

## **Working-memory training in younger and older adults: Training and transfer effects on executive control**

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Numerous studies illustrated the decline of executive control with cognitive aging. However, open issues in the aging literature are whether (1) aging cognitive systems are plastic and training can compensate such decline, (2) training of an executive control aspect transfers to other aspects. Therefore, the present study investigates whether it is possible to improve working-memory (WM) updating skills with training in form of a complex visual-auditory WM task in older adults (mean age = 66.5 years) in contrast to younger adults (mean age = 24.4 years). Further, it tests whether this potential improvement transfers to untrained WM tasks, as well as situations of the task switching, dual-task, and attentional-blink type. Our results demonstrated that WM updating training improved performance in the trained task in older as well as younger adults (however, with an increased training benefit in younger adults). In addition, there were transfer effects to a visual version of an untrained WM task in both age groups, while transfers to aspects of task maintenance in the task switching as well as attention switch in the attentional blink situations were exclusive for the latter age group. We discuss these findings in the context of aging and executive control literature.

## **I Feel so Blue - A framework for Smart Phone based Depression Monitoring Applying only In-Built Smart Phone Sensors**

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Monitoring depression unobtrusively within daily life activity still remains an unsolved task. The proposed framework aims at designing and developing an advanced system for analysis, detection and estimation of users' cognitive, affective, motivational, energetic, and behavioral states associated with depression by processing information extracted from Smartphones equipped with multiple sensor modalities. The ultimate goal of the framework is to detect and capture the most important symptoms of the Major Depressive Disorder (MDD) without interrupting or influencing any of the user's daily activities. Such symptoms include negative mood, sadness, loss of self esteem, hopelessness, pessimism, fatigue, loss of energy, loss of interest and joy in (social) activities, gaining or losing weight, psychomotor unrest or slowing, and reduced sleep quality. Using innovative pattern recognition techniques to be implemented on a Smartphone, the Smartphone system will be able to automatically provide an initial behavioral assessment directly on the device. Preliminary data is presented to provide proof-of-concept evidence.