Welcome to today's Webinar

Your Presenter is: Dr Ben Harris
Your Facilitator is: Andrea Salmon

Acknowledgement

We acknowledge and pay respect to the traditional custodians past and present on whose lands we meet today.

We acknowledge the deep feelings of attachment and the relationship of Aboriginal people to country and respect the cultural authority of the elders in each community.
This presentation has been prepared and is presented by an independent expert.

The views presented are not necessarily the views of Multiple Sclerosis Limited.

Individuals should seek further advice regarding relevance for their situation.

Improving your memory

Ben Harris
Clinical Neuropsychologist
What is memory?

• A complex set of interlinked cognitive (i.e., thinking) processes
• Allows a person to retain and recall previously experienced sensations, information and ideas
• Much research in psychology and related fields over the past several decades has led to understanding of the cognitive and neurological processes underlying memory
• Understanding these ideas can allow comprehension of why problems emerge in MS and how best to manage these problems

Different types of memory

• A long-standing distinction between episodic and semantic memory
• Episodic:
  – everyday memory, e.g., what you ate for dinner last night, who was there, what you talked about
  – refers to unique personal episodes that occurred at a particular time and place
• Semantic:
  – our catalogue of knowledge about things, and the relationships between them, e.g., words, objects, places, people
  – immense, complex and built up over a lifetime
MS neuronal changes

Inflammation leads to demyelination

Demyelination leads to transmission problems within the brain

White matter

• The way in which information is taken from one neuron to another
• Critical to effective communication between regions of the brain
• Is white because axons are coated in a fatty substance called ‘myelin’
• ‘White matter tracts’ are made up of huge numbers of axons travelling together
Episodic memory

Semantic memory
MS and memory

- Mild MS-related pathology affects white matter integrity
- Preservation of cortical regions central to the creation and longer-term storage of episodic and semantic information
- Memory problems relate to processing efficiency
- Important to understand cognitive processes underlying memory

3-stage model of episodic memory

- Sensory input leads to sensory memory, where unattended information is lost.
- Attention leads to short-term memory, where unrehearsed information is lost.
- Encoding leads to long-term memory, where some information may be lost over time.
Processing Speed

• Slowed of processing can be associated with:
  – Difficulty keeping up with conversations
  – Difficulty understanding instructions
  – Difficulty learning new tasks
  – Needing longer to complete tasks
  – Inefficient memory for new information

Attention

• As with reduced processing speed, problems with attention result in:
  ◦ Difficulty focusing on conversations
  ◦ Difficulty filtering out unwanted information
  ◦ Difficulty with ‘prospective’ memory, i.e. remembering to remember something later on
  ◦ Inefficient memory for new information
Executive Functions

- ‘Executive function’ is an umbrella term that includes:
  - Problem-solving
  - Planning and organising
  - Initiating behaviour
  - Self-monitoring performance
  - Self-correcting and thinking flexibly
  - Reflecting
Executive functions

• In relation to memory, executive problems impact by:
  – Self-distraction
  – Focusing on less relevant information
  – Confusing the source of information
  – Inefficient retrieval

• Impact of executive problems seen at all 3 stages of episodic memory formation

How is memory measured?

• Clinical history:
  – Time course of onset
  – Situational factors: where, when, consistency
  – Effect of stress/mood
  – Response to prompting
How is memory measured?

- Story passages
  - Robert Miller was driving a 10-tonne truck down a highway at night in the Victorian Mallee, carrying wheat to Geelong, when his axle broke. His truck skidded off the road, into a ditch. He was thrown against the dashboard and was badly shaken. There was no traffic and he doubted that help would come. Just then his two-way radio buzzed. He quickly answered, “This is Grasshopper.”
Rationale for using strategies

• Presently there are no medications that have been shown to improve cognition in MS
• Currently no evidence that ‘brain training’ programs provide benefits to everyday cognitive functioning in people with MS
• No evidence to support idea that memory is equivalent to a mental muscle that can be strengthened by memory drills

Rationale for using strategies

• Using strategies will not make your memory or other cognitive processes worse
• By contrast, effective use of strategies generally results in better organisation, so available memory resources are used more efficiently
• MS is a disease of the central nervous system that causes cognitive change for many people, so adoption of strategies is the most effective way to improve functioning
General approach to cognitive strategies

