

Clinical study shows young brains lack the wisdom of their elders

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Language task reveals brains of older people are not slower but rather wiser than young brains, allowing older adults to achieve an equivalent level of performance.

The brains of older people are not slower but rather wiser than young brains, which allows [older adults](#) to achieve an equivalent level of performance, according research undertaken at the University [Geriatrics](#) Institute of Montreal by Dr. Oury Monchi and Dr. Ruben Martins of the Univeristy of Montreal.

"The older [brain](#) has experience and knows that nothing is gained by jumping the gun. It was already known that aging is not necessarily associated with a significant loss in cognitive function. When it comes to certain tasks, the brains of older adults can achieve very close to the same performance as those of younger ones," explained Dr. Monchi. "We now have neurobiological evidence showing that with age comes [wisdom](#) and that as the brain gets older, it learns to better allocate its resources. Overall, our study shows that Aesop's fable about the tortoise and the hare was on the money: being able to run fast does not always win the race—you have to know how to best use your abilities. This adage is a defining characteristic of aging."

The original goal of the study was to explore the brain regions and pathways that are involved in the planning and execution of language pairing tasks. In particular, the researchers were interested in knowing what happened when the rules of the task changed part way through the

exercise. For this test, participants were asked to pair words according to different lexical rules, including semantic category (animal, object, etc.), rhyme, or the beginning of the word (attack). The matching rules changed multiple times throughout the task without the participants knowing. For example, if the person figured out that the words fell under the same semantic category, the rule was changed so that they were required to pair the words according to rhyme instead.

"Funny enough, the young brain is more reactive to negative reinforcement than the older one. When the young participants made a mistake and had to plan and execute a new strategy to get the right answer, various parts of their brains were recruited even before the next task began. However, when the older participants learned that they had made a mistake, these regions were only recruited at the beginning of the next trial, indicating that with age, we decide to make adjustments only when absolutely necessary. It is as though the older brain is more impervious to criticism and more confident than the young brain," stated Dr. Monchi.

Provided by University of Montreal

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