

#BRAINHEALTHCONFERENCE2024

9–10 | December | 2024

Towards a Strengthened European Cooperation in Brain Health Research

Budapest

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Starter Kit

**practical guide for joining European Brain Health
collaborations**

The conference “Towards a Strengthened European Cooperation in Brain Health Research,” hosted by Hungary’s National Research, Development, and Innovation Office (NRDIO) in partnership with the European Commission under the Hungarian EU presidency, represents a pivotal step in tackling one of Europe’s most pressing health challenges. Held in Budapest on December 9-10, 2024, the event gathered leading scientists, policymakers, and stakeholders from across Europe to encourage interdisciplinary dialogue and advance collaborative initiatives in brain health research.

As the conference provided a comprehensive overview of main issues and achievements of where Europe stands in supporting Brain Health research, this practical guide is provided to help stakeholders understand the role and dynamics of Brain Health initiatives, the role of this domain in the Framework Programmes, how research with multi-stakeholder approach should be conducted and why this is important in order to maximize societal impact. This brief, clear, easy-to-understand material is expected to be a great help for newcomers to be more confident in the international Brain Health research scene when they would like to find collaborating partners and join consortia. This online brochure is available publicly on the conference website and is distributed through the European ERA-NET and CSA projects and the Health NCP network.

The evolving European Partnership for Brain Health, presented during the conference, offers a strategic framework for integrating research efforts, improving data sharing, and scaling up innovations to address Europe’s growing brain health challenges. Speakers, including European Commission representatives, emphasized the importance of fostering collaboration among key players, drawing attention to the future European Partnership for Brain Health. She also highlighted that bridging the gap between research and the market is essential for success.

By uniting diverse stakeholders and leveraging Europe’s collective expertise, the Budapest conference has laid the groundwork for a more resilient, inclusive, and impactful approach to brain health research, ensuring that scientific advancements translate into tangible benefits for millions of Europeans.



01

Defining brain health

According to the definition of the World Health Organization (WHO), “brain health is the state of brain functioning across cognitive sensory, social-emotional, behavioral and motor domains, allowing a person to realize their full potential over the life course, irrespective of the presence or absence of disorders”. The concept of brain health involves multiple disciplines, including neurology, psychiatry, and sensory organ disorders. Addressing these interconnected areas requires an integrated

approach that unites scientific research, healthcare, and public engagement to ensure better prevention, diagnosis, and treatment strategies. To move forward in brain health research, it is essential to create a holistic ecosystem. This includes improving the translation of brain health innovations into practice, increasing capacity, enhancing collaboration between stakeholders, and strengthening research infrastructures.



02

The challenges and opportunities of brain research

Brain research is a fast-growing field with the potential to improve the lives of people affected by neurological and mental disorders. However, significant challenges remain in translating research into actionable results for patients, caregivers and health care systems across Europe. Addressing these challenges requires a multidisciplinary approach that fosters international collaboration and maximizes the impact of research and innovation activities.

Neurological and mental disorders are among the leading causes of disability and mortality in Europe and worldwide. The burden on individuals, caregivers and health systems is enormous and places a significant strain on health resources, social support structures and the economy as a whole. The increasing rate of these disorders highlights the urgent need for more effective prevention mechanisms.

One of the biggest challenges lies in the complexity of the brain, which requires close collaboration between researchers of different fields, such as neurology, psychology, medicine and even sociology. It is clear that more well-coordinated research and innovation is needed between these fields to deliver improved and personalized solutions for patients and health care professionals as well as better evidence for policy makers.

Existing initiatives in brain research provide a strong foundation, but further strengthening of the research environment is essential. Equal access to sustainable infrastructures and resources across Europe remains a critical issue that requires long-term investment and support from national governments, regional actors and the European Union. Despite the large public and private investment in brain research in the last decades, the expected breakthroughs in treatment have not been achieved at the expected pace. To speed up this process, we need to capitalize on existing infrastructures, while fostering closer innovation and increasing capacities.

