



Christchurch College, Oxford University

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News Attitudes to dementia could hamper progress

The latest 'Dementia Attitudes Monitor', by Alzheimer's Research UK, which surveyed more than 2,000 people, suggests half of us know someone diagnosed with dementia. Yet we still lack the understanding of the disease that could empower us to help ourselves and to support life-transforming research.

Many of us are unclear about whether dementia is a natural part of ageing

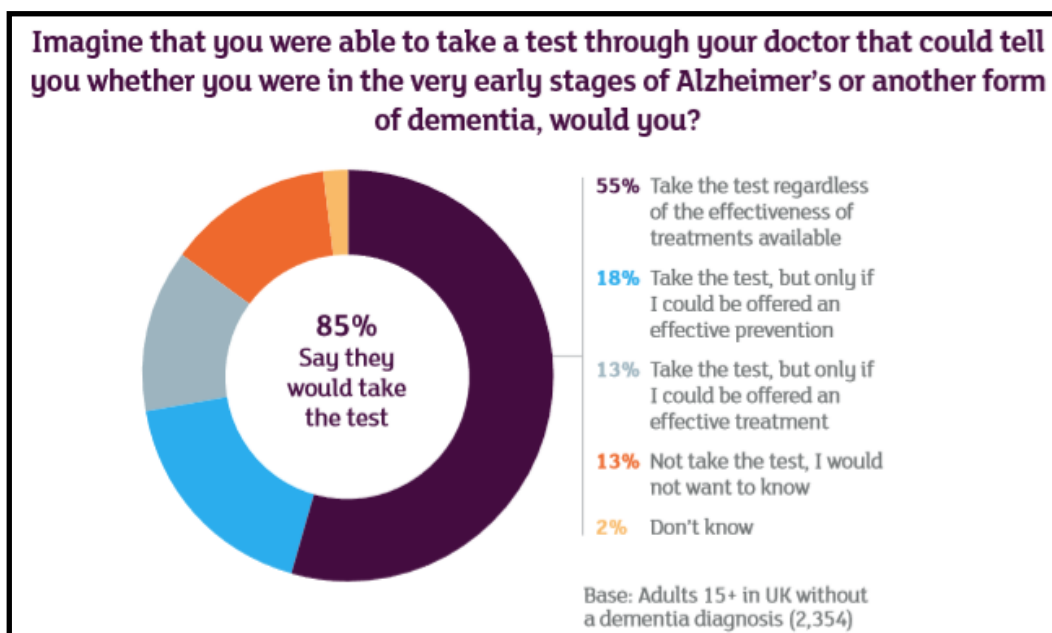
In fact, 22% of us believe dementia is an inevitable part of ageing. This may be discouraging people from participating in research to prevent or cure the disease. Indeed this survey suggests half of us would not be willing to take part in such research.

66% of us do not realise we can reduce our risk of developing dementia

Research suggests up to a third of dementia cases could be linked to factors which are within our control; physical factors such as alcohol consumption, diet, exercise, blood pressure and smoking. Yet nearly 7 out of 10 are unaware that we can do anything to reduce our risk of developing dementia. Those who are aware are more likely to identify non-physical risk factors such as being less mentally active and loneliness. Greater understanding of these physical risk factors could provide an added incentive for us all to take better care of ourselves.

There is strong support for early detection and diagnosis

85% of us are willing to be tested for the very early stages of Alzheimer's disease, or another form of dementia, even in the absence of symptoms. However significant numbers would only do so if an effective treatment or prevention strategy could be offered.



For more information: <https://www.dementiastatistics.org/attitudes/>

<https://www.nhs.uk/news/neurology/nine-lifestyle-changes-may-reduce-risk-of-dementia/>

See page 3 and 7 for research opportunities you can get involved in.

The Deep and Frequent Phenotyping (DFP) study, led by University of Oxford and funded by the NIHR and MRC, hopes to dramatically improve the success of clinical trials of Alzheimer's disease treatments. "Another set of clinical trials has been stopped due to lack of improvement in memory in Alzheimer's dementia. This suggests we need to look again at how we identify what may stop Alzheimer's disease progressing, as well as looking at who is likely to respond to it" said Dr Vanessa Raymont, lead researcher at the University of Oxford.

