



The EU Framework Programme for Research and Innovation

**HORIZON 2020**

# **Horizon 2020 and brain research**



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Neuroscience sector  
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European Commission

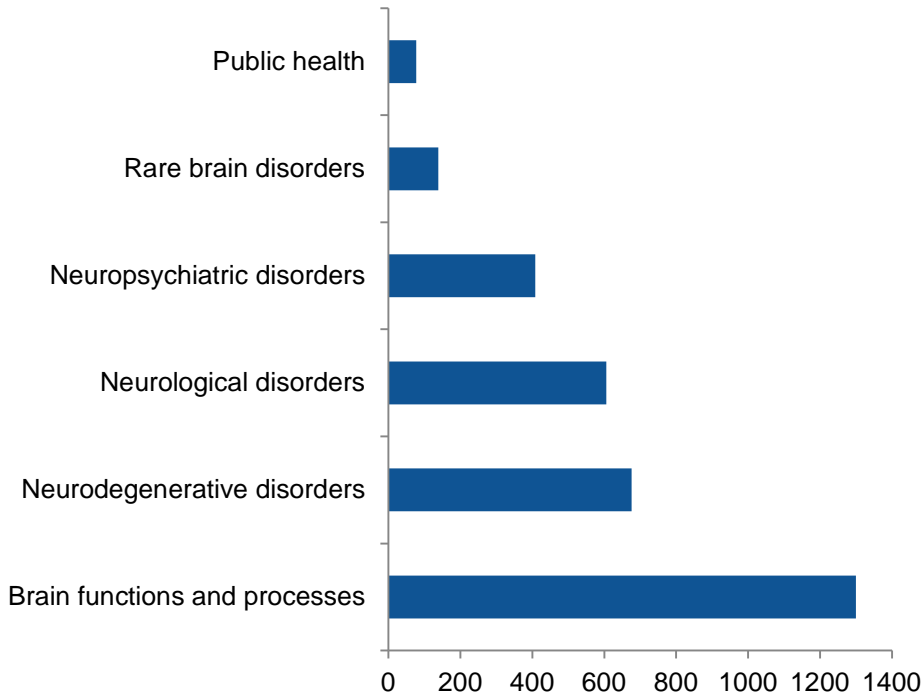
## A global challenge at all age groups

1. **Depression:** 350 million people, in all communities across the world (Source: WHO Fact sheet nr 369, 2012)
2. **Dementia:** 47.5 million people worldwide, 2010 global costs of care \$ 604 billion
  - *By 2050 the estimate is 135.5 million people worldwide*
  - *58% of people living with dementia are in low- and middle-income countries*(Source: WHO Fact sheet nr 362, 2015)
3. **Traumatic brain injuries:** most important cause of disability under the age of 45 (source: InTBIR) and to become the third leading cause of global mortality and disability by 2020 (*The changing landscape of traumatic brain injury research, Lancet Neurol., 2012*)
4. One child in 160 with an **autism spectrum disorder** and subsequent disability, associated costs \$2.3 million per person (Elsabbagh et al., *Autism Res.*, 2012 )

