



Cognition it is more than just memory

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Testing your skills....



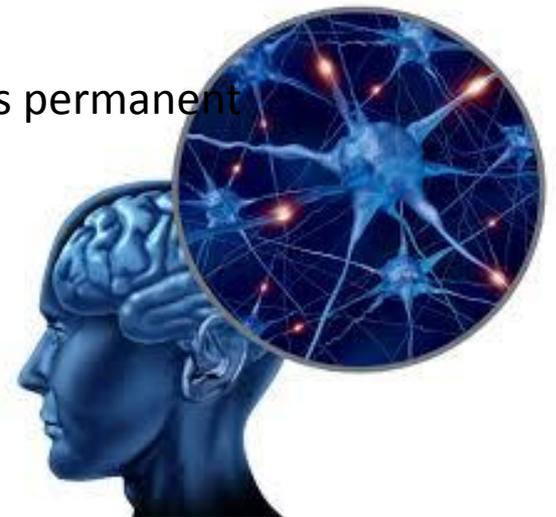
Session contents...



- General overview of cognition
- Why cognition is so important
- What it might look like
- OT assessments – focus on occupational performance
- How OT's aim to improve cognition
- Cognitive deficits you may see
- Simple strategies to support patient's cognitive rehabilitation

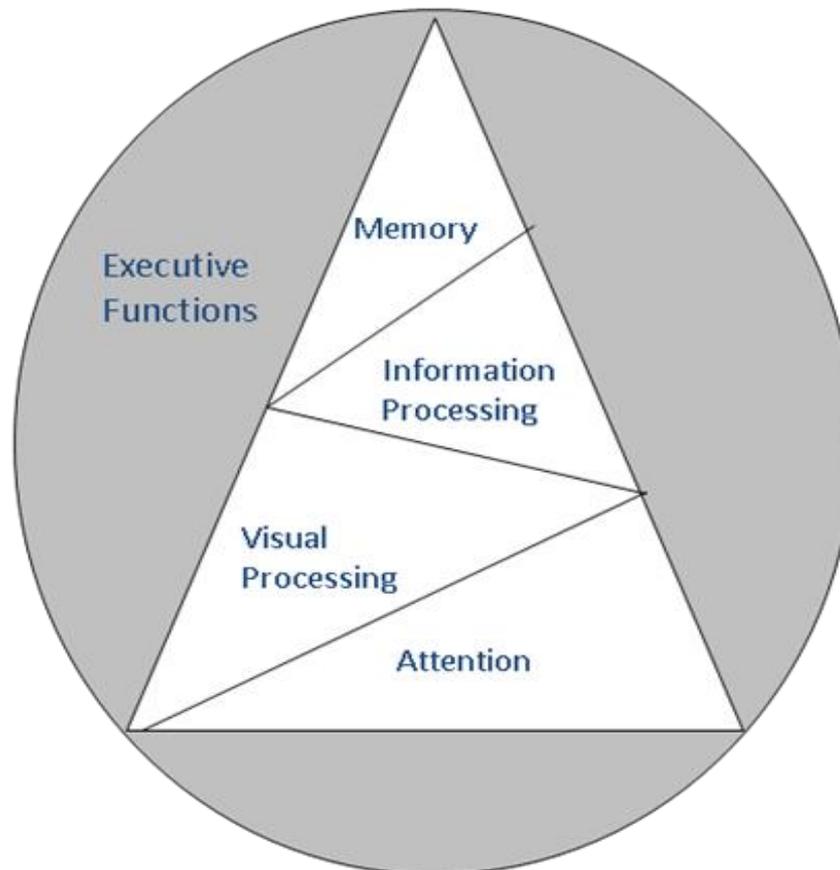
Why we focus on cognition during rehabilitation?

- Cognitive difficulties have major impact on QOL and participation goals, mood.
- Cognition problems very common post stroke – 3 out of 4 stroke survivors will have impairment in at least one domain of cognitive impairment (Stroke Foundation, 2017)
- Cognition CAN be improved – systematic review examined 13 RCT's, medium size effect for intervention (memory) (Das Neir et al, 2016)
- No part of the brain's function is independent – we know motor and cognitive functions are integrated
- All parts of the brain talk to each other
- Plasticity/reorganisation IS possible!
- You can improve brain function, however brain damage is permanent
- Relationship between cognition, mood and fatigue



Cognitive hierarchy

- Start from bottom up
- Don't just dive in
- Awareness (part of exec function) of deficits is closely linked to cognitive improvement in other areas as patient must identify need for therapy and strategies



