buy at the shop). Memory also adds a great deal of pleasure to our lives. We often have enjoyable times with family and friends recalling past holidays, interesting movies or old jokes.

However, it's important to realise that memory is a complex activity made up of several parts. As we get older some aspects of our memory

An overview of important memory stores and processes



Normal ageing:
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SENSORY INFORMATION STORES

decline, some stay the same, and some improve.

- Information first enters our system through one of the sensory stores
- There is one store for each sensory system we have (vision, hearing, taste, touch and smell)
- We register information into a sensory store without being fully aware of it, even if we are not paying attention! For instance, whether or not you are really paying attention to the information in this handout, the words are entering your visual sensory store.

WORKING MEMORY

- Is the conscious portion of your mind and the part that actively processes information
- Has a very small storage capacity: it only holds between 5 and 9 items
- Pays attention to some things and ignores others. For example, at a party we tune into the meaning of one conversation at a time. However, if our name is said in the background, we will immediately switch to attending to the new conversation
- Is used to rehearse and "work" on information in order to transfer it into long-term memory
- **Older adults** are not as good as younger adults at ignoring irrelevant information and tend to get more easily distracted
- **Older adults** tend to process information more slowly. This can affect ability to process information efficiently in working memory
- **BUT!** organising information, or visualising it in some way, helps us to process it more deeply and to transfer it to our long-term memory. In this way we can use strategies to improve our working memory and remember more information.

LONG-TERM MEMORY

- Information that is processed will be transferred to long-term memory, where it can last a lifetime. Several kinds of long-term memory are recognised:
  - **Episodic memory:** personally experienced events or the "what", "where" and "when" of our daily lives
  - **Semantic memory:** knowledge of the world.
- **Older adults** tend to have difficulty with episodic memory. In particular, even though the memories are often still there, it can be more difficult for an older adult to find and retrieve those memories without help. BUT! hints or reminders can often assist an older person to find the memory. For instance, "back-tracking" over a series of steps can help recall, for example, where we put our keys.
- **And on a positive note,** older adults are often wiser than younger adults! They may have a larger vocabulary and greater knowledge about the world than younger adults possess. Many people continue to increase semantic memory throughout life.

Further information on ageing:

Alzheimer's Australia

(www.alzheimers.org.au) has developed a set of information materials called "Mind your Mind", designed to inform Australians about ways to reduce their risk of developing dementia.

Australian Psychological Society

(www.psychology.org,au) has developed some resources about ageing, including a handout "Ageing Positively".

Council on the Ageing

(www.cota.org.au) is an organisation that aims to protect and promote the wellbeing of older Australians.

Seniors Australia

(www.seniors.gov.au, the aged and community care infoline: 1800 500 853) is a service provided by the Australian Government with information on a range of topics including government services, health, finances, work, volunteering, lifestyle, events and discussion forums.

AIPCA Australian Institute for Primary Care & Ageing
LA TROBE UNIVERSITY
Southern Health
THE Wicking TRUST JO & JR Wicking Trust