

# 인지활동을 통한 뇌 건강 증진: 메타 기억교실 중심으로

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## Abstract

Understanding how memory works and accurately monitoring the memory processes enable the appropriate planning and execution of the memory strategy. In this study, the effects of the multi-strategic memory training based on the metamemory concept were tested in older adults with subjective memory complaint using both behavioral and MRI approaches. Two hundred one elders (112 in training group; 89 in control group) participated and among the participants, 49 (39 from the training group and 10 from the control group) were randomly selected for brain MRI imaging. In neuropsychological tests, the training group showed a significantly higher increase in long-term delayed free recall, categorical fluency and Boston naming test. In the brain structure analyses, the mean diffusivity of the bundles of axon tracts passing from the frontal lobe to the posterior end of the lateral sulcus was decreased more in the training group. In addition, the cortical thickness of the left rectal gyrus in the frontal cortex was increased more in the training group than in the control group. These results indicate that the training program for understanding

and monitoring memory has vital and positive impacts on enhancing elders' cognitive performance. Improved white matter integrity in the anterior and posterior cerebrum and increased cortical thickness of prefrontal region, which are related to metacognition, possibly suggest that the effects of the metamemory training would be induced via the enhancement of cognitive control.

**Keywords:** training, metamemory, brain structure, cognitive function