

working memory training in older adults

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objectives

The aim of the study: developing a method of improving the quality of cognitive functioning in healthy older adults.

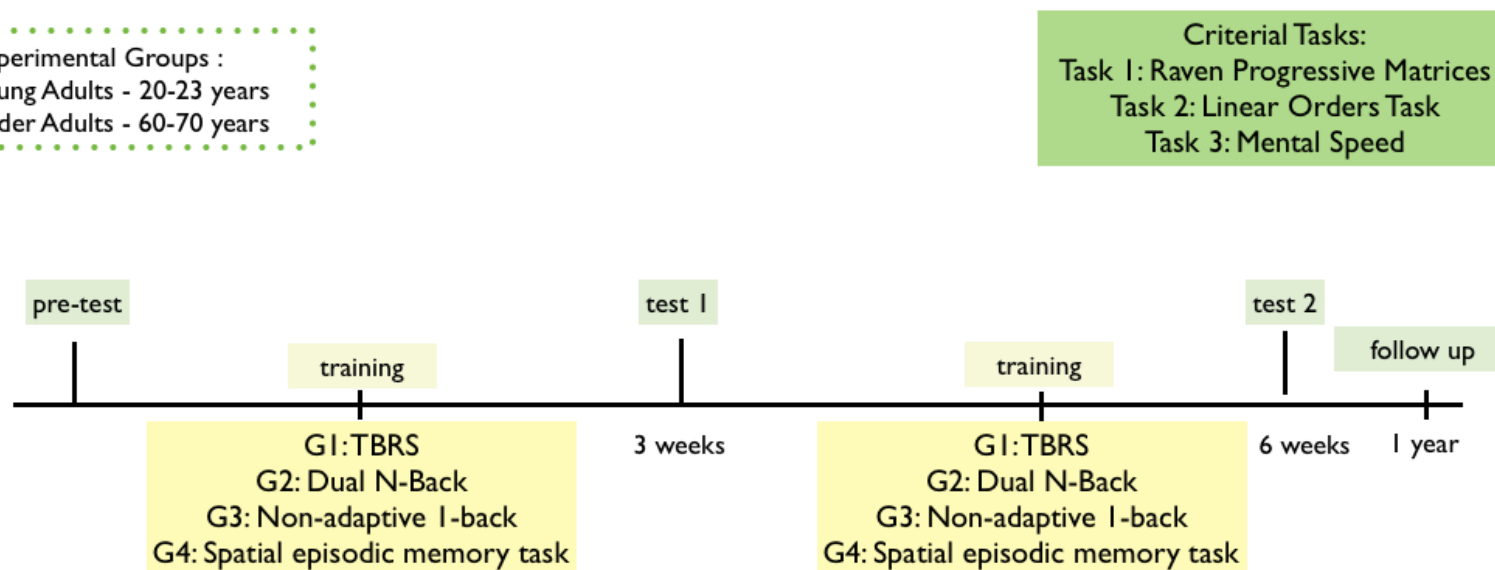
Theoretical background: Previous studies show the effects of training only in the same cognitive domain (Li et al., 2008) or only in young adults (Takeuchi et al., 2010; Jaeggi et al., 2008) , whereas we would like to examine the transfer of skills developed during working memory training into the higher-order cognitive functions, such as reasoning or integrating in older people.

method

Two age groups (60-70 and 20-30 years) will be randomly assigned into 4 types of wm training (training type: working memory capacity - TBRS, n-back dual task, active control 1-back, active control episodic memory). Criterial tasks (Raven Progressive Matrices - which will also serve as moderator, Linear Orders Task, Mental Speed) will be measured with an eyetracker at three timepoints. Participants will be trained for 6 weeks, 3 times a week for 15-25 minutes a day.

study design

Experimental Groups :
Young Adults - 20-23 years
Older Adults - 60-70 years



predictions

1. Healthy older adults that gain high results in Raven PM would get better training results than people with low score in RPM (or, by contrast: people with lower score in Raven PM can gain more out of the WM training).
2. Differences between groups would be more noticeable in the far transfer task.



Jaeggi, S., Buschkuhl, M., Jonides, J., Perrig, W., (2008). Improving fluid intelligence with training on working memory. *PNAS*, 105 (19), 6829-6833.

Li, S., Huxhold, O., Smith, J., Schmiedek, F., Rocke, C., Lindenberger, U. (2008). Working memory plasticity in old age: Practice gain, transfer, and maintenance. *Psychology and aging*, 23, 4.

Takeuchi, H., Sekiguchi, A., Taki, Y., Yokoyama, S., Yomogida, Y. I wsp. (2010). Training of working memory impacts structural connectivity. *Journal of Neuroscience*, 30 (9), 3297-303.