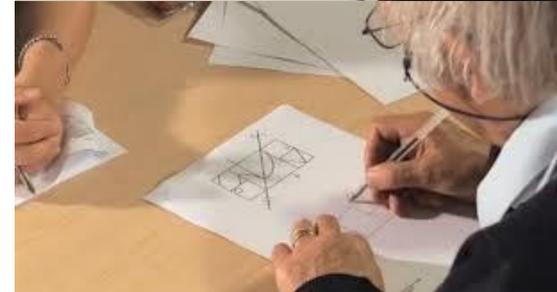
How OT's assess cognition

- Stroke Foundation Clinical Guidelines
- Cognitive screens – MMSE has poor evidence for use in stroke (Dong et al, 2010)
- MOCA is more sensitive to screening of cognitive deficits in stroke identified in systematic review in 2015 on cognitive screening in stroke (Burton and Tyson, 2015; Webb et al, 2014)
- As OT's we are interested in impact on occupations
- Through formal or informal assessments
- Case Example (MET-R)



How we aim to improve cognition?

- Cognitive Rehabilitation Therapy – 4 components. **DEPENDENT ON SEVERITY OF IMPAIRMENT** – how to target treatment
1. Education or awareness– strengths, weaknesses, education is power
 2. Remedial or ‘process’ training
 3. Compensation
 4. Generalisation – adaption to everyday tasks



1. Education and awareness

- Start early – inpatient rehabilitation
- Conversation with patient to build goals
- **MOST IMPORTANT** aspect
- Written and verbal
- Families – importance of realistic and specific feedback



2. Remedial or process training



- Difficult to start this process if not aware of cognitive difficulties.
- IF severe impairment needs to be task specific, focus on procedural learning, e.g. making a cup of tea.
- IF mild to moderate impairment needs a strategic approach that are broad and aimed more at a specific domain (e.g. memory, internal strategies such as mnemonics, semantic clustering, visual imagery)

3. Compensation

- Help a person bypass a difficulty
- Goals are around patient learning to be independent with use of an aid. Needs external guidance, e.g. independently take daily medications with Webster pack and calendar dot system
- Patient learns to perform specific routine and action sequences procedurally. Practice tasks every day in same way.
- Does take a lot of practice if learning a new strategy.



4. Generalisation

- Apply the cognitive strategy or skill to other tasks
- Start with simple tasks move to more complex and challenging
- Sometimes its about understanding that when we do a task in OT it may be about using that activity to work on the cognitive strategy or skill

Attention

- “Underlies all other cognitive skills
– the ‘cornerstone’



What might you see?

- ✓ Low levels of arousal or drowsiness is often present during structured standardized ax or during functional tasks.
- ✓ Distractibility
- ✓ Problems completing 2 or more tasks simultaneously

Attention – possible strategies



Drowsiness

- Managing their fatigue and poor sustained attention with regular rest breaks
- Planning your session times/interventions for when they are most alert i.e. am vs. pm.
- Sit upright and with good posture
- Pick an enjoyable, usual occupation – e.g. knitting, music

Distractibility

- OTs will often aim to complete assessments and therapy in a quiet environment and not by the bedside (if able)
- May require frequent prompts/cues to maintain attention
- Certain environmental distractions can be minimised i.e. turning off TV when patient is focusing on eating tasks
- Provide education to the patient re: how their attention is affecting performance
- Remember the hospital will make this MUCH worse

Information processing – what you may see

Information processing – 3 main components:

- Speed – HOW FAST
- Capacity - AMOUNT
- Control – WHATS TAKEN IN



What might you see?

- Slow reaction times, slow speed of speech, or not reacting at all to questions
- Ability to engage but then they might become suddenly overwhelmed, performance may deteriorate quickly, they may fall asleep or exhibit a change in behavior i.e. anger, frustration etc...
- May demonstrate poor awareness of deficits due to not being able to process educational information

Information processing – possible strategies



Reduced speed

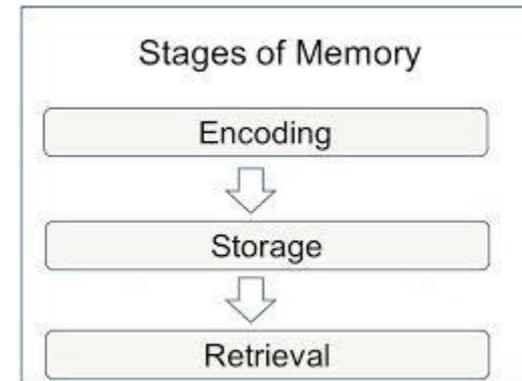
- Allow extra time for responses after you have given an instruction,
- Grade activities to allow successful independent completion of components
- Provide education to loved ones relating to the extra time needed to respond to promote independence.
- Provide education to pts re: speed of response and aim to reduce the time needed to complete tasks