• Best to develop an individualised approach which depends on:
  – the strength and types of cognitive problem being experienced
  – what the individual is trying to achieve
• ‘Internal’ memory strategies include making up rhymes and mnemonics but generally have limited usefulness because they are mentally demanding to put into practice

General approach to cognitive strategies

• Better off using ‘external’ memory strategies, i.e. memory aids, written systems, etc.
• The best strategies will be ones that make sense to you and are designed to help with specific problems being experienced
• Most people without any identified memory problems use specific strategies (e.g. diary, shopping list)
Targeting strategies

• Can be difficult to know which strategies to use without knowing a person’s individual cognitive strengths and weaknesses
• Role of neuropsychological assessment to establish this pattern can allow for more targeted management
• Certain cognitive problems are more prevalent in MS so will be the focus today

Memory strategies

• When considering strategies to support memory, the following is important:
  – strategies need to be quick and easy to use
  – strategies need to apply directly to the task or problem they are meant to help
  – where possible, strategies should be consistent with habits a person already has
  – the person needs to be committed and motivated to use the strategies
  – it may be necessary to involve family members or co-workers, at least initially
Memory strategies

• Remembering what people say:
  – this information is easy to forget because it is often rapid and you may be distracted or tired
  – keep a notepad by the phone at home or in a central location at home if you use a mobile
  – when out, carry a notebook in your purse or pocket
  – when a conversation has occurred, write down a few brief points or key words to jog your memory later on
  – for more complex or lengthy conversations, consider using a dictaphone as back up for written notes

Memory strategies

• Remembering what needs to be done:
  – Need to select a system that meets your needs
  – Calendar for upcoming events and appointments, kept in a central location and all family members encouraged to write events on
  – Ensure that calendar format allows enough room to include required information
Memory strategies

- Remembering what needs to be done:
- Use of a paper diary – updated regularly and taken everywhere

Contains times for events and a space for additional notes

Memory strategies

- Remembering what needs to be done:
- Electronic diaries – have the advantage of inbuilt alarms
Memory strategies

- Remembering what needs to be done:
- Whiteboard

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Memory strategies

- Whiteboard
- Be careful of clutter!
Memory strategies

• Remembering what needs to be done:
  – it is better to use a simple, well-organised system
  – using multiple notebooks, diaries, calendars create opportunities for error
  – need to develop a rigid habit of checking the memory system in a regular fashion, preferably first thing in morning and last thing at night (use of alarm to prompt)
  – consistent information transfer between systems, e.g. from notebook to diary

Memory strategies

• Remembering what to buy/what to take:
  – notes can be a good way to prompt your memory quickly
  – leave Post-it notes in a prominent position (e.g. the inside of the front door) to remind you which items to take when you leave
  – if you need to take something with you the following day, leave it next to the front door or on the seat of your car
Memory strategies

• Remembering what to buy/what to take:

  Shopping list
  - carrots
  - beans
  - pizza
  - ham
  - bacon
  - beef
  - milk
  - cheese
  - bread
  - jam
  - spaghetti
  - muesli
  - cornflakes
  - flour
  - chocolate

  Shopping lists:
  • Prominent position in kitchen
  • Immediately add items as run out
  • Group items by category
  • Cross off items in the shop
  • Pre-printed computerised list of regular items
  • Consider online shopping

Memory strategies

• Remembering where things are:
  – people often spend time and energy looking for things, e.g. glasses
  – try and reduce clutter on surfaces
  – have a single place (e.g. a dish) where you routinely deposit items (e.g. keys, wallet, phone) upon returning home
  – once a system is in place, be diligent about returning items to where they belong – developing a consistent habit is important
Accessing help from MSA

• If changes to cognition seem to be impacting important areas in your life, contact MS Connect about options for assessment and assistance
• Occupational therapists are skilled at helping implement strategies that can improve a person’s functioning
• Psychological assistance is available in the community

Neuropsychological Assessment/Intervention

• Role of a neuropsychologist is to:
  – assess cognition and behaviour in a sensitive and standardised way
  – interpret the results in terms of an individual’s strengths and weaknesses
  – use this pattern of results to help work out strategies to assist with activities in daily life that are being experienced as difficult