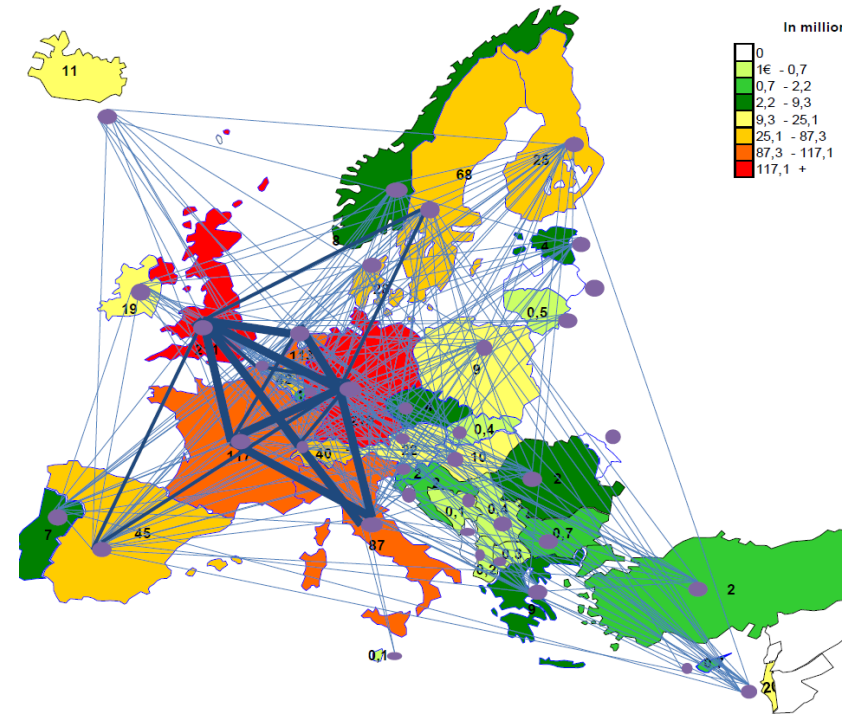


## EUR 3 billion

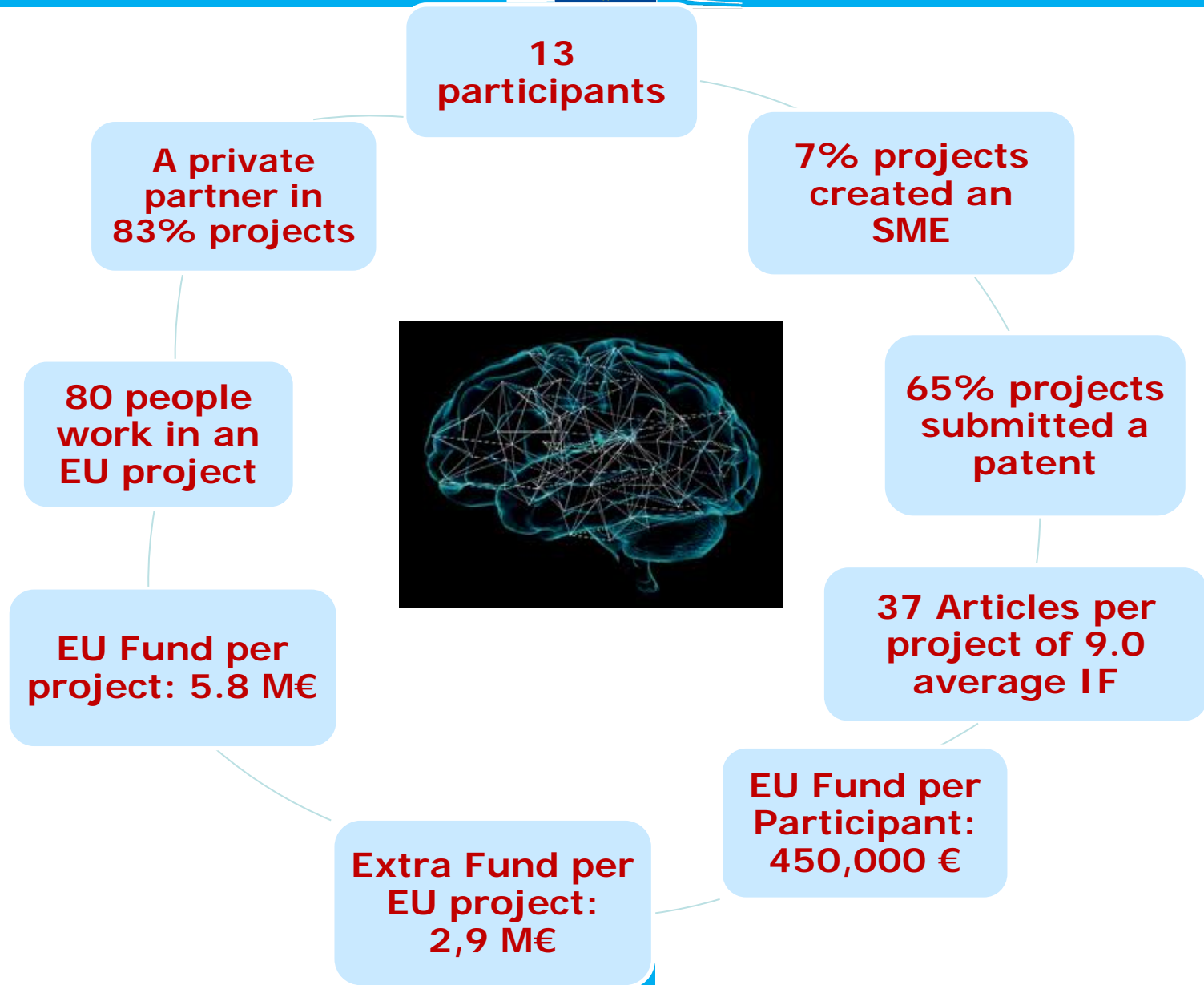
Collaborative research / Frontier research / Training and mobility



