

WATERLOO RESEARCH IN AGING PARTICIPANT POOL

Our mission is to facilitate research that will further our knowledge of the aging process.



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Note from the WRAP Staff

We would like to thank you for your contribution of time in participating in our research studies. With the help from individuals like yourself, we can investigate the differences between healthy aging and disease processes such as (but not limited to) stroke, Parkinson and Alzheimer's disease.

WRAP Staff



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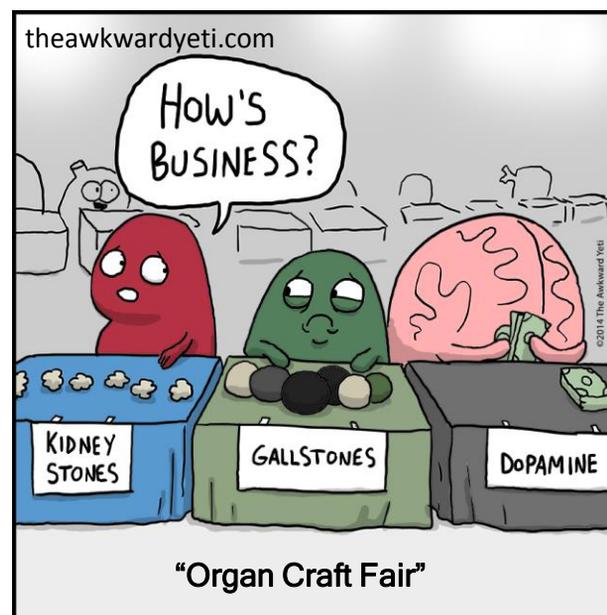
Research Highlights: Autobiographical and Episodic Memory Deficits in Mild Traumatic Brain Injury

Jeffrey Wammes, Tyler Good and Myra Fernandes, Ph.D

Those who have suffered a concussion, otherwise known as a mild traumatic brain injury (mTBI), often complain of lingering memory problems. However, there is little evidence from behavioral studies reliably demonstrating memory deficits. In our study, we collected cognitive profiles from younger and older adults who had, or had not had a concussion over a year before testing. These included measurements from cognitive speed, episodic, autobiographical and semantic memory tasks. We were mainly interested in documenting any episodic and autobiographical memory impairments as a result of mTBI in an otherwise healthy young group. However, because there is some overlap between the performance declines in ageing and those with concussion history, we wanted to determine whether older adults share a similar cognitive profile to younger adults with an mTBI, and also whether concussion amplified age-related memory issues. We found the expected age-related decline in episodic memory performance, coupled with a relative preservation of semantic memory in older adults, which was also the case in younger adults with a history of concussion. There was no evidence that older adults were performing worse if they had had a concussion. Within our younger adult groups, we were able to use our measures alone to classify whether a participant had had a concussion with a high degree of specificity (79.5%). Our study shows that those who have had a concussion demonstrate a distinct cognitive signature, characterized by impairment in episodic and autobiographical memory, coupled with a relative preservation of semantic memory. However, older adults were not demonstrably performing worse if they had had a concussion, and there was some evidence that semantic memory was improved, and even used to compensate for episodic memory problems in older adults.

Changes of Aging: Dopamine

Dopamine is a neurotransmitter that plays a major role in reward-motivated behaviour. Research has shown a decrease in dopamine synthesis, binding sites, and receptors as a function of aging. These changes are thought to be associated with various symptoms, such as increased rigidity and decreased cognitive flexibility. Present interventions to combat these symptoms are focused on boosting levels of dopamine in the brain.



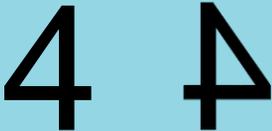
Research Highlights: Age-Related Differences in Fall Perception

Julian Lupo and Michael Barnett-Cowan, Ph.D

Falls are the leading cause of injury-related deaths and hospitalizations in Canada. Anyone can fall at anytime, however, older adults are at an increased risk of injury. As you get older, physical changes and health conditions - and sometimes the medications used to treat those conditions - make falls more likely. While we know how the body moves to prevent injury during a fall, we know hardly anything at all about how people perceive a fall itself. Common anecdotal reports suggest that humans often describe distortions in their perception of time - time seems to slow down during a fall - with very little recollection of how and when the fall began. Using a lean-and-release protocol, where participants wear a safety harness and lean slightly forward with their weight taken-up by a cable, we could produce safe and controlled fall simulations by releasing the cable and measuring the time it takes to detect the onset of a fall. We found that older adults (60-80y) take twice as much time as younger adults (18-35y) to detect the onset of a fall. Such a finding suggests age-related differences in fall perception, which may relate to increased fall rates in older adults. A better understanding of how different groups of people such as the young versus older adults perceive a fall may identify important factors for innovative falls prevention strategies and rehabilitative training exercises to improve fall awareness.

Instructions:

For each number in the matrix to the right, decide whether it is a normal or reversed number without rotating your head or device.

