



JPND
research

EU Joint Programme – Neurodegenerative Disease Research

Joint Programming in Neurodegenerative Disease Research (JPND)

Coordinating approaches to research across Europe

Adriana Maggi, JPND Vice-chair
Dementia Conference
Rome 14/11/2014

DEMENTIA

A global health and economic emergency

- **Between now and 2050, over 680 million new cases of dementia will be diagnosed ¹**
- **Global cost of dementia in 2010 is \$604 billion²**

1 – World Alzheimer Report 2012

2 – WHO Dementia Report 2012



What is Joint Programming in Research?

Close to 85% of public research funds in the EU are spent independently by Member States

- Countries working together
 - to identify the core research questions (or the next societal challenge)
 - to define, develop and implement a common research agenda
 - to defragment, avoid duplication and synergize on common research themes
- Implementation of the SRA through voluntarily, a-la-carte, variable geometry activities





We cannot tackle neurodegenerative diseases by acting as single countries

JPND is the largest global ND research initiative led by EU countries, with 28 participating

EU member states

Associated countries

Third countries

Increasing coordination of national research programmes to improve impact and effectiveness

Albania
Austria
Belgium
Canada
Croatia
Czech Republic
Denmark
Finland
France
Germany
Greece
Hungary
Ireland
Israel
Italy
Luxembourg
Netherlands
Norway
Poland
Portugal
Romania
Slovakia
Slovenia
Spain
Sweden
Switzerland
Turkey
United Kingdom

JPND brings together

- Researchers (Basic, Clinical, Healthcare/Social)
- National Funding Bodies
- National Research Strategies and Investments



Organisation



Management Board

- 28 countries represented
- Members mandated to act
- Chair Philippe Amouyel - France

Executive Board

- Vice-Chair Adriana Maggi - Italy
- Robin Buckle - UK
- Mogens Horder - Denmark
- Marlies Dorlochter - Germany

Steering Committee

Executive Board +

- Rainer Girgenrath - Germany
- Edvard Beem - Netherlands

Scientific Advisory Board

- 18 Members, chosen for scientific excellence
- Industry and Patient Organisations represented



Defragmentation – what JPND is all about...