Involving the experience of patients, affected family members and caregivers in the research process is essential, as their insights provide unique added value that can inspire more patient-centered innovations that have real-life effect. The translation of high-quality research results into practical technologies and products is clearly a big challenge today, but is essential to advancing treatment solutions. Focusing on research and innovation at the international level plays a key role in shaping the future of brain health and improving the lives of millions of patients across Europe.

03

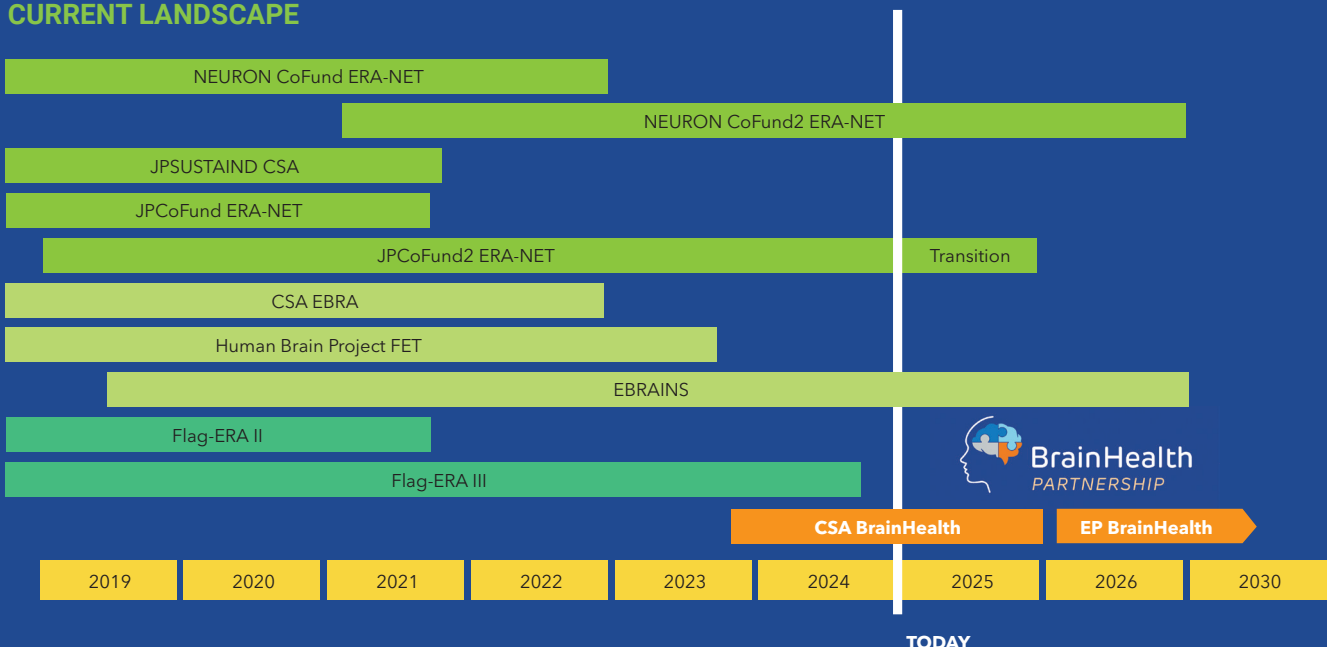
EU Initiatives

Over the past decade, brain health has become a high priority in European policy-making, with steadily increasing funding each year. Strengthening brain research is a central objective of Horizon Europe, the EU's research and innovation programme, and will continue to get more recognition in the following Framework Programme as well. Creating synergies with other initiatives, such as EU4Health, and collaboration with relevant stakeholders through public-private and public-public partnerships continues to be a priority of the European Council in the shaping of future priorities. Right now, the most important goal is to create impact-driven approaches to increase the exploitation of research results.

