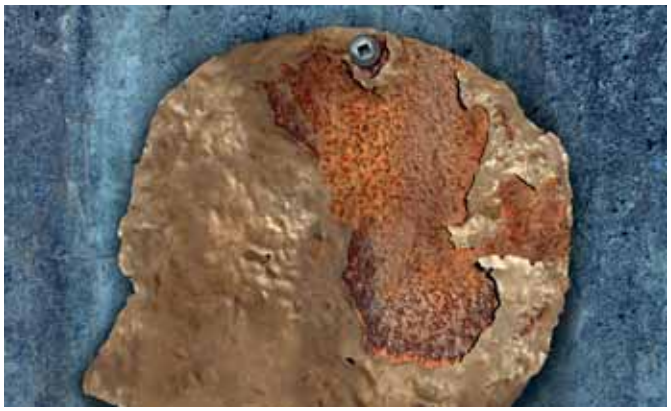

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rely on dendritic spine formation. Dysfunction of spine-formation processes is involved in cognitive decline in normal ageing as well as in pathological conditions such as AD and 'familial fronto-temporal dementia' (FTD), a type of dementia.

European scientists studied the rapid movement and reorganisation via microtubule (MT)-mediated transport of the building blocks of spines. In particular, they focused on the molecule GSK-3 that controls, in part, the phosphate groups bound to the MT-associated protein tau and tau's associated activity. With EU funding of the NEURO.GSK3[1] project, scientists developed preclinical models (transgenic mice and transfected cultured neuronal cells) of tau-related AD and FTD.

Enhanced understanding of the role of molecular transport dysfunction in synaptic spine formation could help explain the similarity in mechanism of clinically diverse neurodegenerative diseases. Identification of a similar mechanism could make the possibility of a single treatment for numerous debilitating diseases a reality.

The project was coordinated by the University of Leuven in Belgium.

1 'GSK-3 in neuronal plasticity and neurodegeneration: basic mechanisms and preclinical assessment'.

Funded under the FP7 specific programme 'Cooperation' under the research theme 'Health'.
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# New global initiative to tackle neurodegenerative diseases

*European countries and research teams have joined forces, pooling national expertise and resources to wage battle against debilitating neurodegenerative diseases such as Alzheimer's. Neurodegenerative disorders are incurable debilitating conditions that lead to progressive degeneration or death of nerve cells. Today, in Europe, over 7 million people suffer from Alzheimer's disease and related disorders. This figure is expected to double by 2020 as the European population ages.*

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In 2010, to tackle this challenge, 22 EU countries launched the first Joint Programming Initiative (JPI) on combating neurodegenerative diseases (JPND) – http://www.jpnd.eu. JPND is a completely new collaborative approach to European health research between countries, with a shared vision to speed up progress towards new treatments, identify preventive strategies and improve patient care. In September 2010, a three-year coordination action in support of the implementation of JPND, entitled JUMPAHEAD[1], was established to help achieve this vision.

JUMPAHEAD partners carried out a mapping exercise of the combined resources and current research status in neurodegeneration in Europe. The resulting mapping data estimates that EUR 370 million is spent annually on research into neurodegenerative disease across Europe, but several areas are notably underfunded, particularly clinical research and research into healthcare and social care. JPND is looking to build capacity in the research areas of most need particularly in clinical and healthcare/social research with the aim of fighting the fragmentation of funding in Europe.

In 2012, JPND countries launched a common strategic research agenda (SRA) for the next five to 10 years, with five scientific priorities identified as key areas of need in order to address the challenge in its totality. The strategy establishes a platform for future EU-wide activity and a reference point for developing national and organisational strategic plans.

Through JUMPAHEAD, and together with all JPND partner organisations, standard procedures for common joint activities have been developed; over EUR 45 million has been made available since 2011, through a number of joint transnational calls for proposals. Four collaborations, including 82 sub-projects, are being funded under the first joint transnational call for European research projects for the optimisation of biomarkers and harmonisation of their use between clinical centres, launched in May 2011 with a total budget of about EUR 15 million. The first phase of SRA implementation (2012-2014) has already begun, with the total projected investment from participating JPND countries over the next three years expected to be over EUR 100 million in cash contributions (importantly, this does not include in-kind resources).

JPND has worked to communicate and disseminate the benefits of participation to both internal and external audiences, and has engaged in strategic relationship-building with key stakeholders. They have also published articles in relevant publications, such as *Lancet Neurology*, *Nature* magazine and the EU's *Parliament Magazine*. Other activities include the creation of a stakeholder database and monitoring exercises to track progress and measure the project's impact. Options for future engagement and partnership with key stakeholders are being considered to address the huge challenge that neurodegenerative diseases pose to health and society across Europe.

The project was coordinated by the National Institute of Health and Medical Research (INSERM) in France.

1 'Coordination Action in support of the implementation of a Joint Programming Initiative for Combating Neurodegenerative Diseases, in particular Alzheimer's disease'.

Funded under the FP7 specific programme 'Cooperation' under the research theme 'Health'.
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