## Background

The ageing of the population is one of the biggest opportunities and challenges facing the world in our century. Today the world's elderly population – people 60+ years old – is about 650 million. By 2050, the „greying" population is forecast to reach 2 billion. Along with this positive trend, however, come special health challenges. One of these challenges is the lapse of memory and forgetfulness: the Alzheimer's disease, other dementias and cognitive impairments.

10 to 12 percent of people beyond 65 years of age are suffering from dementia. More than 60 percent of family caregivers report high levels of stress because of the prolonged duration of caregiving, and 33 percent report symptoms of depression.
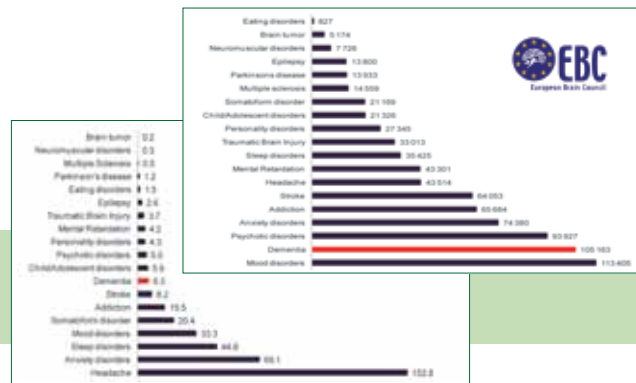

Source: Gustavsson et al. *Cost of disorders of the brain in Europe 2010.* Eur. Neuropsych. (2011) 21

Costs of health services and care might be reduced significantly by the early detection of the Alzheimer's disease and other dementias.

Concept

To recognize the turning point when elderly persons' normal mental decline switches to mental disorder is difficult task even for specialists. Clinical experiments to improve dementia prevention are currently being conducted worldwide.

Major goal of the project is to evaluate serious games as appropriate measuring tools in cognitive decline. Measurement data acquired from game play sessions are found to be good predictors of Mild Cognitive Impairment and Dementias. This indicates that the serious games being developed in the project (see the figure on the other side) can be useful tools in the early detection of the Alzheimer's disease.
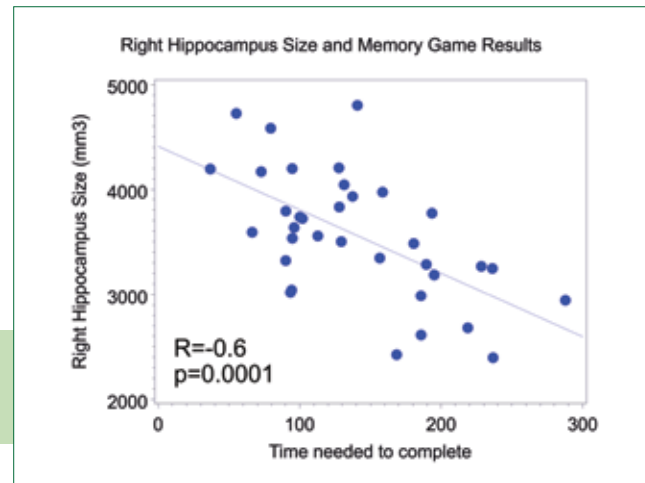
Source: Semmelweis University, Department of Psychiatry and Psychotherapy

Significant negative correlation was found between the size of the right hippocampus and the time needed to solve the project's Memory Game.

The project, running under the Ambient Assisted Living Joint Programme, is supported by the European Commission and national agencies.

Future activities

- More challenging online games
- Attractive web-design for games
- Internationalization, localization
- Improved and widened data collection from online games
- Data evaluation and prediction experiments
- Increased end user involvement and motivation
- More feedback from end users
- Advanced feedback to end users
- Various web services based on the Mental Wellness Toolset
- Business Model development

Memory Game

Source: BodyParts3D
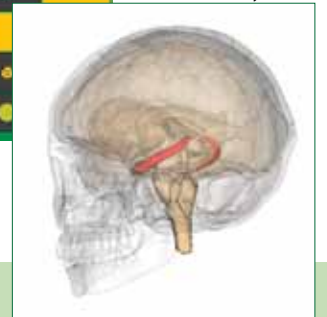
Project data

- Budget (total): EUR 2,7 million
- Project start: 1 December 2011
- Planned duration: 36 months
- Number of partners & countries: 7 & 4

Major objectives

Develop a Mental Wellness Toolset for individual use able to

- provide cognitive training for elderly persons in entertaining ways;
- recognize, measure and visualize eventual significant changes in their cognitive abilities over time;
- issue polite early warnings to those directly or indirectly effected.

Develop a scientifically sound methodology for the measurement and evaluation of data characteristic for cognitive changes.

Provide opportunity for the clinical validation of this methodology.

Build a multinational mental wellness community backed with a multilingual website.

Project partners

- Budapest University of Technology and Economics, Healthcare Technologies Knowledge Centre, coordinator (HU)
- Actimage Ltd. (LU)
- Frontida Zois Home Care Ltd. (GR)
- Gaudiopolis Retirement Home (HU)
- Semmelweis University, Department of Psychiatry and Psychotherapy (HU)
- Silver Publishing Ltd. (HU)
- Zurich University of Applied Sciences, Institute of Facility Management (CH)

Contact

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Player registration

http://m3w-project.eu/player/register

"More games, more days"

MAINTAINING AND MEASURING MENTAL WELLNESS

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