A number of EU-funded projects contribute to brain health research, including the JPCOFUND ERA-NET, the FET human brain project, EBRAINS, the FLAG-ERA II and III, the NEURON COFUND ERA-NET and the EBRA CSA. The CSA BrainHealth plays a vital role in laying the foundations for the future European Brain Health Partnership. This preparatory phase aims to gather knowledge and share data among stakeholders and focuses on developing a common strategic research and innovation agenda in collaboration with all relevant partners. Strengthening the brain health ecosystem, facilitating intensive dialogue with patients, citizens, the private sector and global partners is another key priority to ensure an inclusive approach to brain health.

Detailed comparison chart of EU initiatives leading to European Partnership for Brain Health

CURRENT LANDSCAPE



Name	Aim	Duration	Nr. of Joint Calls	Focus topics/areas:	Website
Neuron CoFund ERA-NET	The ERA-NET NEURON Cofund was designed to pursue the vision of a European and international Brain Research Area through which the burden of brain diseases for patients and society can be considerably lowered. The means to address this vision is joint funding of excellent translational and clinical research into disorders of the brain and nervous system across national borders.	2016-2022	7	<i>Biomarkers</i> Brain-Body Interactions Cerebrovascular ELSA of Neuroscience External Insults Mental Disorders Networking Chronic Pain Neurodegeneration Neurodevelopmental Disorders Neuroinflammation New Methods New Technology Resilience in Mental Health Sensory Disorders Stroke Synaptic Dysfunction	https://www.neuron-eranet.eu/about/consortium/neuron-cofund/
Neuron CoFund2 ERA-NET	The ERA-NET NEURON Cofund2 is a funding platform focused on brain-related diseases and disorders of the nervous system and holds a strategic position in bringing pre-clinical and clinical research communities closer together and fostering translational research, while covering the entire value chain.	2021-2025	6	Neurodegeneration Neurodevelopmental Disorders Neuroinflammation New Methods New Technology Resilience in Mental Health Sensory Disorders Stroke Synaptic Dysfunction	https://www.neuron-eranet.eu/about/consortium/neuron-cofund2/
JPSUSTAIND CSA	The overall aim of JPsustainD is to support the development and extension of the capacities of the EU Joint Programming Initiative on Neurodegenerative Diseases, in particular Alzheimer's (JPND). JPsustainD aims at creating the dedicated structure responsible for long-term JPND management and implementation, and extension of JPND membership to EU Member States and other countries and initiatives not yet participating.				https://www.inserm-transfert.fr/projetcollaboratif/jpsustaind/
JPCoFund ERA-NET	The ultimate goal of the EU Joint Programme - Neurodegenerative Disease Research (JPND) initiative is to find cures for neurodegenerative diseases and to enable early diagnosis for early targeted treatments. However, it is not possible to give definitive predictions on how long this might take to happen. This joint transnational co-funded call is launched in partnership with the European Commission under the ERA-NET Co-fund scheme with the aim to tackle this leading medical and societal challenge faced by our society.	2014-2019		<i>JPND diseases:</i> 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)	https://neurodegenerationresearch.eu/initiatives/jpcofund/
JPCoFund2 ERA-NET	The primary goal of the JPco-fund 2 initiative is to coordinate and enhance research efforts across Europe in the field of neurodegenerative diseases at three different levels: the ERA-level, by delivering a transnational call with EU-cofunding, resulting in grants to research groups with a view to scale-up the implementation of the JPND Research Strategy. the JPND-level, through the annual transnational calls for proposals and alignment actions/action groups without EU co-funding on the various topics emerging from the renewed Research and Innovation Strategy. the Member Country-level, by helping to implement and link National Plans and Strategies.	2019-2024	2	<i>4 panels:</i> Significance and Achievements of EBRA Translation from basic to clinical research Digital Innovation, Technology, and Data Sharing Patient and Public Involvement	https://neurodegenerationresearch.eu/initiatives/jpco-fund-2/
CSA EBRA	The EBRA project was created as a catalysing platform for brain research stakeholders (researchers, clinicians, patients, governments, funders and public institutions) to streamline and better co-ordinate brain research across Europe while fostering global initiatives. EBRA aims at reducing the fragmentation and duplication of research efforts and at fostering synergies through enhanced coordination of brain research efforts at the EU and global level.	2018 to 2022		<i>4 panels:</i> Significance and Achievements of EBRA Translation from basic to clinical research Digital Innovation, Technology, and Data Sharing Patient and Public Involvement	https://www.ebrains.eu/projects/ebra