Funding by type of research



Over 19,000 Connections



## Key figures

**1163** M€ invested

**202** projects

**2592** participations

**1113** organisations

**59** countries

## First outcomes

(on 96 closed projects from Health Programme)

**3608** publications

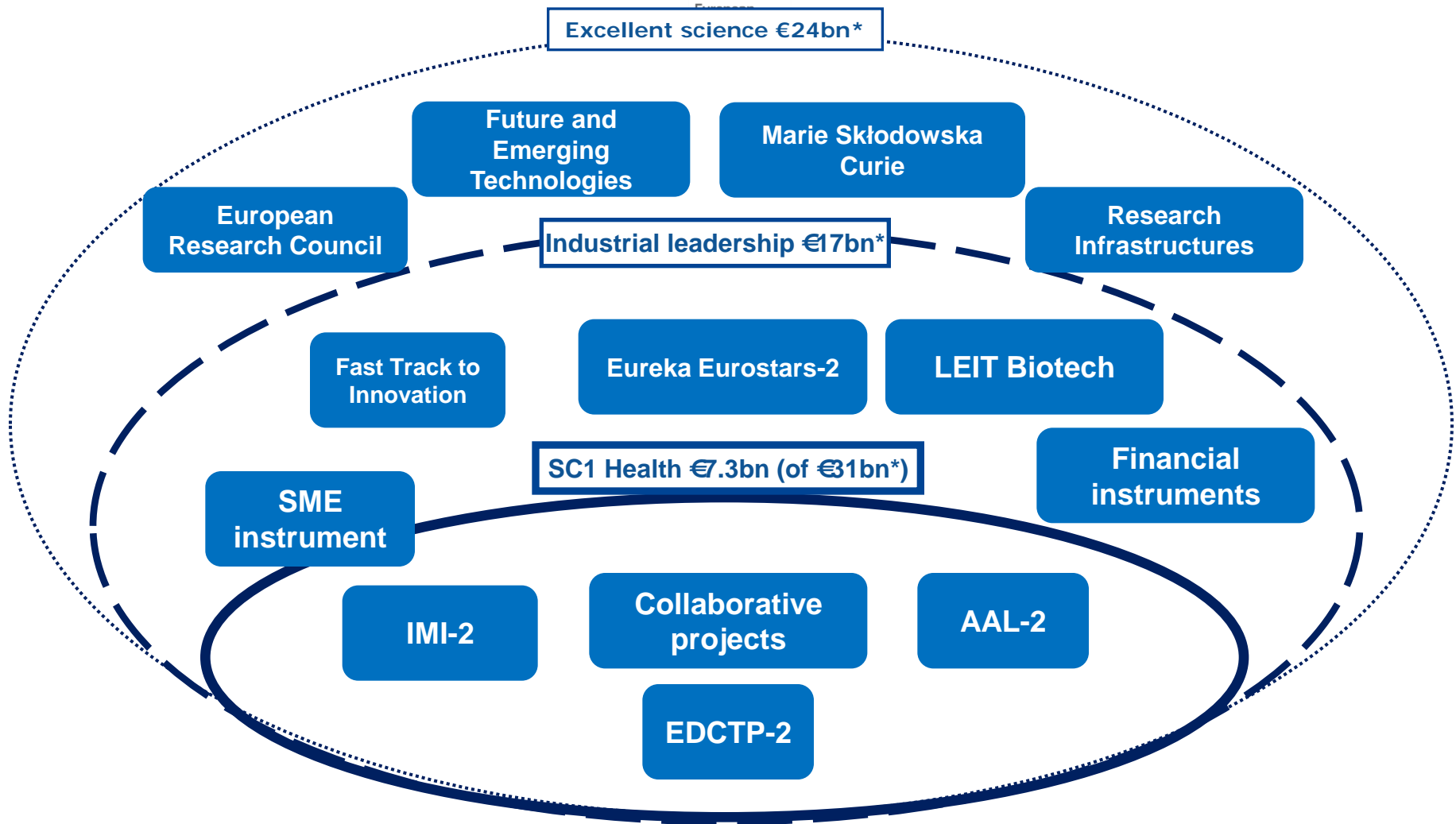
**3,2** average SJR\* (average IF  
of 9.0)

