Tablet computer use may help keep seniors' minds sharp

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Shelley Hayden was one of the study participants who spent an average of more than 15 hours a week using an iPad. After 10 weeks of tablet use, the participants were tested on their mental agility, including how quickly they could compare lists of numbers.

(Medical Xpress)—A new study from the Center for Vital Longevity at The University of Texas at Dallas has affirmed that challenging older adults with certain never-before-tried activities—such as tablet

computing—might enhance cognitive vitality and ultimately help ward off or delay age-related dementia.

The findings from the study by graduate student Micaela Chan were published online last month in *The Gerontologist*. The research builds on earlier work from the lab of Dr. Denise Park, the founder and co-director of the center, whose "Synapse Project" found that adults who engaged in cognitively demanding activities, such as learning skills in digital photography and quilting, improved their memory and speed in processing information.

Their results were compared to other older adults who joined social clubs or simply stayed home and did less demanding activities, such as playing word games.

Park was also the senior author of the more recent study that examined whether training older adults to use tablet computers could enhance cognitive function.

The scientists looked at 54 adults ages 60 to 90 for three months. One-third of the participants were placed in an iPad group and given extensive training in using the tablet computer to perform various tasks and projects, spending an average of more than 15 hours a week on an iPad for 10 weeks.

The iPad group's results were compared to two control groups: a placebo group that completed activities of low-cognitive demand and no skill acquisition, such as watching movies and completing knowledge-based word puzzles; and a social group, which socialized for 15 or more hours a week, primarily around prescribed conversational topics such as travel, art and history.

All three groups were given the same cognitive tests before and after the

10 weeks of activities. The tests included standardized measures designed to gauge mental agility, such as assessments that examined participants' speed in comparing lists of numbers and their immediate recall. A comparison of scores found significant improvements in episodic memory and processing speed in the iPad group.

Episodic memory refers to the autobiographical recollection of events and personal experiences that occurred at a particular time and place. Processing speed refers to how quickly a person is able to carry out simple or automatic cognitive tasks under a time limit, which focuses their attention.

"Although some individuals in the two control groups also experienced some cognitive improvements, the iPad group showed significantly more improvement over time," Chan said.

Park said that the findings are preliminary, and the iPad group was relatively small, with 18 individuals.

"At the time we planned this study, we weren't sure we could improve cognition with iPad training. We are delighted the results turned out positively," Park said. "Key to this study, however, is the notion that regardless of whether iPad training improved cognition, we were equipping older people with lifetime skills to manage many aspects of the aging process, and that they would leave the study better equipped to face the process of aging."

Park and Chan found that participants gained technological skills useful in everyday tasks, such as online banking and communication through social media. Chan said participants gained access and insight into a tool that makes modern living easier and frees up time, if used properly.

The iPad in particular was singled out as the device for this study

because of its portability, thousands of applications, intuitive interface and large visual icons that are well-suited to the cognitive, visual and motor capabilities of older adults.

Based on participant feedback, some individuals experienced great personal benefit in using the iPad, and others were moved by the use of technology to reach out to loved ones.

"A year ago, I never dreamed that this would happen," said one participant who had never used a computer or written an email. "At my age, I assumed I was past learning something like this. It is so much easier to email than wait for the right time to phone."

More information: Micaela Y. Chan, Sara Haber, Linda M. Drew, and Denise C. Park. "Training Older Adults to Use Tablet Computers: Does It Enhance Cognitive Function?" *The Gerontologist* first published online June 13, 2014 DOI: 10.1093/geront/gnu057

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