STRATEGIC RESEARCH AGENDA



**ALIGNMENT OF EU COUNTRIES
ON COMMON RESEARCH GOALS**

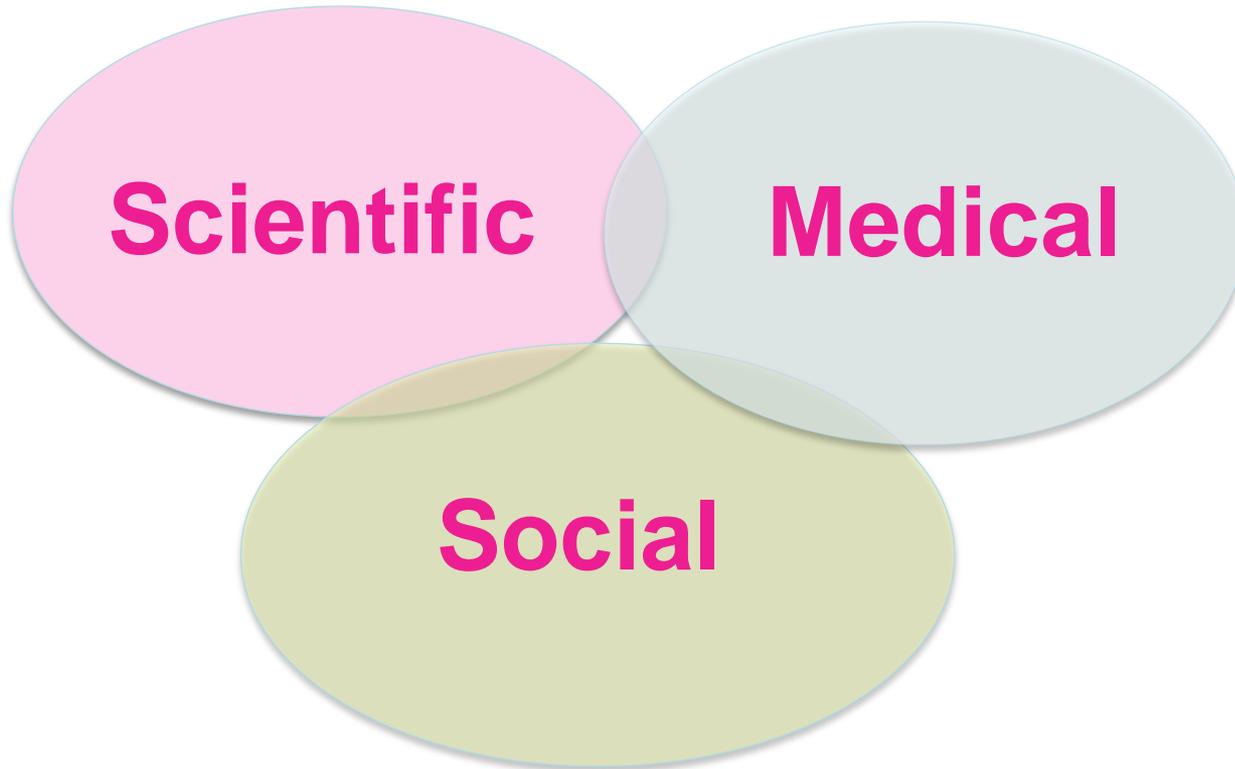


JPND Research Strategy (SRA)

- **Agreed by all JPND Member States + Assoc. Countries**
 - Officially Launched Feb 7th 2012
- **Thematic priorities for future research:**
 - The origins of neurodegenerative disease
 - Disease mechanisms and models
 - Disease definitions and diagnosis
 - Developing therapies, preventive strategies and interventions
 - Healthcare and social care



Scope of JPND Research



Neurodegenerative Diseases?

- **The neurodegenerative diseases that JPND focuses on are:**
 - Alzheimer's disease (AD) and other dementias
 - Parkinson's disease (PD) and PD-related disorders
 - Prion disease
 - Motor neurone diseases (MND)
 - Huntington's Disease (HD)
 - Spinocerebellar ataxia (SCA)
 - Spinal muscular atrophy (SMA)



JPND Research Strategy (SRA)

- **SRA Enabling Activities:**
 - JPND will deliver the SRA within the next ten years through a combination of:
 - Knowing our research capability
 - Opportunities for infrastructure and platforms
 - Working in partnership with industry
 - Working with the regulators
 - Global partnership
 - Capacity building
 - Education and training
 - Connection to policy makers
 - Communication and outreach



JPND Action Groups

➤ Alignment of National Strategies

➤ Alignment of National Activities

➤ Longitudinal Cohorts

➤ Assisted Living Technologies

➤ Industry Partnership

➤ Animal and Cell Models

➤ Palliative Care

➤ Patient + Public Involvement

➤ Optimisation of biomarkers



Action Group Recommendations



“Rapid Action” Call for working groups

26

Aug,
2014

Results from 2014 JPND “Rapid Action” Call for Working Groups on Longitudinal Cohort studies

Ten international working groups to be funded under JPND call

The EU Joint Programme Neurodegenerative Disease Research (JPND) has released the results of a “rapid action” call to support ten groups of leading scientists in finding ways to enhance the use of longitudinal cohort studies for neurodegenerative disease (ND) research.

JPND launched this call on 23rd April 2014 as part of a series of new JPND initiatives, designed to amplify the impact of research by aligning and building upon existing national programmes and initiatives, and to bring a more wide-ranging and multidisciplinary approach to research on neurodegenerative diseases.

The awarded proposals are for top ND scientists to come together and recommend how to address the most pressing issues that prevent full use of longitudinal cohorts. This includes population studies and disease cohorts, both having considerable potential for ND research. Funding decisions were based upon scientific evaluation and



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Tags



Coordination and development of best practice

10 JPND working groups to address methodological challenges for longitudinal cohort studies such as:

- Cognition / Functional assessment
- Biomarkers
- Biobanking
- Imaging
- Health and social outcomes
- Presymptomatic ND



SRA Implementation (2012-2014)

Annual Calls for Proposals

Year	Total fund available	Research Area	No. of Projects
2011 (pilot)	€16M	Optimization of biomarkers + harmonization of their use	4
2012	€18M	Risk and Protective Factors	5
2012	€11M	Evaluation of Healthcare	6
2013	€12M	Cross-Disease Analysis	10
2013	€11M	Pilot Preventive Strategies	5

Centres of Excellence in Neurodegeneration (CoEN)

2011	€6M	Phase I : common resources and methodological approaches	8
2012-13	€8M	Phase II : “Pathfinder” projects	5



