

Detailed information on the project

Title of project	Countervail cognitive, sensorimotor and cerebral decline in patients with Mild Cognitive Impairment, a Randomized controlled Trial comparing musical, psychomotor and social animation interventions
Language of project	English
Contributing institutions	<ul style="list-style-type: none"> ▪ University of Applied Sciences and Arts Western Switzerland HES-SO <ul style="list-style-type: none"> - Geneva School of Health Sciences (Host Institution of the Principal Investigator) - Geneva school of social work ▪ University of Geneva <ul style="list-style-type: none"> - Faculty of Psychology and Educational Sciences - Faculty of Medicine ▪ University Hospitals of Geneva <ul style="list-style-type: none"> - Memory Center
Key words	Mild Cognitive Impairment; Randomized Controlled Trial; Non-medical interventions; Cognitive Performance; Sensorimotor performance; Experience induced functional and structural brain plasticity; Music Practice; Psychomotor therapy; Social animation; Multivariate data-driven analyses; Well-being; Autonomy
Geographical space	Geneva, Switzerland
Research question	Can 6 months of active music practice vs. psychomotor interventions in MCI (Mild Cognitive Impairment) patients impact positively cognitive and sensorimotor performance as well as associated brain plasticity compared to social animation interventions?
Aim of project	We intend to show that musical practice or psychomotor exercise in small groups are well-targeted interventions to stabilize, reinforce or even improve cognitive, sensorimotor, and brain functioning in the neglected population of MCI patients, also provoking benefits for daily life functioning, well-being, and autonomy of these patients.
Methods	Randomized Controlled Trial; Large Behavioral battery; Brain imaging battery (structural and functional MRI (Magnetic Resonance Imaging)). Three interventions: Music Practice, Psychomotor practice, Social Animation, 2 times per week 45 minutes, ~40 courses/~6 months). Uni & multivariate analyses.
Relevance	At present, the only conclusion from clinical and translational research is that dementia is not curable. Despite great progress made in the early detection and, consequently, in the delay and reduction of symptoms, the progression of the disease, once started, is irreversible. This is why approaches that can

	delay, diminish or even temporarily overcome brain decline, especially at early stages, are of crucial importance. We intend to reverse the slope of decline in the fragile and neglected MCI population via intensive non-medical interventions, preventing or retarding the development of dementia.
Project lead	Prof. Dr. Clara James, PhD in neuroscience, MSc in experimental psychology, & professional musician, expert in the impact of music practice on brain and behavior, https://orcid.org/0000-0001-7480-0682
Project team	<ul style="list-style-type: none"> - Dr. Damien Marie, co-applicant, PhD in neuroscience, MSc in biology, expert in advanced MRI (Magnetic Resonance Imaging) brain recording & analyses - Cyrille Stucker, scientific collaborator, MSc in clinical psychology - Prof. Dr. Chantal Junker-Tschopp, PhD in psychology and psychomotor expert - Consultants: <ul style="list-style-type: none"> - Prof. Dr. Giovanni Frisoni, expert in cognitive decline and dementia - Prof. Dr. Matthias Kliegel, expert in cognitive aging - Prof. Dr. Isabelle Mili, expert in music didactics
Mandating institutions	Geneva School of Health Sciences, University of Applied Sciences and Arts Western Switzerland HES-SO / Haute école de santé de Genève HES-SO
URL of project	https://www.hesge.ch/heds/recherche-developpement/projets-recherche/en-cours/countervail-cognitive-sensorimotor-and-cerebral
Start of project	Mai 2020 (due to the Corona pandemic, the interventions will start in February 2021 instead of September 2020), on a reduced group of patients (n=30))
Estimated end of project	Unknown, we hope to include a second group of patients later on (n=15-30). Originally the end of the study was foreseen for June 2021.
Dissemination	Publications in peer-reviewed international scientific journals (f.i. NeuroImage, Frontiers in Aging Neuroscience, Neurobiology of Aging, etc.), presentation at international (f.i. Organization for Human Brain Mapping) and national (Alpine Brain Imaging Meeting; Swiss Congress for Health Professionals) conferences. Publication in professional journals intended for a non-academic audience and in newspapers. Presentations at elderly and community centers, etc. Dissemination of results in psychology and neuroscience curricula at the University of Geneva. Communicate the main results to the general public and the local and federal politics.