

CSA BRAINHEALTH

EP BrainHealth SRIA

Framework document

Preamble.

This document is a framework concept for the Strategic Research and Innovation Agenda of the future European Partnership (EP) BrainHealth. It has been developed by the Coordination and Support Action “Designing a European Brain Health Landscape”, CSA BrainHealth based on the work of previous initiatives as well as input by the CSA partners and interested funders. It outlines the strategic priorities and the main lines of action for the future partnership, while encouraging maximum engagement of Member States and Associated Countries, the private sector as well as relevant stakeholders to join forces and align efforts and funding. It is also a starting point for involving a broader range of partners, scientific and stakeholder representatives as well as the general public to generate a joint and ambitious research and innovation programme for the future EP BrainHealth. The ultimate goal is to improve quality of life through brain health promotion.

Foreword.

According to the World Health Organisation, *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 (1)*. The CSA BrainHealth embraces this definition, in an inclusive manner including the relevance of mental health in our approach and in the context of the future partnership. The CSA Brain Health recognizes that neurological and mental disorders are a leading cause of disability in Europe and worldwide which place a great burden to patients, families, care-givers, health care systems, and societies (2, 3, 4, 5). Therefore, preserving Brain health is a major societal, medical and scientific challenge requiring the involvement of a wide variety of professionals and society in particular with regard to the current demographic, environmental changes and human crises experienced in recent years.

The CSA aims to develop the groundwork for a European Partnership to contribute to translate scientific breakthroughs and best practices to optimize brain health for all citizens while boosting European leadership in the field. The CSA BrainHealth will merge existing resources in the brain health space to enable basic, translational, clinical and social research as well as technological efforts; and engage stakeholders from different backgrounds to accelerate the impact of scientific knowledge, societal and technological innovations on relevant outcomes for society.

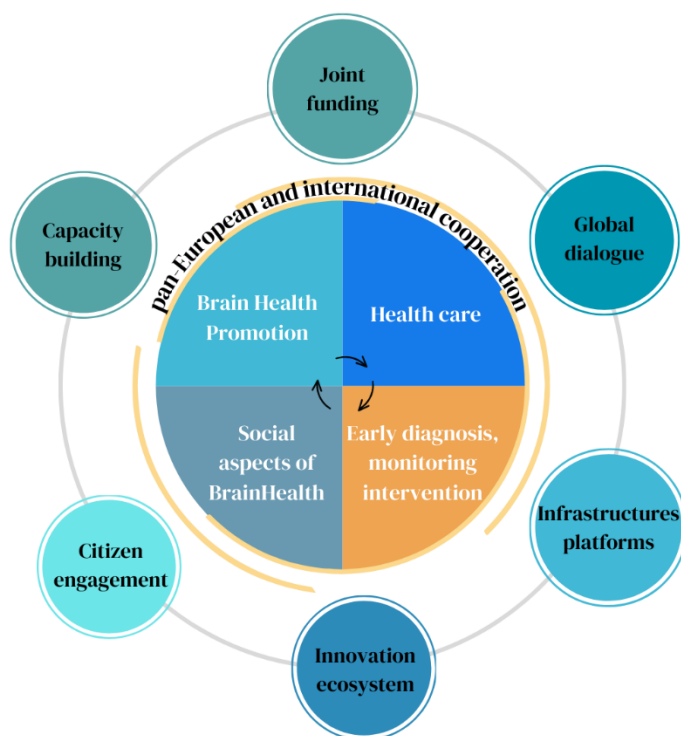
Brain research is a rapidly evolving field and a priority area worldwide. From 2007 to 2019, the European Commission and leading European brain research initiatives have allocated an estimated €6 billion across 4,000 brain research projects, an average of €500 million per year (6); while recent times have seen the launch of multiple brain health strategies at national and global levels, including mental and neurological health plans. The overarching challenges posed by preserving optimal brain health requires transdisciplinary and transnational cooperation as well as the strong engagement of research institutions, policy makers, regulators, health care providers, industry expert and civil societies.