**62** patent applications

**7** spin-offs created

\* SCImago Journal Ranking

# Horizon 2020 and health research



\* Figure to be updated following EFSI investments in 2015

# Where is brain research in Horizon 2020?

European  
Commission

- **EVERYWHERE!**



European  
Research  
Council





# Horizon 2020

## "Health, Demographic change and Well-being"

- *Translates science to benefit citizens*
- *Departs from a disease-oriented approach to better depict biological variations*
- *Provides more opportunity for brain research*
- *First Horizon 2020 brain collaborative projects worth more than € 350 million*



# Health, demographic change and well-being

## 7 Focus Areas



**Understanding health, well-being & disease**

**Preventing disease: health promotion, screening, assessment of risk, better diagnosis and prognosis, vaccines**

**Treating & managing disease**

**Active ageing & self-management of health**

**Methods & data**

**Health care provision and integrated care**

**Specific implementation aspects**



## Opportunities for brain research

### *Examples of topics:*

#### ➤ *Understanding Health, Well-being and Disease*

- SC1-PM-02-2017: New concepts in patient stratification
- SC1-PM-04–2016: Networking and optimising the use of population and patient cohorts at EU level



#### ➤ *Preventing Disease*

- SC1-PM-07–2017: Promoting mental health and well-being in the young

#### ➤ *Treating and Managing Diseases*

- SC1-PM-9-2016: New therapies for chronic diseases
- SC1-PM-10–2017: Comparing the effectiveness of existing healthcare interventions in the adult population

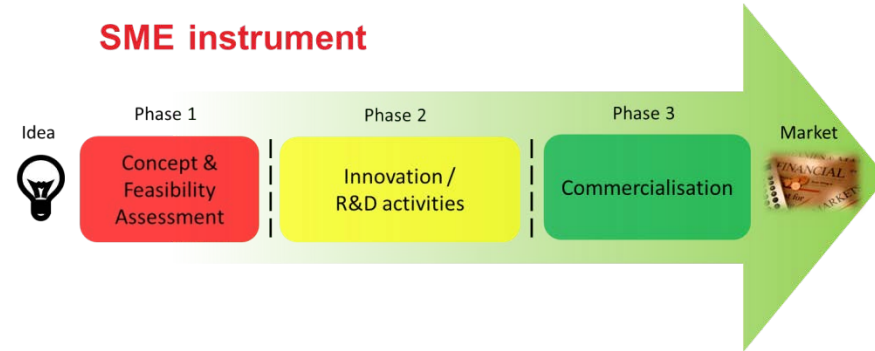


#### ➤ *Methods and Data*

- SC1-PM-17–2017: Personalised computer models and in-silico systems for well-being



## SME instrument



- **SMEInst-05-2016-2017 – Supporting innovative SMEs in the healthcare biotechnology sector**
- **SMEInst-06-2016-2017 – Accelerating market introduction of ICT solutions for Health, Well-Being and Ageing Well**



### THE INNOVATIVE MEDICINES INITIATIVE

The Innovative Medicines Initiative (IMI) is Europe's largest public-private initiative aiming to speed up the development of better and safer medicines for patients.

IMI supports collaborative research projects and builds networks of industrial and academic experts in order to boost pharmaceutical innovation in Europe.

IMI is a joint undertaking between the European Union and the pharmaceutical industry association EFPIA.



**IMI 2: ~€3.2 b**  
**EC: €1.6b+ EFPIA €1.4b + other (€0.2b)**

### IMI2:

- Covers the entire medical research and innovation value chain
- Strategic Research Agenda is based on the WHO Priority Medicine Report renewed in July 2013
- Involves pharmaceutical industries as well as others (diagnostics, imaging, animal health, ICT etc.)
- Supports world class research and innovation leading to breakthrough vaccines, medicines and treatments

- € 146.7 million (EC contribution) to brain research via IMI: Alzheimer, Autism, Depression, Schizophrenia
- IMI Alzheimer's disease Joint Platform (March 2015): overall EC contribution € 58.2 million



- Neurodegenerative & psychiatric diseases in IMI 2's Strategic Research Agenda (2014-2020)
- IMI 2 topics on brain research around e.g.:
  - dry age-related macular degeneration
  - clinical neuropsychiatry and quantitative neurobiology
  - Alzheimer, cognitive impairment and dementia
  - Neuropathic pain



