

Frimley, UK
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Significant milestones set in world's most detailed brain imaging study to help unlock root causes of dementia

Large population scanning heralds a new era in research to tackle dementia and a wide range of intractable diseases

Having enlisted thousands of Britons and captured detailed information about their health and lifestyle, UK Biobank is now turning its attention to their brains – as part of the global effort to defeat dementia. Around 100,000 participants are expected to be part of the world's most comprehensive imaging project over the next five years, following the launch of a feasibility study.

The pilot phase of the programme has just been initiated and the first 50 subjects have already been successfully scanned using advanced magnetic resonance imaging (MRI) technology from Siemens Healthcare. The study will capture images not only of their brains, but also their hearts and other organs in the quest to unlock understanding into the causes of dementia and diseases of middle to older age.

With the focus on Dementia Awareness Week – 18 to 24 May 2014 – making headlines, and the six month anniversary of the government announcing the doubling of research funding for dementia by 2025¹, excitement is mounting about the potential of this new research.

Non-invasive brain scans of UK Biobank participants, now aged 44-77, are being captured using high-end Siemens medical imaging technology. Data from cognitive testing, a range of physical evaluations, DNA and health records are also being included in this mammoth project. By 2022 UK Biobank expects to have captured about 9,000 cases of Alzheimer's disease, due to the natural ageing of the UK

Biobank population. Combining such data is creating a huge health research resource, one of the largest in the world, for use by bona fide scientists anywhere in the world.

UK Biobank's vast data resource is now open. It is being updated and added to all the time. The promise of high quality images of brain, heart, blood supply and bones in addition to this data will change the face of health research, the project believes. It will galvanise new ways of looking at data, as well as help scientists at the coal face trying to identify key causes of disease and ways to prevent and better treat them.

Professor Paul Matthews, Head of the Division of Brain Sciences at Imperial College, London, who led the experts that developed the UK Biobank imaging plans, states, "Development of treatments to slow or stop dementia is the greatest healthcare challenge facing the developed world. New clues suggest that we need to broaden our research focus on the brain in the context of the whole body and the way it changes with age to find the triggers for Alzheimer's and vascular dementia. We need to study people before and in the earliest stages to confirm mechanisms and test new drugs. UK Biobank will provide an unrivalled resource for these studies with the addition of advanced brain and body imaging to its rich clinical, cognitive, soluble biomarker and genetic dataset. This ambitious programme promises to massively accelerate both public and private therapeutics research for dementia."

He adds, "Commitment by the Medical Research Council to fund the UK Biobank imaging feasibility study is a shot in the arm to dementia research – and the research community will work together to put this tool to best use."

Craig Buckley, Head of Research and Scientific Collaborations at Siemens Healthcare GB&I states, "With a growing ageing population and diagnosed dementia rates on the rise, the race is on to fully characterise the disease. With the help of imaging, we hope to be able to slow the pace, prevent and even cure these syndromes. To date, dementia research has faced great challenges, with limited access to large scale, standardised brain data to help with understanding of the disease. With increasing support from government bodies, research institutions such as UK Biobank can now access cutting-edge imaging technology to ensure every scan is consistent for each participant, helping to create a new wave of data that is more accurate and insightful than ever before."

At the end of 2013, governments of the G8 countries turned their attention to dementia research, committing to more funding to source better treatments and diagnosis tools for the 800,000 people living with dementia in the UK. It is believed delaying the onset of dementia by five years would reduce deaths dramatically². UK Biobank has been recognised as a key support tool, with support received from UK governments, the Wellcome Trust, Medical Research Council and British Heart Foundation.

Notes to editor:

¹. Prime Minister's dementia challenge: More investment in research

http://www.alzheimers.org.uk/site/scripts/documents_info.php?documentID=1886

². Dementia statistics from the Alzheimer's Society

<http://www.alzheimers.org.uk/statistics>

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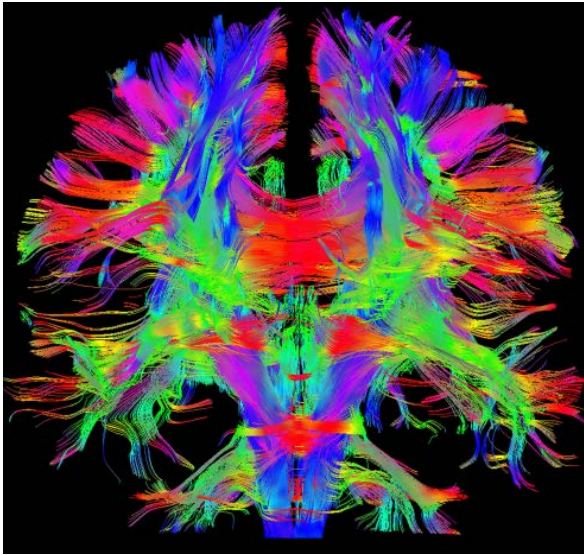
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PICTURE TO BE CREDITED TO SIEMENS HEALTHCARE:

Image of brain taken by Siemens MAGNETOM imaging system



Picture Caption: UK Biobank is capturing images of the brain, hearts and other organs in the quest to unlock understanding into the causes of dementia

