

Brain health is a human right: Implications for policy and research[☆]

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ABSTRACT

The call to synergize brain health with mental health has major ramifications for research and policy. Mental health has been recognized as a universal human right, but no such declaration exists for brain health. Here, I defend the right to lifelong brain health as a derived, intermediary, and generative right. It is derived from the right to physical health because it is reducible to facts about the health of the body. This grounds brain health in the right to physical health, a long-standing right with hard legal status, while avoiding “rights inflation.” It is intermediary because it bridges the gap between physical and mental health, since the brain is an organ that is central to both physical and mental health. It is generative because it provides impetus to downstream actions including the creation of health-based “neurorights” and bolstering the right to a healthy environment to protect collective cognitive health. Thus, the right to lifelong brain health would guarantee the right of citizens to live and grow in a brain health-promoting environment. A rights-based approach to brain health also has important consequences for research. It would help to move research away from the disease paradigm that focuses on individual risk and responsibility to the study of deeper contributions to brain health and disease through a population neuroscience approach to public brain health. Until the right to brain health is recognized alongside mental health, their synergy will remain incomplete, and brain health promotion will lack unity.

Introduction: On the synergy of mental health and brain health

Attempting to overcome centuries of professional and conceptual distinctions between neurology and psychiatry, Ibáñez and Zimmer (2023) draw on work from epigenetics, the exposome, pathophysiology, and the behavioral, social and computational sciences to argue in favor of synergizing mental health and brain health (Ibáñez and Zimmer, 2023). Their argument is that by studying and intervening on biological, environmental, and behavioral determinants affecting both mental health and brain health, then better treatments for both can be developed. Other groups have also made arguments in favor of greater synergy between brain health and mental health (Eyre et al., 2023; Hachinski et al., 2023).

In this article, I will show that the impact of their important scientific proposal may be hindered by an asymmetry in policy making between mental health and brain health. While mental health has already been recognized as a universal human right by the World Health Organization (WHO) and others, brain health has not received the same status, and its promotion suffers from a lack of unified action (Hachinski et al., 2021;

The Lancet Neurology, 2024, The Lancet Global Health, 2024). I argue in favor of brain health as a universal, inalienable right and discuss what a rights-based approach means for both research and policy making.

Brain health rights lag behind mental health

The right to mental health has existed explicitly since 1966, through Article 12 of the International Covenant on Economic, Social and Cultural Rights (ICESCR), a United Nations (UN) initiative. International actors beyond the WHO have also become more active in promoting the right to mental health in recent years. In 2016, 73 member states of the UN recognized the right to mental health (OHCHR, 2016), and the UN Human Rights Council has made further efforts to prioritise the right to mental health since at least 2017.

Since the end of the 20th century, a public health approach to mental health has existed. More recently, the theme of the World Mental Health Day in October 2023 was that “mental health is a universal human right.” The World Health Organization defines mental health as follows:

“a state of well-being in which an individual realizes their abilities, can

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cope with the normal stresses of life, can work productively and is able to make a contribution to their community ... [it is] crucial to recognize that mental health intersects with various aspects of life, including education, employment, housing, and social participation ... When mental health is protected, individuals are better equipped to engage meaningfully in society” (WHO, 2023).

The respect of the right to mental health in both theory and practice requires the coordinated action of both local and global actors (Patel, 2023), and is far from being respected worldwide, requiring the urgent transformation of health systems to respect this right (Patel et al., 2023). Nevertheless, declarations of health as a right set important precedents and priorities for a rights-based approach to policy and research. Such declarations do not yet exist in the scientific or policy literature on brain health.

In its most recent policy report on brain health, the WHO (2022) states its goal:

“to support the recovery, well-being and participation of people living with neurological conditions, while reducing associated mortality, morbidity and disability, promoting human rights, and addressing stigma and discrimination through interdisciplinary and intersectoral approaches ... underpinned by a human rights perspective” (WHO, 2022)

While the human rights perspective is clearly articulated, there are no specific rights related to brain health itself. The point here is not to pit brain health against mental health as though they were somehow competing, but rather to argue that the reasons for promoting mental health as a specific right are equally applicable to brain health. Therefore, policy makers should draw inspiration from the WHO’s assertion that *“Mental health is a basic human right for all people. Everyone, wherever and wherever they are, has a deserving and inherent right to the highest attainable standard of mental health” (WHO, 2023).*

Similarly to mental health, brain health has intrinsic and instrumental value. That is, it should be considered as both a good in itself (intrinsic) and as a basic requirement for human flourishing and the functioning of society itself (instrumental value, (Eyre et al., 2024)). Moreover, beyond human health as an isolated concern, brain health has been shown to play a central role in a “One-Health” model of planetary, animal, and human health through green brain skills “required for environmental health strategies” (Ibanez et al., 2024). Despite the value of brain health, at international health governance events like the recent G7 in October 2024, discussions about actionable priorities to maximize its promotion remain “confined to side events” (The Lancet Neurology, 2024). This relegation of brain health is paradoxical, given the growing interest worldwide in its promotion from across global society (Kolappa et al., 2022), including funding bodies (Owolabi et al., 2023), national governments (The Lancet Neurology, 2023), the international expert community (Njamnshi et al., 2024), and the lay public (Budín-Ljøsne et al., 2022).

