



Universität
Basel

Research Project

Filtering Efficiency as an Underlying Mechanism of Model-based Working Memory Training in Healthy Old Adults

Third-party funded project

Project title Filtering Efficiency as an Underlying Mechanism of Model-based Working Memory Training in Healthy Old Adults

Principal Investigator(s) [Zuber, Priska](#) ;

Organisation / Research unit

Faculty of Psychology

Department Psychologie / Cognitive Neuroscience (de Quervain)

Department

Departement Psychologie

Project start 01.02.2022

Probable end 01.08.2022

Status Completed

Background: Working memory (WM) is a crucial cognitive function in daily life and is amongst the first to decline with age. Additionally, it has been shown that older adults have difficulties to suppress task-irrelevant information during WM encoding, also termed as filtering efficiency (FE). Thus, it has been suggested that WM trainings are needed that train the exclusion of irrelevant information during WM encoding. In our previous study (Zuber, Geiter, de Quervain, & Magon, 2021) we tested a training that integrates distracting information into WM tasks and showed improved WM capacity only following the WM training with distractor inhibition in healthy older adults. On the basis of these results, it needs to be further established how WM and FE interact in order to reach highest benefit in increasing WM capacity and to understand if FE displays a task-relevant process of WM training.

Aims and methods: The present project aims to elaborate how FE constitutes an underlying mechanisms of WM capacity improvements when trained in combination with WM by altering the previously developed model-based (MB) WM training with FE (MB+) in a version with high FE and high WM load (MB++) and a version with high FE but low WM load (MB+-). Implemented in a smartphone application, all trainings will be compared regarding their improvement on WM capacity in a sample of 171 healthy elderly adults using a web-based, randomized, double-blind, parallel group study design.

Relevance of the project: The present study would extend the previous literature by enabling interpretations on how WM and FE interact when aiming at improving WM capacity with training in healthy elderly adults. These new insights could offer the possibility to not only help elderly people in overcoming difficulties in daily life tasks due to their age-related decline in cognitive functions, but may also be translated in rehabilitative strategies for clinical conditions.

Financed by

University of Basel

Add publication

Add documents

Specify cooperation partners