Call statistics

Year	Call area of interest	No. of proposals submitted	Budget requested (million €)	No. of proposals recommended for funding	No. of proposals supported	Budget supported (million €)	Success rate (%)
2011	Harmonization of Biomarkers	14	€31	5	4	€14	29%
2012	Risk and Protective Factors	52	€97	18	5	€17	10%
2012	Healthcare Evaluation	22	€29	9	6	€9	27%
2013	Cross-Disease Analysis	90*	€112	23	10	€12.5	11%
2013	Pilot Preventive Strategies	35*	€36	5	5	€7	14%
Total		213	€157m	60	30	€59.5m	18%

* pre-proposals



JPND-supported projects in Risk and Protective Factors

- **APGeM:**
Pre-clinical genotype-phenotype predictors of Alzheimer's disease and other dementia
Coordinator: Tormod Fladby, Akershus University Hospital and University of Oslo, Norway
- **COURAGE-PD:**
COMprehensive Unbiased Risk factor Assessment for Genetics and Environment in Parkinson's Disease
Coordinator: Thomas Gasser, University of Tübingen, Germany
- **PERADES:**
Defining Genetic, Polygenic and Environmental Risk for Alzheimer's Disease using multiple powerful cohorts, focussed Epigenetics and Stem cell metabolomics
Coordinator: Julie Williams, Cardiff University, United Kingdom
- **RiMod-FTD:**
Risk and Modifying factors in Fronto Temporal Dementia
Coordinator: Peter Heutink, German Center for Neurodegenerative Diseases – Tübingen, Germany
- **STRENGTH:**
Survival, Trigger and Risk, Epigenetic, eNvironmental and Genetic Targets for motor neuron Health
Coordinator: Ammar Al-Chalabi, King's College London, United Kingdom



JPND-supported projects

- Pilot Preventive Strategies**

- EURO-SCD:**

Subjective cognitive decline in preclinical Alzheimer's Disease: European initiative on harmonization and on a lifestyle-based prevention strategy **Coordinator: Frank Jessen, Germany**

- MIND-AD:**

Multimodal preventive trials for Alzheimer's Disease: towards multinational strategies
Coordinator: Mia Kivipelto, Finland

- NEUROEXERCISE:**

The effects of an extensive exercise program on the progression of mild cognitive impairment (MCI)
Coordinator: Stefan Schneider, Germany

- ONWebDUALS:**

ONTology-based Web Database for Understanding Amyotrophic Lateral Sclerosis
Coordinator: Mamede de Carvalho, Portugal

- PreFrontAIs:**

Searching for therapeutic interventions in frontotemporal dementia with C9ORF72 repeat expansions in the presymptomatic stage **Coordinator: John C van Swieten, The Netherlands**



PROJECTS SUPPORTED BY JPND

JPND research
EU Joint Programme – Neurodegenerative Disease Research

RiMod-FTD
Risk and Modifying factors in Frontotemporal Dementia

Frontotemporal Dementia (FTD) is a devastating progressive early onset dementia with a strong genetic influence. Currently, seven genes have been identified that explain 50% of familial cases, but how these different genes lead to a very similar clinical phenotype is still an unanswered question. Currently, there is no cure for FTD and for the development of successful therapies it is essential to understand the role of all genetic and environmental risk factors in the disease process and to investigate which factors are important in the progression of the disease in all patients and which are specific for subgroups of patients. We therefore aim to investigate common and difficult affected processes in different groups of FTD patients using a combination of genomic and cell biological approaches on tissue of selected patient groups and corresponding animal and cell model systems. Our integrative approach is novel and necessary for successful therapy development because it allows an unbiased selection of the most suitable targets that can improve our understanding of disease processes and in addition will help identify the key genes in the disease process that are the most suitable targets to modify the disease phenotype and thus provide better choices for therapy development.

Total Funding: To be finalized *
Start Date: January 2014
Duration: 3 years
Coordinator: Peter Heutges
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Project Partners:

- Peter Heutges**, German Center for Neurodegenerative Diseases – Tübingen, Germany
- John Hardy**, University College London, United Kingdom
- John van Swieten**, Maastricht University, The Netherlands
- John C van Swieten and A.S. Smith**, Erasmus MC, Rotterdam, Netherlands
- Philippe Legrand, Inesmaire Barthé, Antoinette Hébert**, Centre de Recherche, Université de la Santé, Belgium
- Philip van Damme**, University Research Center – Leuven, Belgium
- Alain Dubois**, Charité-Campus University, Germany
- Andreas Bartsch**, German Center for Neurodegenerative Diseases – Göttingen, Germany
- Delia Lückenkemper**, Technical University Munich, Germany
- Kristian Wessendorf**, German Center for Neurodegenerative Diseases – Bonn, Germany