What is brain health? Definitions of brain health as a positive or health-promoting “salutogenic” (Fisher, 2023) entity, as opposed to brain health as the absence of brain disease, emerged only very recently in the late 2010s (Gorelick and Sorond, 2023). Prior to this, the concept of cognitive reserve emerged in the 1990s, showing how factors like education were protective for later-life dementia (Stern et al., 1992). In the 2000s, much expert discourse was focused on successful aging and successful cognitive aging, once more in light of cognitive decline (Park and Schwarz, 2000). The first public brain health approach launched in 2007, the Healthy Brain Initiative (HBI) in the US, focused on brain health as it related to Alzheimer’s and other diseases (Roberts and Ty, 2023). In 2017, the American Heart Association/American Stroke Association (AHA/ASA) definition provided an operational definition of brain health focused on health-related behaviours (non-smoking, physical activity, body mass index (BMI), and healthy diet) as well as health-related factors (blood pressure, cholesterol and blood glucose) (Gorelick et al., 2017). However, while these operational factors meet the criteria of “measure, monitor, and modify,” this definition focuses on supporting factors rather than what brain health actually is.

More specific definitions of brain health have since emerged from the World Federation of Neurology, the US Centers for Disease Control and Alzheimer’s Association (Gorelick and Sorond, 2023), work by Vladimir Hachinski and colleagues (Hachinski et al., 2021) on behalf of different initiatives, the Global Brain Health Institute (GBHI) (Chen et al., 2021), the WHO, and other researchers (Harerimana et al., 2021). For consistency’s sake with mental health, I will focus primarily on the WHO definition. Nevertheless, across definitions, Gorelick and Sorond argue that there are five core features of brain health (Gorelick and Sorond, 2023): its importance across the lifecourse; its reliance on both brain structure and function; its being impacted by broad biological, social, and climatic factors; the modifiable nature of risk factors; and the need for ambitious policy to promote it.

How then does the WHO define brain health? As Ibáñez and Zimmer point out, there is overlap between the WHO’s definitions of both mental and brain health. Brain health is defined by the WHO as: *“the state of brain functioning across cognitive, sensory, social-emotional, behavioural and motor domains, allowing a person to realize their full potential over the life course, irrespective of the presence or absence of disorders.” (WHO, 2024).*

The recent nature of these definitions demonstrates that the field of brain health is still squarely in the disease-focused or “pathogenic” paradigm (Fisher, 2023). This paradigm is characterized by a focus on risk and responsibility for developing dementia, implicitly understood as the absence of brain health. Thus, researchers tend to focus on evidence that “shows how individuals can reduce their dementia risk” (Livingston et al., 2024), particularly in high-risk individuals (Livingston and Costafreda, 2023). Meanwhile, “the most prominent English-language, nonprofit dementia organizations ... promote a moral identity in regard to brain health in which an ethic of self-responsibility is central” (Lawless et al., 2018).

Thus, within this disease paradigm, brain health is primarily seen as a private problem of individuals rather than a truly public health approach, and as more important for some individuals than for others, rather than a universal problem. While the WHO launched its first global mental health approach in 2004 (WHO, 2004), the aforementioned first public brain health approach, the HBI, was a primarily US-based initiative launched in 2007 between the US Centers for Disease Control and the Alzheimer’s Association (Roberts and Ty, 2023). It was not until 2022 that the WHO released its first position paper on optimizing global brain health (WHO, 2022). As such, it is perhaps not surprising that much discourse in brain health promotion has focused less on individuals’ rights and more on their responsibilities (Daly, 2023) with evidence suggesting the real possibility of stigma surrounding lifestyle choices (Wilson and Anstey, 2024) and limited impact on overall incidence of dementia by focusing primarily on high-risk populations (Walsh et al., 2024).

The right to brain health: derived, intermediary, and generative

It is well established that human rights are interdependent, as declared at the World Conference on Human Rights, Vienna, 1993 (OHCHR, 1993), and we can therefore derive logically different relationships between different rights (Fig. 1). Here, I will argue that the right to brain health is derived from the long-standing right to physical health, serves as an intermediary bridge between the right to physical and mental health, and can inspire further legislation on neurorights and the right to a healthy environment. Ultimately, the aim of establishing brain health as a right is to give impetus to ambitious brain health promotion.