Reduced capacity

- Adjust session lengths and terminate at the first sign of developing overload
- Education to family and ward staff is essential to manage capacity issues (length of capacity, rests and response to overload)
- Regular rest breaks with no stimuli
- Write things down to allow patient to have a record to refer back to
- Stress management and mindfulness

Memory – what you may see

- Often labeled with memory issues when it is a deficit in another cognitive domain
- The process of storing memories involves 5x stages – attention, encoding, storage, consolidation and retrieval
- The area of the brain and stage memory making will indicate the extent of impairment
- Despite their full attention and then consolidation/repetition of the information, the patient is still unable to recall or recognize details learnt
- Procedural memory is often spared i.e. getting dressed, cooking a meal
- Recent episodic memory is often first area of memory loss to become apparent (i.e. going upstairs and not knowing why) but remote (LT) episodic memory is more durable i.e. birthdays, weddings, childhood events.
- Prospective memory issues are more commonly seen and the patient may have difficulty with remembering to take their phone and wallet out with them, forgetful of appointments, forgetting therapy sessions



Memory Test.... Got you now 😊 Who was paying attention

- What are the 5 stages of memory?



Memory – possible strategies

- When deciding on strategies often ones that were used pre-morbidly are more effective
- Repetition and rehearsal

ATTENTION

- ✓ Reduce distractions
- ✓ Simplify task

ENCODING

- ✓ Internal strategies – mnemonics, visual imagery
- ✓ Make meaningful

STORAGE

- ✓ External strategies – written and verbal prompts
- ✓ Compensatory aids – diaries, calendars, notebooks

CONSOLIDATION

- ✓ Rehearsal and practice

RECALL

- ✓ Graded cues and prompts



AWARENESS ALLOWS
US GET OUTSIDE OF
OUR MIND AND
OBSERVE IT IN
ACTION. - DAN BRULE

QuotePixel.com

Executive function – what you may see

Executive functions – Conductor of the orchestra. Skills which combine to set goals and make choices in novel situations. Initiation and termination, planning, organization, adaption and flexibility.

What might you see?

- The person is described as odd or not quite right
- The patient may be able to describe how they would complete a complex tasks but actual performance is often impaired, (don't be fooled!)
- Dis-inhibition, rushing, saying what they think, sexually inappropriate
- Not initiating activities such as PADL management, eating/drinking, going to the toilet (even though they can tell you they need to go)

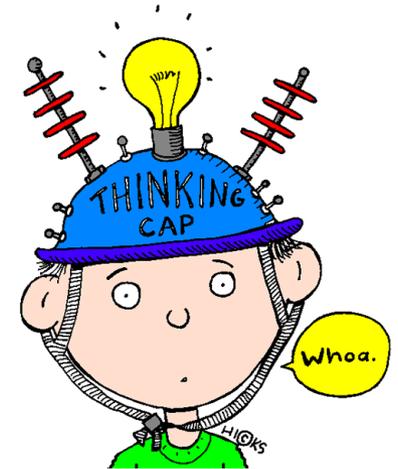
Executive function – what you may see cont...

- Mental inflexibility i.e. concrete thinking (issues problem solving, internalizing education, new strategies) and un-realistic goal setting
- Dis-organized approach to activities, returning on multiple occasions to collect items, messy work space, using multiple tools for 1 job. We have to form strategies for every novel situation we are in
- Unusual answers to judgment questions i.e. I don't drive anyway, the child shouldn't be by the lake, its not my problem
- Self-monitoring may be impaired i.e. inability to follow a rule and then the pt cannot adapt even when prompted that they are incorrect. Think of an unusual use for a newspaper?
- Emotional/behavior control

Awareness – what you may see

- ‘Knowing about what you know’
- Loss of awareness = inability to detect errors in performance or anticipate problems and prepare strategies
- Levels of awareness include
 - 1) Intellectual awareness
 - 2) Emergent awareness
 - 3) Anticipatory awareness

Levels of awareness can vary between cognition, physical abilities and speech



Awareness – intervention



- Education, education, education
- Each session try to revisit the education you have provided, set new goals for the session and ask the client to report how they think they will do. Help them to make realistic suggestions using previous sessions as evidence as your guidance
- i.e. 'do you recall when you burnt the toast, this was due to xyz and so we need to work on helping you to overcome this problem, so today we will do abc. How do you think you will manage today?'
- Review at end of the session, were the goals met? discuss difficulties, how things could be approached differently next time?
- Remember that without awareness the patient won't see the need to learn strategies and therefore will not carry these strategies into daily life

Testing your skills....



References

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Questions

- Welcome to email

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