

New research shows how aging brain brings a healthy dose of perspective

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A University of Alberta researcher in collaboration with researchers from Duke University has proven that wisdom really does come with age, at least when it comes to your emotions.

A study conducted by Dr. Florin Dolcos, assistant professor of psychiatry and neuroscience in the Faculty of Medicine & Dentistry, identified brain patterns that help healthy older people regulate and control emotion better than their younger counterparts. The study identified two regions in the brain that showed increased activity when participants over the age of 60 were shown standardized pictures of emotionally challenging situations.

"Previous studies have provided evidence that healthy older individuals have a positivity bias – they can actually manage how much attention they give to negative situations so they're less upset by them," said Dr. Dolcos, a member of the Alberta Cognitive Neuroscience Group, which brings together researchers from the University of Alberta to explore how the brain works in human thought, including issues like perception, attention, learning, memory, language, decision-making, emotion and development. "We didn't understand how the brain worked to give seniors this sense of perspective until now."

During the study, younger and older participants were asked to rate the emotional content of standardized images as positive, neutral or negative, while their brain activity was monitored with a functional magnetic resonance imaging (fMRI) machine, a high-tech device that

uses a large magnet to take pictures inside the brain. The older participants rated the images as less negative than the younger participants. The fMRI scans helped researchers observe this reaction in the senior participants. The scans showed increased interactions between the amygdala, a brain region involved in emotion detection, and the anterior cingulate cortex, a brain region involved in emotion control.

According to Dr. Dolcos, "These findings indicate that emotional control improves with aging, and that it's the increased interaction between these two brain regions that allows healthy seniors to control their emotional response so that they are less affected by upsetting situations."

The study, published in the journal *Neurobiology of Aging*, was performed under the co-ordination of Dr. Roberto Cabeza and in collaboration with Ms. Peggy St. Jacques, both of Duke University where Dr. Dolcos received his training in brain imaging research.

This research may have clinical implications. "If we can better understand how the brain works to create a positivity bias in older people, then we can apply this knowledge to better understand and treat mental health issues with a negativity bias, such as depression and anxiety disorders, in which patients have difficulty coping with emotionally challenging situations," Dolcos said.

Source: University of Alberta

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