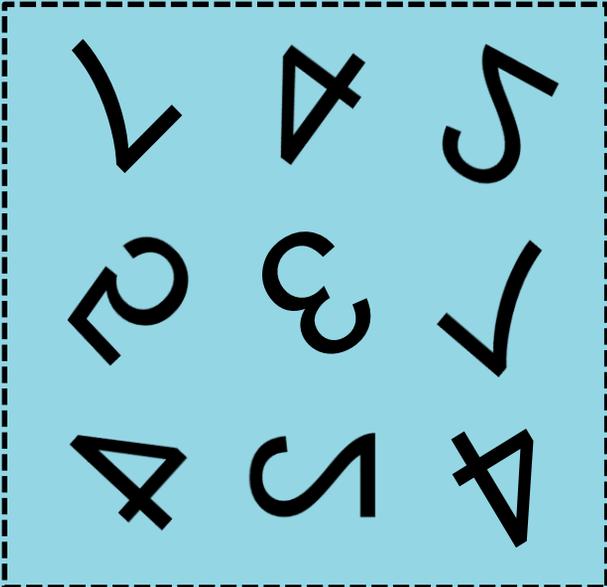


Normal Reversed

Answers:

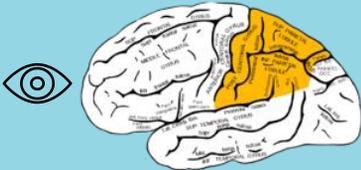
- Row 1: normal, reversed, reversed
- Row 2: reversed, normal, reversed
- Row 3: reversed, reversed, normal

Mental Rotation Game



Your Brain in Use:

Mental rotation, as a function of visual representation in the brain, is thought to be associated with the right cerebral hemisphere, specifically the back parietal areas (in orange) associated with perception of visual stimuli.

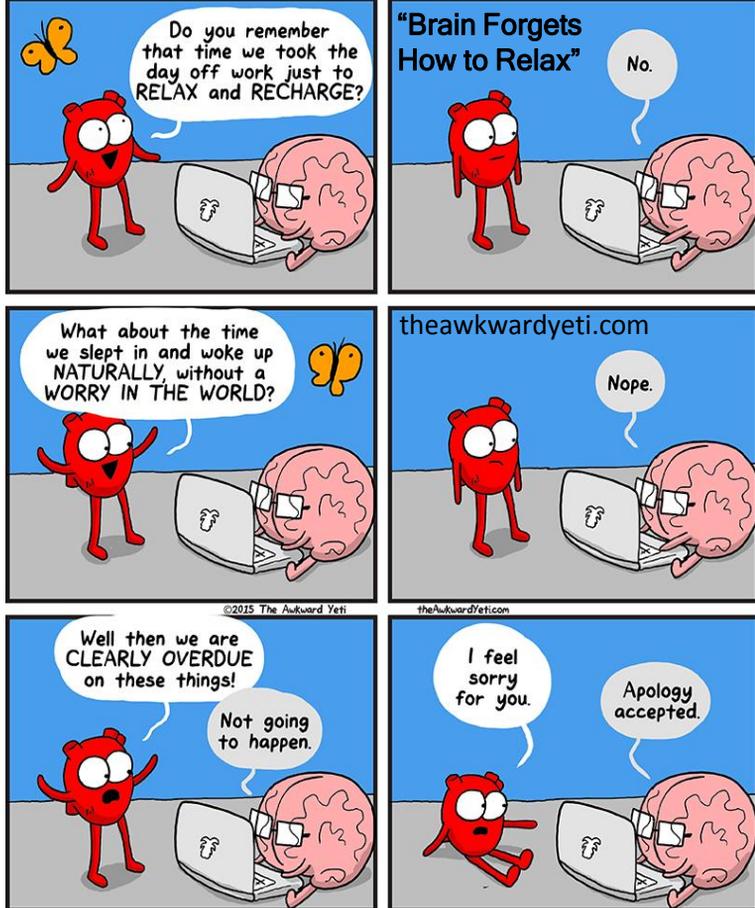


Brain Teasers

1. What has an eye but cannot see?
2. What gets broken without being held?
3. What is always coming but never arrives?
4. What can travel around the world while staying in a corner?
5. Which word in the dictionary is spelled incorrectly?

1. A needle | 2. A promise | 3. Tomorrow | 4. A stamp | 5. Incorrectly

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Upcoming Aging Events

- ❖ (Multiple Sessions, beginning in October) Aging Writers: Intergenerational Stories, Memoir, Poetry, and Fiction
 - ❖ Location: Hamilton, Ontario
 - ❖ <http://bit.ly/2azTNaV>
- ❖ (October 20-22, 2016) CAG 2016: Fostering Innovation in Research on Aging
 - ❖ Location: Montréal, Québec
 - ❖ <http://cag2016.ca/>
- ❖ (November 15, 2016) Ontario's Premier Seniors Education Conference & Information Fair 2016
 - ❖ Location: Toronto, Ontario
 - ❖ <http://bit.ly/2aUKapm>

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