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EXERCISE & THE ELDERLY

Fit seniors better able to react when quick thinking needed, study says

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CHAMPAIGN, Ill. — The senior citizen who swims, jogs, plays tennis or participates in some type of regular exercise program is likely to be better prepared to respond to situations requiring quick thinking than a peer who logs too much time in the recliner.

So say researchers at the University of Illinois at Urbana-Champaign, who examined the effects of physical activity history on electrocortical indices of executive control in older adults.

Kinesiology professor Charles Hillman presented the results of the study in a paper titled "Aging, Physical Activity and Executive Control Function" at the annual conference of the American College of Sports Medicine in St. Louis May 29-June 1. Co-authors with Hillman are kinesiology professor Edward McAuley and psychology professor Arthur Kramer, and graduate students Artem Belopolsky and Erin Snook.

In the study, the Illinois researchers employed a series of tests designed to measure cognitive responses of 32 people assigned to four categories: older adults who reported low, moderate, and high levels of physical activity in their day-to-day routines, along with a control

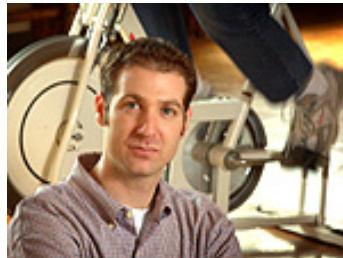


Photo by Bill Wiegand

Kinesiology professor Charles Hillman says the senior citizens who swim, jog, play tennis or participate in some regular exercise are likely to be better prepared to respond to situations requiring quick thinking than their couch potato peers.

group of college-age adults. The older adults had a median age of 66. Hillman said the study focused on the relationship between exercise and aging on "executive control function," or ECF, which he described as "cognitive processes which require more effort and are largely mediated by the (brain's) frontal lobes."

An example of a more simple cognitive process, he said, occurs when a driver stopped at a red light proceeds automatically as the light turns green. Greater amounts of ECF kick in when a driver starts to move forward, then slams on the brakes to avoid hitting an obstacle that suddenly appears in the intersection. "ECF requires a more conscious effort to negotiate the environment," Hillman said.

In the Illinois study, the measured responses to neuro-electric stimuli among people in the "high active older adults" group more closely resembled those of the younger adults than those of peers reporting exercise histories in the low or moderate range. The researchers also discovered motor preparation differences among the participants. "We find that active and sedentary older adults differ in the way they select the correct response," Belopolsky said. "Results for physically active older adults indicate that they prepare more efficiently for a response than sedentary older adults."

Overall, Hillman said, the study shows that "increased amounts of physical activity affect cognitive functioning related to more effortful processing results in older adults." Or, in more simple terms: "Physical activity appears to be beneficial to older adults."

Hillman, Kramer and McAuley are among a group of researchers collaborating in the university's newly established Initiative on Aging, an interdisciplinary program created to contribute to knowledge of the aging process, to improve the quality of life for the aging population, and to reduce healthcare costs for the aging.

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