## Joint Programming initiative on Neurodegenerative Disease Research (JPND)

- 30 countries, Member-States led initiative
- Nearly €100 million invested in 7 transnational calls
- 2015: risk and protective factors, longitudinal cohort approaches, advanced experimental models



## Network of European funding for Neuroscience research: NEURON II

- Neuroscience, neurology, psychiatry (18 countries)
- €71.4 million already invested in 7 transnational calls
- 2015: Neurodevelopmental Disorders
- 2015: Neuroethics



# International cooperation



European  
Commission



## Multi-lateral initiatives



[www.irdirc.org/](http://www.irdirc.org/)



[http://ec.europa.eu/research/health/medical-research/brain-research/international-initiative\\_en.html](http://ec.europa.eu/research/health/medical-research/brain-research/international-initiative_en.html)



<http://ihec-epigenomes.org/>



International  
Cancer Genome  
Consortium

<https://icgc.org/>



[www.gacd.org/](http://www.gacd.org/)

**Global Research  
Collaboration for  
Infectious Disease  
Preparedness**



Global Genomic  
Medicine Collaborative

[http://www.iom.edu/Activities/Research/GenomicBasedResearch/Innovation-Collaboratives/Global\\_Genomic\\_Medicine\\_Collaborative.aspx](http://www.iom.edu/Activities/Research/GenomicBasedResearch/Innovation-Collaboratives/Global_Genomic_Medicine_Collaborative.aspx)

Innovation

# International initiative TBI



2011



**InTBIR**

International Initiative for  
Traumatic Brain Injury Research



2015

- **Coordinates clinical research across the full TBI spectrum**
- **Key goals:** better clinical outcomes & lower TBI burden by 2020
- **How?** Through the discovery of causal relationships between treatments and clinically meaningful outcomes
- **First results: agreement on common data elements (CDEs)**
  - development of case report forms for patients characterization
  - facilitates the comparison between studies for ultimately identifying best clinical practices



# The Human Brain Project Flagship

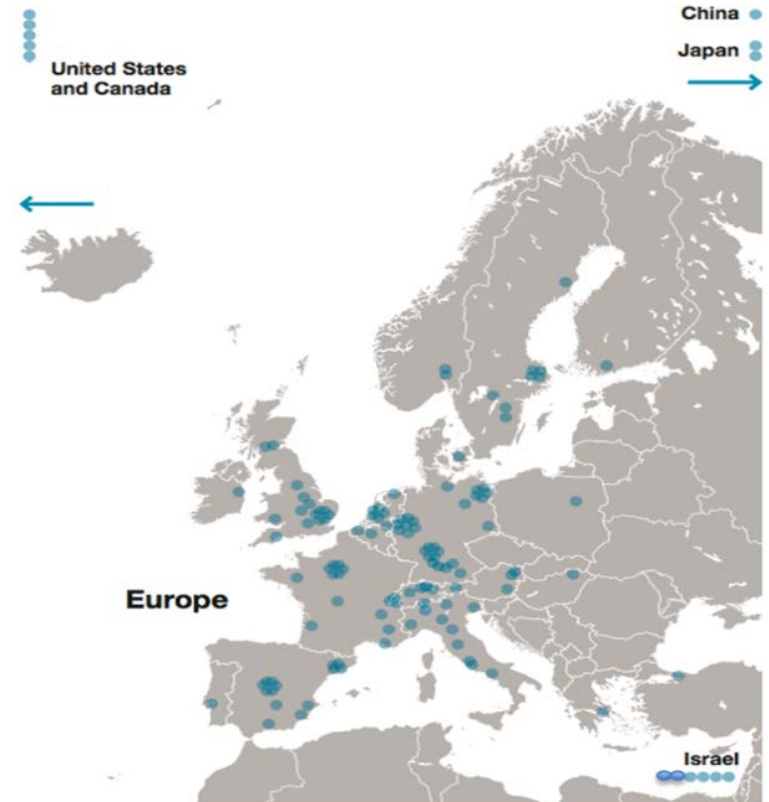


Building an ICT infrastructure for neuroscience, medicine and computing that will catalyse collaborative efforts to better understand the brain and its diseases and emulate its computational capabilities

