



Memory and ADD

Clearing the cobwebs of your mind

Truth time re: memory



- What memory ISN'T:
 - A file cabinet from which to retrieve info
 - A video recording of what you experienced
 - Accurate
 - Dependable
 - Consistent
 - A measure of intelligence
 - Uniform from person to person

Kinds of memory



- Short term memory (includes working memory)
 - Transient
 - Brief
 - 5-9 things at a time maximum
 - Woman who remembered everything could not set priorities, overwhelmed with minutiae
 - Easily interrupted – quick to lose fleeting data via interruptions
 - Brain designed to “let go” of RAM

Kinds of memory (cont.)



- Long term memory
 - Almost unlimited brain storage capacity
 - Names, addresses, ride a bike, routines, algebra (if you learned it!), first bra, 911, children
 - You can always learn and retain something new, no matter what age
 - More stable than short term memories, but not infallible
 - Not all long term memories last forever
 - Emotional hook cements them more firmly

Two ‘brands” of long term



- **Declarative** memories – make an effort to remember these memories
 - 1. Episodic
 - They’re all about time & space: events
 - 2. Semantic
 - Just the facts ma’am: addition, mother’s name – timing not crucial

- **Procedural** memories
 - Just DO it! Bikes, brushing your teeth, playing the piano – seldom lose these memories

Making memories



- Memories are stored all over the brain
 - Neurons (our friends) specialize
 - Language – mostly in left and frontal cortex, for instance
 - Sight – mostly in occipital lobes
- Little snippets stored here and there make it easier for memories to be disrupted
- Smell of fresh peaches – stored in olfactory section, plus taste of peach pie, plus action of picking peaches, plus....

How you store it is how you get it in the first place



- Acquiring memories
 - Something important – deeply embedded
 - If you're distracted, easier to forget it
 - (as we get older, we are more easily distracted by background noises, etc.)
 - Lots of things happening at once, but we focus on ONE AT A TIME, ONE AT A TIME, ONE AT A TIME – no such thing as multi-tasking according to Dr. William Dodson
 - “Multi-tasking” means quickly shifting focus

Finding a home in your brain



- Consolidating memories
 - You create new synapses to embed the memories- yay!
 - Short term into long term depends on your point of reference – do you have history with this topic e.g. peaches?

- Declarative memories – names and faces
 - Impacted by emotion AND a good night's sleep! (the amygdala likes sleep!)
 - REM sleep important for consolidation of declarative memories

More consolidation



- Procedural memories stored differently
 - Stored in brain areas that are LESS likely to be affected by memory disorders like Alzheimer's disease.
 - Alzheimer's affects the hippocampus (names, language, faces) but often skips the procedural memories until near the end.
 - Aging affects declarative memories more than declarative memories

Pulling it out of the depths



- Your brain must reactivate the pattern you created when you stored the memory
 - Similar memories sometimes get confused with the intentioned memory, blocking it from retrieval – grrr!
 - Take a few seconds, relax and see if it comes to you – panic makes it worse
 - The more often you recall information, the easier it is to recall again (use it or lose it really is true)

Memories actually CHANGE



- The act of retrieving the memory makes it vulnerable to influences that change the original memory
- Other data in your brain, other related memories, feelings, can make you believe something happened when it did NOT (therapists and implanted memories in children, etc. can happen)
- As we get older, not only do we have more trouble storing new memories but also at retrieving old memories accurately...grrr

The ADD connection



- Working memory is particularly affected in people with ADD
- Some researchers believe that working memory is related to executive function – maintaining focus even with distractions
- Test your working memory via list of 15 words shown at 1 second interval – how many can you recall – write them down
<http://bfc.positscience.com/eval/wlr.php>
- The n-back interval test – keep something in memory for a second or two while being interrupted by other stimuli
<http://cognitivefun.net/test/4>

What's affected?



- Reading is a complex task that requires working memory
 - Retain what was just read to make sense of what is being read now
 - Short articles often easier than long books for ADD
 - Books with visual interest (pictures) often easier than books with text only
 - “Breathing space” on the page also makes it easier to “dig into” pages that need to be read

What's affected part 2



- Misplacing items, especially those urgently needed
 - The proverbial car keys, glasses, purse, shoes, briefcase, important papers
- In-your-face distractions often trump the fragile grasp of working memory
- Some experts believe working memory problems are the root cause of poor academic achievement and reading disabilities

What to DO about it?



- Since memory longevity depends on how well we ACQUIRE and CONSOLIDATE events, names, etc. it makes sense to accent those processes
- Allow the experience to engage ALL your senses – taste, smell, vision, hearing, touch
- Make the experience meaningful, something that engages your interest
- Add emotion to the mix when possible to cement the memory

Keep going...



- Focus on the experience fully for more than just a few seconds, let it sink into your body and soul (and brain)
- Notice yourself remembering to remember – associate this experience with something similar in your past
- Replay the experience more than once to embed it deeply
- SLEEP – restful, gentle, sleep, sleep, sleep

What else helps?



- Memory training techniques
 - CogMed from Sweden has created computer memory training, released for ADD adults in 2008
 - Must work with trained professional
 - Combination of at home therapy and coaching
 - Impressive results for children's academic improvement
 - Studies done with solid scientific techniques; fairly well accepted by medical community

Exercise – yep, again



- Recommendations are for 30-45 minutes of aerobic exercise per day 4-6 times a week
- Increasing evidence that exercise increases and strengthens neural pathways leading to better memory retention and recall
- “Spark” by Dr. John Ratey is strong evidence that brain fitness is as important (or more important) than heart fitness for a longer, cognitively active life

Supplements?



- Gingko biloba, the gold standard
 - No compelling evidence but some anecdotal information that it works
- Vitamin B
 - Deficiencies can cause memory lapses
- Vitamin C
 - Reduces free radicals which MAY help memory – use in moderation
- Compounded supplements “ATTEND” “FOCUS” etc – no scientific evidence for homeopathic remedies, only anecdotal

Keep your brain active!



- Hugh Downs was right!
 - Practicing memory games, using tricks to remember names and dates, etc DO work

- Stay engaged in life
 - Memory problems more common among people who “drop out” especially those who watch a lot of television
 - Internet CAN be stimulating to the brain and memory but can also be deadening, in excess

Meds influence memory



- Check with your doctor to see if any of the medications you take are memory “robbers”
- Sometimes meds can be adjusted, sometimes not, but knowing the reason behind your memory stuttering can help relieve stress
- Speaking of stress – reducing stress can also help memory – and a lot of other things too

Now, can you remember?

- What we just talked about?
- No problem – review the slides – another GREAT way to assist your memories