While most Alzheimer's disease patients are diagnosed once symptoms such as memory loss appear, research suggests damage in the brain can start decades earlier. The DFP study aims to identify a variety of measurable characteristics, known as biomarkers, which can detect the existence of Alzheimer's disease very early on.

DFP is one of the most detailed studies into preclinical Alzheimer's disease, performing up to 50 tests on 250 volunteers; this includes new tests that have not previously been used to detect dementia, such as the use of wearable technology to measure movement and gait and retinal imaging to look at subtle changes affecting a person's vision. Dr Raymont added "The DFP study will look for a wide variety of markers of early disease that may lead us to new treatments and ultimately the prevention of Alzheimer's Dementia."

For more information or to register your interest in the study visit: www.dfpstudy.co.uk. **Please note you must register using your desktop computer only.**

The Ashmolean's 2018/19 Appeal "Meet Me at the Ashmolean" launched in November 2018 to raise much-needed funds to create a friendlier and more accessible museum for older people, particularly those who experience loneliness or dementia.

Their plan is to create an Older People's Action Team and fund practical changes to the galleries such as improved seating, social spaces, ramp access and clearer labelling. The Museum also aims to continue the hugely popular "Meet Me at the Museum" social workshops, which promote



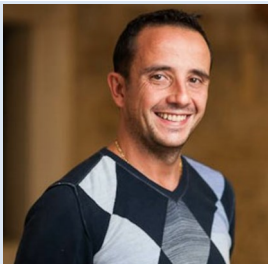
cognitive stimulation, physical activity and social interaction; three priorities identified by OxDARE (Oxford Dementia and Ageing Research) for healthy brain ageing.

To find out more about the visit the appeal page:

<https://ashmolean.org/meet-me-appeal>.

Researcher Profiles

In this section of the newsletter, we get to know the OxDARE scientists behind the research.



Dr Nicola Filippini

Magnetic Resonance Imaging (MRI) manager
Oxford Centre for Human Brain Activity (OHBA)

Q. What are your main research interests?

Nico: My main role is to look after the financial management of our MRI scanner. This includes setting annual budgets and quarterly forecasts, monitoring actual income, and identifying ways to maximise the income generated by the facility. I am also the first contact point for people starting new MRI studies at OHBA, and am always on hand to provide expert scientific advice and support. I enjoy participating in public engagement events hosted at OHBA, helping showcase the centre and scanner and generating an interest in our research projects.

Teresa: My work is related to the use of animal models to detect neuronal changes in the earliest stages of Parkinson's disease. The aim of this project is to better understand the cellular processes that lead to the characteristic neuronal loss seen in this disease, so that more efficient treatments can be developed. I use neuroimaging techniques that can be applied in the clinic to assess patients' responses to new therapeutic agents.

Q. Why did you decide to get involved in ageing and dementia research?

Nico: My interest in ageing and dementia research began in 2004, when I joined the Laboratory of Epidemiology, Neuroimaging and Telemedicine (LENITEM) lead by Dr Giovanni Frisoni in Brescia (Italy). I became interested in studying Alzheimer's disease, especially the potential of MRI techniques to investigate genetic risk factors for neurodegenerative disorders. As a research fellow, I planned, designed and performed behavioural and structural MRI studies on healthy subjects and patients with dementia. I also coordinated a clinical trial of a potential disease-modifying drug for patients with mild-to-moderate dementia.

Teresa: As an imaging scientist, I think that the use of non-invasive research tools can particularly benefit people affected by brain diseases. My PhD focused on brain tumours and one year ago I had the opportunity to move to Oxford to apply my imaging skills to the field of neurodegeneration. In my current team I feel that our research can have a positive impact in patients' lives, and this is a really rewarding experience.

Q. What is your favourite activity to do in Oxford, during your free time?

Nico: I really like playing table tennis and I joined a club in Kidlington where I can train with more experienced players. I also like watching football - my favourite team is Juventus and when I know there is a match I try not to miss it!

Teresa: In my free time I like doing sports (running or dance), reading and spending time with the good friends that I have made in this city.

Researcher Profiles

Q. Do you have any recommendations for a book/ movie/ holiday?

Nico: I like reading all sort of books and at the moment I am about to finish the fifth book of the Game of Thrones saga. I hope to finish it before the final season of the TV series starts in a couple of months! If I have to recommend a specific book, I would say the Pillars of the Earth. This is the first book of a trilogy that I'm sure everybody will love!

