

Memory, Attention,
Concentration
**In Recovery from Brain Injury
and in People with I/DD**

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A.M.B.E.R. clinic
Albuquerque Multidisciplinary Behavioral Evaluation for Recovery and Resiliency

Alya Reeve, MD, MPH
University Of New Mexico Health Sciences Center
Professor of Psychiatry, Neurology & Pediatrics
PI, Continuum of Care

Overview

- **Starting with definitions**
- **Common challenges & Examination techniques**
- **Expert resources**
 - **neuropsychology**
 - **neuroradiology**
 - **geriatric psychiatry**

Definitions

- **Memory**
 - **the mental capacity or faculty of retaining and reviving facts, events, impressions, etc.; or of recalling or recognizing previous experiences**

Definitions

- **Working memory (seconds)**
 - Current contents of a person's consciousness
 - pre-frontal cortex, basal ganglia, left posterior parietal cortex (verbal) right post parietal ctx (visuo-spatial)

Definitions

- **Declarative (explicit memory)**
 - **Short-term**
 - **recently encoded and retrieved**
 - **hippocampus; medial temporal structures**
 - **Long-term**
 - **established memory**
 - **neocortex**

Definitions

- **Procedural (implicit memory)**
 - **memory for the performance of particular types of action acquired by trial and error**
 - **sequencing, navigation, probabilistic categorization**
 - **basal ganglia, cerebellum, prefrontal cortex, premotor cortex, post. Broca's**

Definitions

- **Attention**

- **a concentration of the mind on a single object or thought, especially one preferentially selected from a complex (object), with a view to limiting or clarifying receptivity by narrowing the range of stimuli**

Definitions

- **Disorders of attention**
 - **can mimic other sensory deficits**
 - **impede encoding accuracy**
 - **contribute to poor decisions; skew ability to prioritize effectively**

Definitions

- **Concentration**
 - **exclusive attention to one object; close mental application**
 - **sustained attention**

Changes over time

- **Examination – repeated**
 - **orientation: establish baseline**
 - person, date, situation, familiar people...
 - **memory: 3/3 objects; address; presidents; personal history**
 - **concentration: serial 7's, 3's, sustained task**
 - **attention: following instructions, responding to requests, engaged activities**

Changes over time

- **History**
 - **Activities**
 - changes in participation
 - **Initiation; independence**
 - **Misplacing objects; confusion; irritability in slightly new settings**

Considering dementia

- **Patient**
 - changes in behavior
- **Family**
 - trend in family
 - change in personality noted
- **Caregivers**
 - nursing home
 - obstreperous-ness

Expert Resources

- **Neuropsychology**
- **Neuroradiology**
- **Dementia Neurology**
- **Geriatric Psychiatry**

Brain Injury

- **Discontinuity of personal history and sense of self**
- **When STM impaired, develop PM reinforcers (“productive habits”)**
- **Differentiate attention – depression – apathy**
 - **cannot follow through if attention is not sustained**

I/DD

- **Differential strengths/weaknesses**
 - verbal – visuo-spatial
 - high social function; low cognitive skills
- **Sensory deficits**
 - deafness
 - processing/motor speed
- **Premature dementia ~ 10 years before “normal” age-matched population**

Summary

- **Bedside tools most reliable**
- **Repeat examination should be relevant to skill set**
- **Direct therapeutic strategies to enhance what is working**
 - **recovery – TBI**
 - **ongoing learning**