The European Commission as a major player in the field has involved, during the last decade, member states in initiatives dedicated to the alignment and strategic and financial defragmentation of brain health research ([ERANET NEURON](#), [JPND](#), [HBP/EBRAINS](#) and [EBRA](#)). Through the CSA BrainHealth, the EC has established a platform of exchange among funding organizations, ministries, infrastructures, research organizations, patients associations and scientific societies to capitalize on previous achievements and convey forces to better structure the European brain health and research community with the clear ambition to enlarge the vision and the mission of the EP BrainHealth beyond

the scope of the individual predecessor initiatives and scale up the capacity to address the scientific, medical and societal challenges with relevance for citizen's and patients' lives in health and in disease.

To achieve this goal, active engagement of patients, caregivers and joint actions bringing together the European Commission, national ministries, public and private funding organizations in various countries and regions, researchers, healthcare professionals as well as innovators and regulatory bodies will be pursued. Solid links with complementary actions in the field as well as with available platforms, infrastructures and services will be established. The CSA will enrich its approaches by bridging with leading global initiatives in the field of brain research and brain health and with initiatives dedicated to tackle major global challenges such as climate changes and resilience to pandemics.

The outcomes of such an effort should promote the use of scientific evidence and dictate best practices and ambitious research and health policies to inspire global partners and transform European Health Care systems to promote egalitarian, individual and socially relevant wellbeing through brain health prevention, treatment and care of brain diseases to allow each person to satisfactorily develop his/her own diverse capacities with a life course perspective.



The figure illustrates the organization of the described priorities

direct and/or indirect impact on brain health of worldwide threats, especially pandemics and climate change, will also be addressed.

Improving early diagnosis, monitoring and intervention for people living with brain conditions. This area will be dedicated to reduce burden and mortality associated to brain disorders. A transversal approach will be adopted to tackle common manifestations to multiple conditions affecting the function of the brain and hence the quality of life. The activities will be grounded on scientific discoveries, social and technological innovations and developed in close dialogue with healthcare professionals, health-related biotech industries, regulatory bodies while seeking the active role of those carrying the burden of brain dysfunction to ensure the relevance and efficacy of the approaches.

The CSA BrainHealth consortium has already identified four priority areas for a future research and innovation program:

PRIORITY AREAS

Brain health promotion. This area will be dedicated to identify and promote factors capable of protecting brain health (including mental health) and increasing citizens resilience, as well as promoting early, affordable, fair and sustainable prevention of conditions affecting the brain function. Particular attention will be paid to address brain health, resilience and vulnerability with a dynamic and lifetime perspective and considering diversity as well as demographic, cultural and socioeconomic context; while addressing sociocultural and regional inequities in health care. The

Specific aims will be to enhance the early detection and diagnosis of diseases/disorders, understanding factors of progression (including lifestyle and cultural aspects), improve monitoring and therapeutic interventions tailored to the individual biological, demographic and environmental context; and compatible with lifestyle at all ages. To reach this ambition, connections will be established among clinical, experimental and theoretical approaches as well as social sciences (3, 4, 5, 6, 7).

Improving care and support for people living with brain conditions and their care-givers. The envisaged challenges will be 1) to delay the need for institutional care and 2) to increase, improve and diversify the offer of care options. The ultimate goal will be to reduce the personal, economic and social burden of disease while preserving social links and active life, to safeguard personal dignity, wellbeing and quality of life for all those affected by the condition including care-givers. In this context the EP BrainHealth will have the capacity to gather structured evidence from robust grounds of implementation science (8) to capitalize on resilience factors and approaches with the potential to appropriately steer actions addressing the needs of European Health Care systems.

Lead the reflection on the social dimension in the field of brain health. The EP BrainHealth puts together all the expertise needed to jointly develop gold standard practices and policy concerning ethical, social and legal aspects in brain research, health care and technology; while promoting the development of responsible innovations in the field. The responsible sharing of high-quality research and clinical data will be addressed as part of this pillar, particularly through the engagement of European and national infrastructures.

The EP BrainHealth will be a platform to share information and experience concerning national and regional strategies in all of the identified priority areas. The aim is to align as widespread as possible common priorities, approaches and leverage based on scientific evidence, to increase resilience and wellbeing/quality of life through promotion of Brain Health. Emphasis will be dedicated to consider national, regional and demographic diversity to develop state of the art, lifetime and person-centered approaches on prevention, diagnosis, prognosis, treatment and care for brain-related diseases and disorders. The CSA BrainHealth will actively foster large inclusion on several fronts ranging from local challenges through the engagement of rural communities, to a worldwide perspective involving as many European and non-European countries.