Name	Aim	Duration	Nr. of Joint Calls	Focus topics/areas:	Website
Human Brain Project FET	The primary objective of the Human Brain Project is to create an ICT-based research infrastructure for brain research, cognitive neuroscience and brain-inspired computing, which can be used by researchers world-wide.	2013-2023		<p><i>Subprojects:</i></p> <ol style="list-style-type: none"> 1. Mouse Brain Organisation: Understanding the structure of the mouse brain, and its electrical and chemical functions 2. Human Brain Organisation: Understanding the structure of the human brain, and its electrical and chemical functions 3. Systems and Cognitive Neuroscience: Understanding how the brain performs its systems-level and cognitive functional activities 4. Theoretical Neuroscience: Deriving high-level mathematical models to synthesize conclusions from research data 5. Neuroinformatics Platform: Gathering, organising and making available brain data 6. Brain Simulation Platform: Developing data-driven reconstructions of brain tissue and simulation capabilities to explore these reconstructions 7. High-performance Analytics and Computing Platform: Providing the ICT capability to map the brain in unprecedented detail, construct complex models, run large simulations, and analyse large volumes of data 8. Medical Informatics Platform: Developing the infrastructure to share hospital and medical research data for the purpose of understanding disease clusters and their respective disease signatures 9. Neuromorphic Computing Platform: Developing and applying brain-inspired computing technology 10. Neurorobotics Platform: Developing virtual and real robots and environments for testing brain simulations 	https://www.humanbrainproject.eu/en/
EBRAINS	EBRAINS is on a mission to revolutionise how neuroscience is conducted. The digital ecosystem that we provide enables advances in brain research that translate to innovations in neuroscience, healthcare and technology.			<p><i>Focus areas:</i></p> <ul style="list-style-type: none"> Accelerating brain research and innovation Making brain health a public health priority Trasnlating brain knowledge into technological advances 	https://www.ebrains.eu/
FLAG-ERA II	FLAG-ERA gathers most regional and national funding organisations (NRFOS) in Europe with the goal of supporting the Future and Emerging Technologies (FET) Flagship concept and more specifically, the FET Flagship initiatives Graphene and Human Brain Project (HBP). FLAG-ERA contributes to the construction of the two Flagship initiatives on graphene and human brain research, and also offers support to the four non-selected pilots to progress towards their goals with adapted means.	2016-2021	1	<p><i>Focus areas:</i></p> <ul style="list-style-type: none"> Biotechnology Energy Environment Health Information and communication technologies Materials Nanosciences and nanotechnologies 	https://www.flagera.eu/
FLAG-ERA III		2018-2023	3		

The European Partnership for Brain Health

The European Partnership for Brain Health is an ambitious initiative set to launch in the beginning of 2026, with a duration of 7+3 years. Establishing a holistic approach of brain health, it plans to address both mental and neurological issues, with the prioritization of the development of preventive, diagnostic, and therapeutic treatments for brain disorders that are accessible to society. The key focus areas prioritized within the initiative are preventative health, mental health, treatments for degenerative illnesses, and autism research.

This partnership seeks to create Strategic Research and Innovation Agenda (SRIA), which aligns the efforts and funding from EU Member States and Associated Countries. The primary goal is to ensure that research results are effectively translated into practical applications, by capitalizing on existing initiatives and strengthening cooperation between researchers and industry. The initiative is aligned with broader EU priorities, such as sustainability, competitiveness, and security.

The European Commission envisions this partnership as a foundation for a solid brain health research ecosystem that addresses the many unmet needs and challenges in this field through collaboration. Discussions with Member States and Associated

Countries are ongoing regarding the specific details, with Germany leading the coordination. Expected partners include national funding organizations, with the active participation of researchers, health-care professionals, patient organizations, the private sector, policymakers, and regulators.