Teresa: One of the most striking books I have read is Blindness from the Portuguese writer José Saramago. It is a harsh although fascinating novel about human nature in the context of social instability.

Dr Teresa Delgado-Goñi

Career Development Fellow

Oxford Parkinson's Disease Centre (OPDC) & Translational Neuroimaging Group (TNG)



Research New treatment for depression in dementia?

The experience of depression in dementia is common and often results in worse outcomes for patients; however existing treatments are limited. A recent review did not find good evidence for the effectiveness of antidepressants in the treatment of depression in dementia and there has been little research on the effects of psychological treatments.

In 2015 Kiosses et al. showed that an innovative approach called Problem Adaptation Therapy (PATH) was more effective in treating depression in patients with cognitive impairment than supportive therapy. PATH aims to reduce the negative impact of functional impairments (such as difficulties communicating or engaging in household activities) in dementia and combines traditional problem-solving strategies with emotion regulation techniques.

The PATHFINDER Trial, a new, multicentre study led by Prof Rob Howard at UCL, is aiming to adapt PATH for use in the NHS. Recruitment for this study will be starting in Oxford in July 2019 and will be looking at the effect of PATH on participants' mood over 6 months to establish the clinical benefit and cost-effectiveness of PATH with standard treatment, compared to the standard treatment only.

The full Kiosses et al. (2015) can be found here:

<https://jamanetwork.com/journals/jamapsychiatry/fullarticle/1922089>

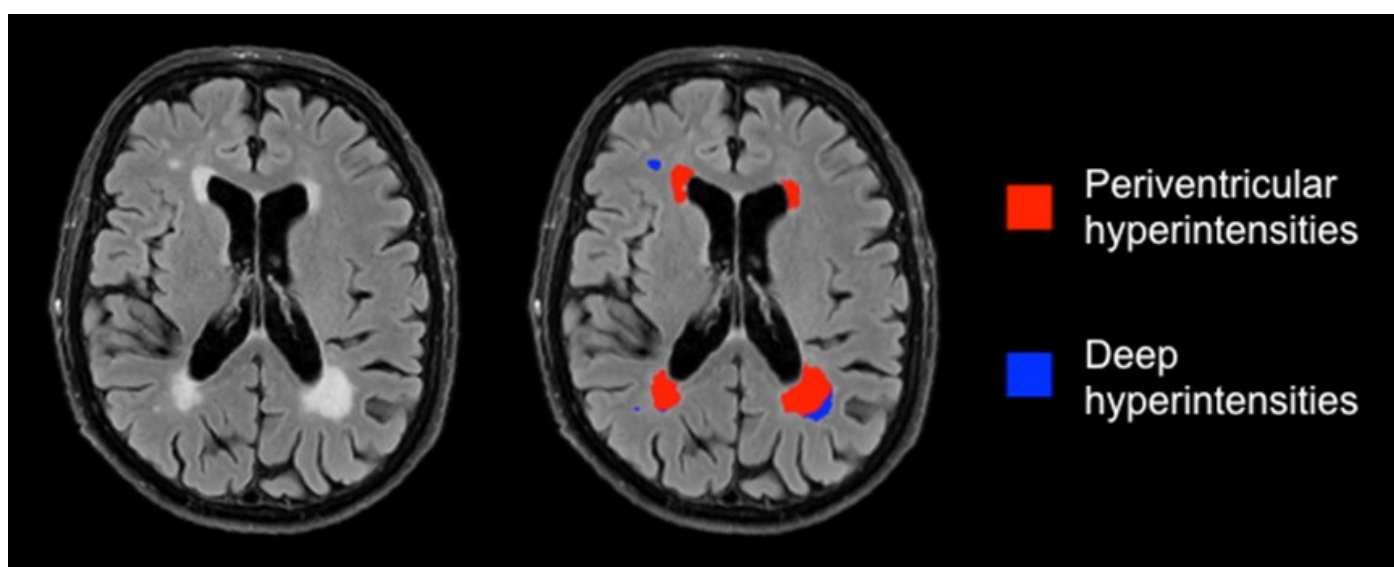
Article Credit: Dr Nina Baruch

Research More information from the same MRI

Magnetic resonance imaging (MRI) is now very frequently performed as a first-line brain imaging technique for a wide range of neurological symptoms. A typical scan will produce images that are used to detect brain lesions or damage (e.g. stroke or multiple sclerosis).

