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News Release

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VA research shows improved cognitive function with aerobic exercise in previously sedentary older adults.

Drs. Joe Nocera, Keith McGregor and Bruce Crosson at the Atlanta VA Center of Excellence for Visual and Neurocognitive Rehabilitation (CVNR) have published findings demonstrating improvements of cognitive function for older adults who participated in 12-weeks of aerobic exercise on stationary “spin” bikes. In particular, they found improved semantic verbal fluency which is characterized by the number of words an individual can produce related to a given category (fruits, for example) in one minute. “This could have implications for the common “tip of the tongue” problem older adults experience where they know the word they want to say but can’t quite retrieve and say it” says the lead researcher on the study, Dr. Joe Nocera.

Twenty older adults from the community were recruited. Half of them participated in a 3 times per week, 12-week stationary cycling exercise class, and the other half were a “non-contact” control group during the 12 weeks.

Those riding the exercise bikes worked to build up their cardiovascular fitness. “We follow the guidelines of the American College of Sports Medicine for building cardiorespiratory endurance in older adults” says Dr. Nocera “in which we start at lower levels of intensity and build up the duration and intensity over of the 12-weeks.” By the end of 12 weeks, participants were working out for 45 minutes with some reaching 90% of their maximum heart rate. Importantly, at the end of the 12-week exercise program, the aerobic cycling group was able to produce 15% more words than before the exercise while the no-exercise control group only improved by 2%. Equally important was the exercise group significantly improved their estimated VO₂max- which is the gold standard for measuring cardiovascular function.

“The benefits of exercise seem to be growing every day, particularly as it relates to cognitive functioning” says Dr. Nocera. “Our findings add to that by demonstrating a cognitive improvement in an area of concern to many older adults.”

So what’s on the horizon? VA researchers say the next step is to try and figure out why these changes occur and perhaps see if the benefit can be seen in older adults with neurological disease. In a study currently being conducted to take this a step further, older adults are being recruited to have a brain scan both before and after a 12-week exercise intervention to help provide insight into why the improvements in verbal fluency occur.

**Published in the Journal of Aging & Physical Activity on January 14, 2014;
‘Spin’ Exercise Improves Semantic Fluency in Previously Sedentary Older Adults”**