The vision of the European Partnership for Brain Health is to achieve improved brain health for all, developing scientific knowledge as a ground to promote brain health throughout lifetime, to prevent and to cure diseases as well as to improve wellbeing of people living with neurological and mental disorders in Europe and beyond.

The mission is to support brain health research and innovation by strengthening transnational collaboration and alignment and to promote the translation of results into tailored solutions for prevention, diagnosis, treatment and care accessible for all.

The initiative will be implemented as a co-funded European Partnership within the 2nd Strategic Plan of Horizon Europe, Cluster 1. It is expected to receive a contribution of 100-150 million euros from the European Commission, with Member States and Associated Countries providing an additional 200-300 million euros in total.

General objectives:

Promoting wellbeing throughout the entire life course and improving scientific knowledge to strengthen prevention of disorders at individual and community levels, through the identification of best practices and evidence-based approaches for applicable health policies.

Promoting the uptake of scientific breakthroughs and using an enhanced understanding of brain functioning to deliver accessible and tailored solutions for diagnosis, treatment and care and to improve the quality of life for those living with mental and neurological disorders and their caregivers.

Make the European Partnership for Brain Health a trusted and efficient collaboration structure at the forefront of brain-related research and innovation together with international partners.

Priorities

1

Promoting brain health and preventing brain disorders

Taking a proactive approach requires identifying the determinants of brain health and understanding how these affect neurological and mental wellbeing. Prevention strategies should take a life-long perspective and address risk factors from as early as childhood. Research should also explore the effects of the physical and social environment, and contribute to understanding the compensatory mechanisms of a healthy brain, that can provide insights into possible solutions.

2

Understanding the causalities of brain diseases

Developing a deeper understanding of the causal mechanisms of brain diseases is crucial for early detection, advanced diagnosis and effective treatment. This includes doing research on the origins of symptoms and syndromes, improving diagnostic methods by unravelling multifactorial diseases and comorbidities, and clarifying the progression from prodromal to symptomatic states. Research efforts should focus on developing effective pharmacological, behavioral and digital interventions, identifying biological and digital biomarkers, and improving disease stratification to enable personalized treatment.

3

Improving care and support for people living with brain conditions and their caregivers

To maximize the impact of scientific findings, research results need to be translated into clinical practice. The focus should be on assessing the cost-benefit of early diagnosis and therapeutic interventions to ensure their effectiveness in health care systems. Treatment must meet the needs of patients and caregivers. The sharing of best practices can increase citizens' participation in their own health trajectories and inspire patients to tell their own stories, helping future initiatives become better.

4

Integrating the social, ethical and legal dimension to advance research and innovation for brain healththeir caregivers

Advancing brain health research requires broader social, ethical and legal considerations. This includes the involvement of different stakeholders - patients, researchers, decision makers and industry - in the development of policies. Ensuring equality in brain health is a critical objective to guarantee that developments benefit all of European society, regardless of personal socio-economic circumstances. Developing appropriate metrics also helps to assess the impact of brain diseases on patients and families, while evaluating the effectiveness of interventions.

Transversal priorities

There are some overarching goals that contribute to the impact of brain health research, focusing on areas such as efficiency, collaboration and ethical integrity. The lack of science-based solutions in the field of brain health need to be addressed and research efforts need to be directed towards increasing the socio-economic value of brain health innovation. Sharing existing resources and data will foster more effective and sustainable results, and also help the reproducibility of scientific findings, which will make collaboration easier. In a field like this, it is also essential to incorporate ethical considerations into the research practice, ensuring that studies (especially those involving patients) are transparent, responsible and respect private data. Encouraging a holistic view of brain health is important in the shaping of the next generation of professionals across the healthcare field to foster greater collaborations. In addition, European cooperation should also be promoted to encourage the sharing of best practices, innovation, new technologies, and coordinate research efforts across borders. The European Partnership for Brain Health is expected to make sure research in the field progresses in a cohesive and impactful way for societal benefit.

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