

## RSNA16: Aerobic Exercise Improves Cognitive Function



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According to a study presented at the annual meeting of the Radiological Society of North America (RSNA), adults with mild cognitive impairment (MCI) who exercised four times a week over a six month period had an increase in brain volume in specific areas of their brain. Those who participated in aerobic exercise demonstrated greater gains in such activity.

The researchers used a new MRI technique to assess 35 adults with MCI. All participants were part of a randomised, controlled trial of exercise intervention. Participants were divided into two groups - one with sixteen adults who engaged in aerobic activity and one with 19 adults who participated in stretching exercises. MRI images of the participants were compared to gauge the change in both brain volume and shape.

Findings showed that brain volume increased in most gray matter regions for both groups but compared to the stretching group, the aerobic activity group had greater preservation of total brain volume, increased gray matter volume and increased directional stretch of brain tissue. In addition, the analysis revealed a atrophy within the white matter. According to Dr. Jeongchul Kim, PhD, co-investigator on the study from WFSM, this deformation may be related to volume loss.

"Directional changes in the brain without local volume changes could be a novel biomarker for neurological disease," he said. "It may be a more sensitive marker for the tiny changes that occur in a specific brain region before volumetric changes are detectable on MRI."

"Any type of exercise can be beneficial," Dr. Kim said. "If possible, aerobic activity may create potential benefits for higher cognitive functioning."

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