

Seeing what they see: compensating for cortical visual dysfunction in Alzheimer's disease

<https://neurodegenerationresearch.eu/survey/seeing-what-they-see-compensating-for-cortical-visual-dysfunction-in-alzheimers-disease/>

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United Kingdom

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Seeing what they see: compensating for cortical visual dysfunction in Alzheimer's disease

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ESRC/NIHR

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The project/programme is most relevant to:

Alzheimer's disease & other dementias

Keywords

Research Abstract

Alzheimer's disease (AD) is often mis-perceived as a disorder largely or solely of memory. However the disease also affects the visual areas of the brain leading to problems seeing what and where things are. Dementia-related visual impairment tends to be neglected, partly because

people assume any problems are due to the eyes rather than the brain, and because it occurs at a point when language and other skills are too impaired for the person with dementia to explain the perceptual problems they are having. Visual problems are also often mis-attributed to poor memory (e.g. a person with AD failing to recognize a family member in a photo may be thought to have “forgotten” the person, when in fact they may simply be unable to perceive the face clearly). Visual impairment in AD has received increased attention recently with the identification of the syndrome Posterior Cortical Atrophy (PCA) which is typically caused by AD but presents with dramatic impairment of vision not memory, as experienced and described by the author Terry Pratchett in his documentary Living with Alzheimer’s. Very few studies have explored the effect of impaired vision upon people with dementia or their caregivers. A motivation for improving our understanding of how people with AD see the world is that the limited number of small studies which have been conducted suggest that even simple changes to the environment (e.g. changing the colour of tableware from white to red) can compensate for vision problems in people with AD and lead to improved functioning and health (e.g. better eating and drinking). The project objective is to demonstrate that helping AD patients to interact more successfully with their visual environment at home can have a significant positive impact upon the wellbeing and quality of life of both patients and carers. The project will involve 50 people with PCA, 150 with typical Alzheimer’s disease and 100 healthy volunteers. The impact of visual aids and strategies will be measured at three time-points over the course of one year, with a staggered start to enable comparisons of quality of life in those with and without the intervention. The success of the project will be judged primarily using established measures of quality of life, caregiver burden, everyday abilities, and behavioural and psychological wellbeing. However, the design of the visual aids and compensatory strategies themselves will be based upon a combination of patient/carer interviews (qualitative evidence) and cutting-edge scientific understanding of the nature of visual impairments caused by conditions such as Alzheimer’s disease (quantitative evidence). This quantitative evidence will be gathered through studies of patient’s visual skills and eye movements, and their ability to move around a purpose-built laboratory environment, before the main study commences in patients’ own homes. Another important aspect of the project is the involvement of people with PCA, who experience AD-related visual loss but without the loss of memory and insight seen in typical AD. These individuals with PCA offer a new and unique perspective on the AD patient’s view of the world. Their experiences of care homes and day hospitals draws attention to the fact that many current social and behavioural interventions for people with dementia may be limited in their effectiveness by over-reliance upon visual information and by a systemic failure to recognize visual impairment in many service users. The research brings together experts in the fields of dementia, engineering, social science, social work, occupational therapy and ophthalmology. This interdisciplinary research team will work closely with the DeNDRoN ENRICH scheme and project advisors in the 3rd sector and industry specializing in dementia and vision loss (e.g. Thomas Pocklington Trust, Dementia and Sight Loss Interest Group, ARUP, CDRAKE) to improve the study and implement its findings.

Lay Summary

Further information available at:

Types:

Investments > €500k

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United Kingdom

Diseases:

Alzheimer's disease & other dementias

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