APPROACH

The CSA BrainHealth consortium recognizes the capital importance of international and multiapproach cooperation to tackle the ambitious challenges associated to brain health. Enlarging the adherence and participation of public and private actors in as many regions and countries as possible beyond those already engaged in present EC driven actions will be continuously sought. The EP Brain Health has the ambition to be a pan European initiative establishing solid links worldwide. The following pillars will be guiding our actions and approach.

1. **Joint funding:** One of our main pillars will be the **(joint) funding** of research and innovation, networking proposals, early career professionals training and other appropriate measures on the most urgent needs bridging fundamental, clinical, biomedical and social/humanities research, theoretical approaches, engineering resources, industry and real-life interventions to maximize the translational value of the outcomes. Funding actions will apply to as many as possible of the identified topics. To avoid duplication, common goals will be tackled in collaboration with specialized existing funding initiatives wherever possible.

2. **Global dialogue:** A second pillar consists on establishing solid **links and continuous dialogue with the key global initiatives relevant for brain health** (WHO, WDC, OECD , IBRO, GACD) and strengthen our actions on joint priorities through alignment and collaboration with existing and related initiatives (IHI JU, EIT Health, EP ERA4Health, EP THCS, EP PERMED, EP AMR, EP RD, EP Social Transformation and Resilience) within and beyond Europe (NIH Brain initiative, International Brain Initiative, Brain/MINDS, Australian Brain Alliance, etc).
3. **Facilitating the use of EU infrastructures and platforms:** A third pillar will be dedicated to **facilitate the use of European infrastructures and platforms** of relevance in the field. Dialogue will be established with existing and emerging platforms and resources ([ESFRIs](#), [EOSC](#), health portals, data centers including the European Health data space, brain banks, cohorts, among others); while stimulating the brain health community to shape the resources and services in order to optimize their use. A particular focus will be the reuse and sharing of good quality data, technology, approaches and compounds including those generated in the context of other health-related disciplines. The purpose is to strengthen the open science policy in the field and thus improve the quality, efficiency and societal responsiveness of research. The activities in this pillar will make use of information concerning the actual needs to improve the integration of European infrastructures on the everyday work of scientist, which was gathered in previous collaborative projects in the field.
4. **Bridging with health care providers, private sectors and regulators:** This fourth pillar is of utmost relevance since the CSA consortium recognizes the capital importance of appropriate and responsible translation of research outcomes into affordable solutions to improve the quality of life in health and disease.
The goal is to promote brain health as a powerful driver for economy and wellbeing by establishing links and actions with health care providers, private sector and regulators. Continuous monitoring efforts will be dedicated to identify existing and emerging opportunities for science driven industry in the field of brain health. Links with existing and emerging resources will be established ([EFPIA](#), [EIT Health](#), [IHI](#)). Consulting and training actions will be co-developed with expert initiatives to improve the practices of researchers and institutions in order to identify and reduce institutional isolation, financial and material hurdles specific for brain research transfer of technologies.
5. **Citizen engagement:** A fifth pillar will be dedicated to **empower all citizens** including patients and carers. First through the dissemination of good practices and high-quality scientific outputs and activities with potential to 1) inform national and European policies dedicated to improve Brain Health in EU citizens and also 2) to enable citizens to be active in their health trajectories (i.e. risk and protective factors, clinical trials, therapeutic options). Second, through the large and active engagement of citizens in research as collaborators, citizens will participate in the whole spectrum of activities from the definition of research questions, data collection and analysis to the development of recommendations issued from the scientific work. We expect that this approach will improve brain health literacy and rebuild trust in science.
6. **Capacity building:** A sixth pillar concerns **capacity building and in particular the new generations** of scientists, health care practitioners, health policy experts, innovators, engineers and other professionals contributing to preserve and improve Brain Health. The goal will be to shape the vision of early career professionals approaching the challenge of improving Brain Health towards holistic approaches for individuals in health and disease.

References

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