On these images it is possible to detect white matter hyperintensities (so called because they appear brighter than normal on the scan), the origin and impact of which is not still not well understood. It is thought that these hyperintensities are caused by disruption of the brain's blood vessel network and are associated with neurodegeneration e.g. dementia. However, white matter hyperintensities are also very often present in healthy older people and can be seen as a "normal part of ageing". What remains unclear is whether the amount and location of these hyperintensities is important in understanding brain health or risk of developing dementia in the future.

OxDARE Researcher, Dr Ludovica Griffanti, and her colleagues investigated the relationship between hyperintensities, cognitive function and cardiovascular risk factors in older adults. It was observed that the location and number of hyperintensities in the brain had different relationships with cognitive and cardiovascular characteristics. In particular, more hyperintensities located closer to the brain's ventricles (fluid-filled spaces in the brain), also called "periventricular hyperintensities" was associated with lower cognitive scores and higher arterial blood pressure. These findings suggest that we can get more information that is clinically meaningful from routinely performed MRI scans than is currently obtained by standard methods. Future studies will aim to establish the clinical risk associated with hyperintensities and their potential as a measure of disease in clinical practice.



The full paper can be found on NeuroImage

(<https://www.sciencedirect.com/science/article/pii/S1053811917302318?via%3Dihub>).

Article Credit: Dr Ludovica Griffanti

Research Carers' Experience of Assistive Technology

Advances in technology have the potential to assist people with dementia and their carers through 'assistive technology' devices such as electronic medication dispensers, trackers and motion detectors. However, little is known about the carer experience and the impact of these technologies on them. A recent review (publication pending) completed by doctoral student Vimal Sriram, Professor Crispin Jenkinson and Associate Professor Michele Peters from the University of Oxford Nuffield Department of Population Health looked at carers' experience of assistive technology use in dementia care.

The team undertook a systematic search to identify research studies on carers of people with dementia involving the use of assistive technology. The 56 identified studies reported positive and negative findings and looked at a wide variety of assistive technology devices. There were large differences in how assistive technology was used, how the impact of this technology on carers was measured and in the quality of the studies. Competence to use the technology and ethical issues when using assistive technology were themes that emerged from the studies. However, carers generally appreciated using assistive technology.



For more information or to participate in an interview, please visit:

<https://www.ndph.ox.ac.uk/research/health-services-research-unit-hsru/research/carers-experience-of-assistive-technology-use-in-dementia>

Article Credit: Vimal Sriram

Current Opportunities/ Studies

Motivation and Noise in Parkinson's disease (Ethics code: 18/SC/0448)

We are looking for people over the age of 50 (with or without Parkinson's disease) to take part in a study investigating motivation and movement. During movement there is a build-up of 'noise' in the brain that leads to less accurate movements. We are looking at how this build-up occurs and whether motivation or rewards can improve it.

The study will involve 1 visit for 2-3 hours to complete computer-based tasks, in some of which eye movement will be tracked. If you are interested in hearing more, or taking part, please contact Tim.Sandhu@ndcn.ox.ac.uk



Upcoming Events

Research Cycle Workshops—for patients, carers and public

Where: Oxford

When: Various, April-August 2019

Are you interested in learning more about how health research happens, and how patients, carers and members of the public can get involved?



The Oxford Health Biomedical Research Centre is working with local partner organisations to deliver a series of workshops about research and patient and public involvement.

Each workshop covers a different stage of the research cycle, you are welcome to attend as many or as few as you wish. These include: 'carrying out a research study', 'analysing research outcomes' and 'influencing clinical practice'. You can find full details on the Working Together Eventbrite page:

<https://www.eventbrite.co.uk/o/working-together-17980209561>.

Pint of Science: Glia and dementia - more than just the support act

Where: Slug and Lettuce, 1 Oxford Castle, New Rd, Oxford OX1 1AY

When: Wednesday 22nd May, Doors open 18:30pm

Given how often we hear about nerve cells in the brain, you'd be forgiven for thinking they exist in isolation. In reality, there are numerous other cells in the brain, known as glia. They take on important roles and are emerging as key players in Alzheimer's and other dementias. At this event you'll hear from researchers studying glia, who are finding ways to improve how we diagnose and treat dementia.

For more information visit: <https://pintofscience.co.uk/event/glia-and-dementia>



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