## Human Brain Project

<https://www.humanbrainproject.eu/>

- A very large-scale European collaborative research initiative: More than 400 scientists from 112 institutions from 24 countries
- A 10 years Research Roadmap, 1 B€ budget
- Ramp-up phase (FP7): 1<sup>st</sup> October 2013 to 31<sup>st</sup> March 2016 – 54 M€ EU funding
- Operational phase (H2020): 01 April 2016 to 2020+: ~50 M€ EU funding / year



## 1. *InnovFin Large Projects*

- Loans from €7.5 m to €300 m; delivered directly by EIB

## 2. *InnovFin MidCap Growth Finance*

- Loans from €7.5 m to €25 m; delivered directly by EIB

## 3. *InnovFin MidCap Guarantee*

- Guarantees to financial intermediaries (banks, etc.)
- Loans from €7.5 m to €25 m; implemented by EIB

## 4. *InnovFin SME Guarantee*

- Guarantees / counter-guarantees to financial intermediaries
- Loans from €25,000 to €7.5 m; implemented by EIF

## 5. *InnovFin Advisory*

- Improve 'bankability' of large projects

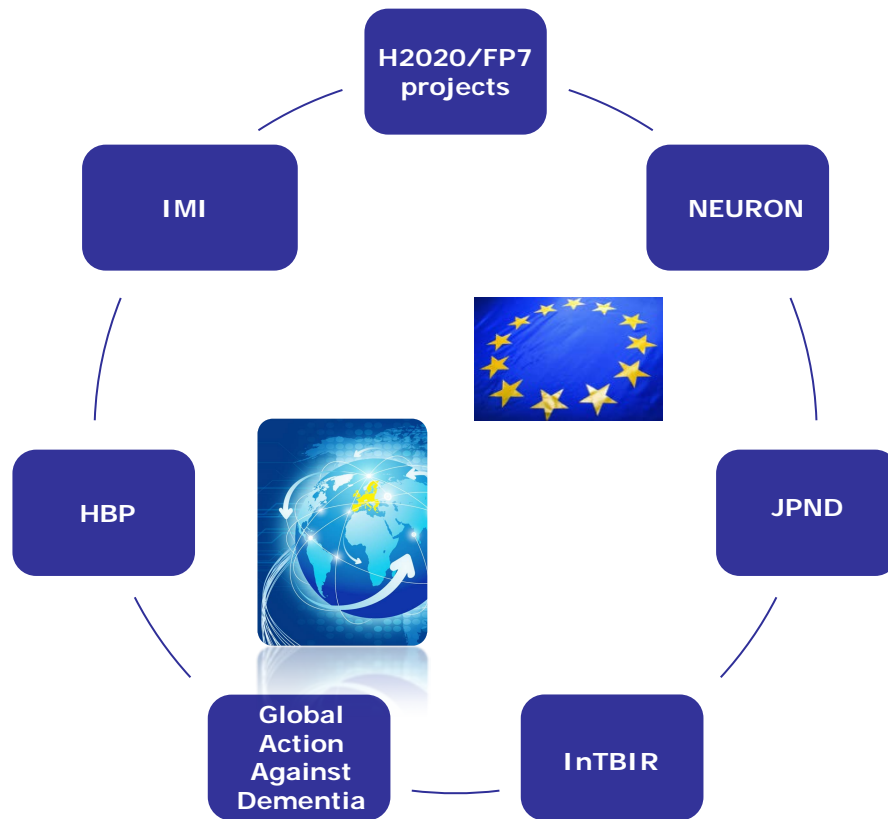




- *Will provide €21 billion in initial funding – including a guarantee €16 billion EC and €5 billion from EIB*
- *Strategic infrastructures including digital, transport and energy*
- *Education, research, development and innovation*
- *For entities of all sizes, including smaller businesses and midcap companies*
- *Projects supported by EFSI shall typically have a higher risk profile than projects supported by EIB normal operations.*



## How to strengthen collaboration?



**Projects (results, data)  
Programmes/Initiatives  
Infrastructures**

# Patients at the heart of R&I



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Source: Fotolia

## In projects

- Partners
- Through ethics board, safety monitoring board, and patient input platform
- Offer patients' perspective on recruitment, study design, project communication
- Translate results in lay language, modify guidelines to better fit patients' needs, contribute to dissemination activities...

## In policy design

- Work programmes based on wide consultations:
  - Advisory group: representative of European Patient Associations
  - Workshops: participation patients
- Horizon 2020 topics are patient-centred
- Many events are triggered by patient organisations



**Horizon 2020: taking part is the  
best way to ensure *your*  
priorities are met!**

**Thank you!**