*Contributors from participating JPND Member Countries are currently being finalized for the project

JPND-supported projects

- **Cross Disease Analysis**

- **CeBioN:**

Cellular Bioenergetics in Neurodegenerative Diseases: A system-based pathway and target analysis
Coordinator: Maria Ankarcrona, Sweden

- **CrossSeeds:**

Mechanisms of pathogenic protein cross-seeding in neurodegenerative disorders
Coordinator: Hans-Ulrich Demuth, Germany

- **DAMNDPATHS:**

Elucidation of common transcriptional targets in vulnerable Dopamine, MotorNeuron and frontotemporal Dementia disease PATHwayS **Coordinator:** Eva Hedlund, Sweden

- **Fly-SMALS:**

Common RNA-dependent pathways for motor-neuron degeneration in spinocerebellar muscular atrophy and amyotrophic lateral sclerosis **Coordinator:** Jörg B. Schulz, Germany

- **InCure:**

Innate Immune Activation in Neurodegenerative Disease **Coordinator:** Michael T. Heneka, Germany

PROJECTS SUPPORTED BY JPND



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Risk and Modifying factors in Fronto-Temporal Dementia

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Total Funding: To Be Finalised*
Start Date: January 2014
Duration: 3 years
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-  **John C Van Swieten and A.B. Smit**, Erasmus MC, Rotterdam, Netherlands
-  **Fabian van Broeck**, NeuroGene Center, Leuven, Belgium
-  **Alain Dubois**, Copernicus University, Germany
-  **Andreas Bredemeyer**, German Center for Neurodegenerative Disease, Göttingen, Germany
-  **Dirk Scheerlinke**, Technical University Munich, Germany
-  **Kirsten Bredemeyer**, German Center for Neurodegenerative Disease, Bonn, Germany

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JPND-supported projects

Cross Disease Analysis (cont'd)

MissingLink:

Identification and structural characterization of the primordial cytotoxic conformers of the amyloidogenic cascade: Ideal prevention/diagnostic/therapeutic targets in neurodegeneration

Coordinator: [Mariano Carrión-Vázquez, Spain](#)

NeuroGeM:

Identification of genes that modulate the severity of all neurodegenerative diseases

Coordinator: [Jörg Gsponer, Canada](#)

NeuTARGETS:

Targeting the propagation of pathogenic protein assemblies in neurodegenerative disease

Coordinator: [Chiara Zurzolo, France](#)

- ### PrPC&PDK1:

The PrPC / PDK1 / TACE signaling axis at the cross-road of several aggregate-prone protein-associated neurodegenerative diseases [Coordinator: Benoit Schneider, France](#)

SynSpread:

Role and mechanism of alpha-synuclein and ataxin-3 spreading in Parkinson and Machado-Joseph diseases

Coordinator: [Luis Pereira de Almeida, Portugal](#)

PROJECTS SUPPORTED BY JPND





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 **Philip van Broeckhoven**, Ghent University, Ghent, Belgium

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 **Kristian Nevejan**, German Center for Neurodegenerative Diseases – Bonn, Germany

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Partnership with the EC

- Establish programme of co-investment to leverage the value of investments and resources at both national and EC level, to the benefit of Europe
- **Synergy between JPND actions and H2020 programme**
 - First call of Horizon 2020 (Dec. 2013)
 - ERA-NET cofund: Implementing a transnational call with EU co-funding
- **Three Call Topics in preparation for the end 2014/beginning 2015:**
 - Identification of genetic, epigenetic and environmental risk + protective factors
 - Longitudinal cohorts in ND research
 - Advanced experimental models of ND



Pre-call announcement

JPND is the largest global research initiative
aimed at tackling the challenge of neurodegenerative diseases

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Nov,
2014

Joint Transnational Call for Research Proposals – Preannouncement

The EU Joint Programme – Neurodegenerative Disease Research (JPND) will shortly begin a major new cohesive action with the European Commission – the first concrete synergy between JPND and Horizon 2020 designed to address the global threat of neurodegenerative diseases.

As part of this new initiative, **JPND will launch a joint transnational call for proposals in January 2015** aimed at supporting transnational research collaborations in three JPND priority areas:

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