

Older adults not more distractible, research shows

November 4 2007

Despite previous research suggesting that older adults are more distractible, new research shows they are no more distractible than younger adults when asked to focus their attention on their sense of sight or sound, or when asked to switch their attention from one sense to the other.

The research, performed at Wake Forest University Baptist Medical Center, focused on the effects of age on multisensory attention, or the way the senses work together. It is part of the PROMISE (Processing of Multiple Individual Senses in the Elderly) study, funded by the National Institute of Neurological Disorders and Stroke, and was presented today at the 37th annual meeting of the Society for Neuroscience in San Diego, Calif.

Attention works in two main ways, according to Christina E. Hugenschmidt, a Ph.D. candidate at the Wake Forest University School of Medicine, who presented the results. It speeds up the brain's processing of what you want to pay attention to, and slows down the processing of what you want to ignore.

"Most research has focused on distractors that occur in one sense at a time, like ignoring only certain red signs or recognizing one sound that is different in a series of sounds," said Hugenschmidt. "However, we all know that distractions can come across sensory systems as well. We often do things automatically to minimize this multisensory distraction, like turning down the radio in the car to concentrate on finding an

address."

The Wake Forest Baptist researchers wanted to find out if older adults had a harder time paying attention, and if they were affected differently in their ability to enhance or suppress relevant information, said Paul J. Laurienti, M.D., Ph.D., lead researcher and associate professor of radiology.

"There are two kinds of attention we were interested in studying -- voluntary attention and involuntary attention," said Laurienti. "We all know that we can choose to focus on one sense and ignore another. For instance, you might be able to ignore the sounds of the television while you read the paper. But sometimes a very salient stimulus can capture your attention anyway -- for instance, if the fire alarm went off while you were reading the paper."

Voluntary attention was measured by comparing how much people's responses were sped up if they knew they were going to see or hear a target, and how much they were slowed down if they were expecting a target in another sense. For example, responses to a red light tend to be faster when participants expect to see a light and slower when they saw the light, but expected to hear a sound.

To measure involuntary attention, the participants performed the same tasks, but were not told what to expect. The researchers compared visual tasks that were preceded by other visual tasks with visual tasks that were preceded by auditory tasks. This allowed them to measure how quickly the participants could switch from one sense to the other. The study involved 48 participants and compared the results of the half who were between ages 18 and 38 with the other half who were between 65 and 90.

"These data showed that older adults still successfully engaged their

attention, both in terms of speeding up and slowing down,” said Hugenschmidt. “Older adults were also quite similar to younger adults in how much of their attention was captured involuntarily. Even as we age, this study suggests that the brain's ability to engage multisensory attention remains intact.”

Future research includes the effect of a highly distracting environment (unlike a controlled laboratory environment) on adults' ability to focus attention, and the effect of an attention-training program.

Source: Wake Forest University Baptist Medical Center

Citation: Older adults not more distractible, research shows (2007, November 4) retrieved 17 April 2024 from <https://medicalxpress.com/news/2007-11-older-adults-distractible.html>

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