

# Short-term memory binding: validity as a cognitive biomarker for Alzheimer's disease across cultures and nations

<https://neurodegenerationresearch.eu/survey/short-term-memory-binding-validity-as-a-cognitive-biomarker-for-alzheimers-disease-across-cultures-and-nations/>

## **Name of Fellow**

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## **Institution**

## **Funder**

Alzheimer's Society

## **Contact information of fellow**

## **Country**

United Kingdom

## **Title of project/programme**

Short-term memory binding: validity as a cognitive biomarker for Alzheimer's disease across cultures and nations

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Alzheimer's Society

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€ 270,043

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2.0

## **The project/programme is most relevant to:**

Alzheimer's disease & other dementias

## **Keywords**

## **Research Abstract**

The investigation of short-term memory binding (STMB) functions in Alzheimer's disease (AD)

has unveiled promising areas for its early detection, follow up, and intervention. STMB has proved sensitive and specific to AD, insensitive to healthy ageing and socio-cultural factors, and capable of explaining impairments in everyday life functioning. This project will address three outstanding issues. Firstly, is STMB a culturally-unbiased tool that can assist in the early detection of AD worldwide? A collaboration network involving European, South and North American countries will contribute data from populations with different cultural backgrounds and risk levels for AD. Member labs have adopted our working protocol and are currently collecting data following cross-sectional and longitudinal designs. Secondly, can the cognitive marker properties of the STMB test lead to the development of a sound cognitive biomarker for AD. Electrophysiological and neuroimaging studies will be conducted towards the development of an affordable, non-invasive and culturally-unbiased cognitive biomarker for AD. A behavioural task (STMB test) and its associated brain activity recorded from specific hubs of the brain network will form the basis for a model-based, theory-driven cognitive biomarker for AD. Thirdly, can STMB be incorporated into programs aimed at assessing and rehabilitating activities of daily living (ADL) in patients with AD? By merging virtual reality, knowledge-based databases and artificial intelligence, an ecologically valid system capable of tailoring the assessment and intervention of ADL will be developed. This new evidence will permit the introduction of this breakthrough methodology in clinical contexts, internationally.

**Types:**

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