Alzheimer’s desease and implicit motor learning

https://neurodegenerationresearch.eu/survey/alzheimers-desease-and-implicit-motor-learning/

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Country

France

Title of project or programme

Alzheimer's desease and implicit motor learning

Source of funding information

ANR

Total sum awarded (Euro)

€ 807,789

Start date of award

01/03/2013

Total duration of award in years

3.5

The project/programme is most relevant to:

Alzheimer's disease & other dementias

Keywords
Research Abstract

Alzheimer’s Disease and Implicit Motor Learning
The project aims at the theoretical level, understanding the effect of the perception-action coupling on the maintenance of motor skills of patients with AD (mild and moderate stages) and, technologically, to strengthen their motor and cognitive abilities with tools from virtual reality and interactive games.

From understanding of the mechanisms to the development of implicit learning tools
Anomalies in the execution of some movements including walking are found in the early stages of AD., A better understanding of sensorimotor impairments and effects on motion planning is needed to improve care for patients. In view of the difficulties observed in the use of explicit learning methods, implicit methods based on imitation and motor contagion are essential ways in the development of rehabilitation programs.
Among the tools that can be used in implicit methods, virtual reality (VR) is an important resource. These interfaces, encouraging a multimodal, three-dimensional treatment, putting into action a subject in a virtual environment.
The project aims to facilitate the integration of perceptual-motor information (visual / hearing) related to emotional processes to facilitate the evocation of the action and trigger the implicit motor imagery. Given the possibilities of conservation of implicit memory (perceptual representations) and procedural (automatic motor skills), the mild and moderate stages of the disease, it is conceivable that reactivation substrates responsible for action by coupling perception / Action allow the development processes related to compensation mechanisms of brain plasticity.
The combination of musical sequences to motor rehabilitation exercises in order to strengthen as much as possible, programming and motor execution is an important goal of the project.
Experimental methods ans technological development
Experiments exploring abilities to represent an action in MCI patients through mental rotation tasks and assess the capacity of postural anticipation. Two experimental groups were formed: a group of elderly people without cognitive impairment and a group of seniors at the MCI stage of Alzheimer’s disease. Also an experiment involves implicit learning of rising from floor with an exercise of puzzle which refers to order a motor sequence.
Technologically development of a demonstrator for the development of interactive applications and virtual immersion «games« on digital tablet that will be tested in clinical trials.

Lay Summary
Further information available at:

Types:
Investments > €500k

Member States:
France

Diseases:
Alzheimer's disease & other dementias

Years:
2016

Database Categories:
N/A

Database Tags:
N/A