Brain health is derived from physical health

The right to physical health is a long-standing, legally-binding norm that has been central to post-World War II international human rights legislation. In 1948, Article 25 of the Universal Declaration of Human

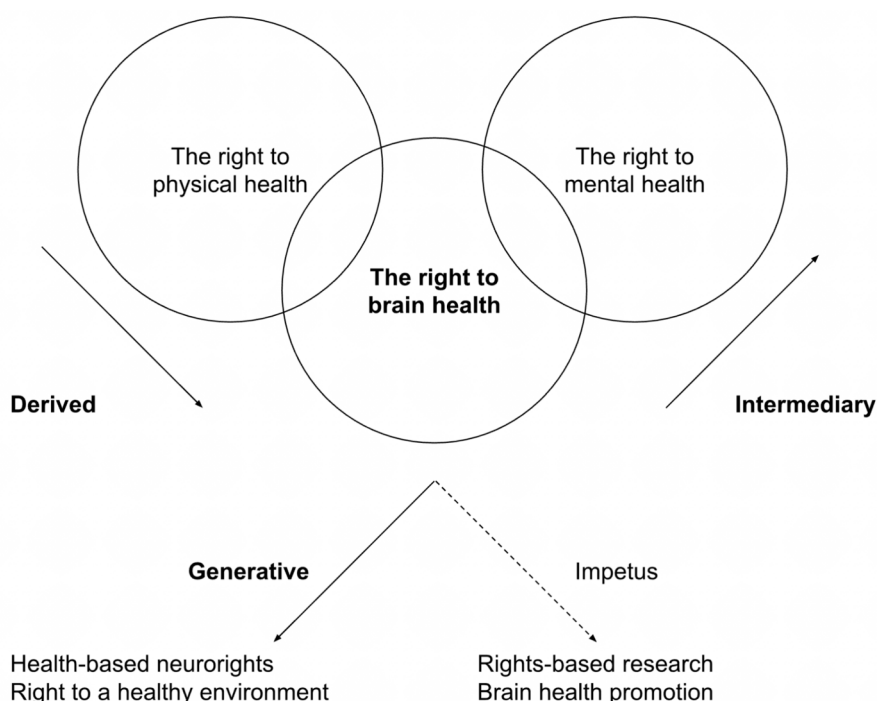


Fig. 1. The right to brain health. This right is derived from the long-standing right to physical health, serves as a bridge between the right to physical and mental health, and can influence both future policy and research.

Rights provided the first acknowledgment of health as a human right: “Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing, and medical care.” In 1966, Article 12 of the International Covenant on

Economic, Social and Cultural Rights (ICESCR) recognized the “right of everyone to the enjoyment of the highest attainable standard of physical and mental health” (OHCHR, 1966). The right to health can be further found in the following international policy documents including Article 5(e) iv

BOX 1

Why focus on the right to brain health?

Sources: See [Daly et al., 2020](#); [Münch et al., 2021](#); [Steinmetz et al., 2024](#); WHO, 2006; [Puderbaugh and Emmady, 2024](#); [Racine, 2010](#)

The brain is a physical organ, and so the right to brain health is derived from the well-established right to physical health. The right to brain health bridges the gap between physical and mental health, since the brain is an organ central to both. Within the right to physical health, brain health should be prioritized because of the following three kinds of reasons: the high burden of brain disease, the specificity of the brain’s physiology, and the perception of brain disease.

Human brain diseases are the most burdensome.

According to the most recent international study of the global burden of diseases, one in three people has a neurological disorder, and they are the most burdensome worldwide. Given that the human brain is responsible for different aspects of conscious, cognitive and sensorimotor capacities, many brain diseases have a strong impact on identity, interpersonal relationships and social participation. Finally, there is a lack of effective and accessible treatments for almost all neurological diseases.

The brain has a specific physiology.

Unlike other bodily organs, known indicators of brain tissue damage often do not correlate with the expression of symptoms, meaning many people are “resilient” for biological, psychological, and social reasons, whereas others are more susceptible. Moreover, when brain damage occurs, it usually has permanent consequences, since the central nervous system exhibits mechanisms of adaptive plasticity rather than repair. This means that when someone receives a diagnosis of brain disease, it is usually permanent, and many neurological disorders are also degenerative, meaning that over time, symptoms become increasingly severe.

Brain diseases are misunderstood.

Survey after survey shows that almost all people living with a neurological disorder experience stigma and discrimination. Many symptoms, markers and causes of disease may not be physically apparent and may rely on subjective reports and/or sophisticated technology for their detection, meaning that they are often misunderstood and highly feared. Misunderstanding extends into the expert community, who may frame complex disease in simple ways for the purpose of testing hypotheses and/or communicating with the lay public, sometimes reinforcing erroneous beliefs, for example, exaggerating the role of lifestyle behaviours in preventing or even reversing symptoms of incurable diseases.

This right provides impetus to the creation of health-based “neurorights,” bolsters the right to a healthy environment to protect collective cognitive health, and inspires a rights-based approach to research.

of Elimination of All Forms of Racial Discrimination; Articles 11(1) (f), 12 and 14(2)(b) of the International Convention on the Elimination of All Forms of Discrimination Against Women; Article 24 of the Convention on the Rights of the Child; the International Convention on the Protection of the Rights of All Migrant Workers and Members of Their Families (Articles 28, 43 (e) and 45 (c); the Convention on the Rights of Persons with Disabilities (Article 25) (see (WHO, 2023).

Brain health is reducible to facts about the health of the body. However, there are three kinds of reasons why it is important to recognize brain health as a specific extension of the right to physical health, which relate to the high burden of brain diseases, the physiological specificity of the brain, and the way in which brain diseases are perceived (BOX 1).

Deriving the right to brain health from the right to physical health grounds it in a long-standing, legally-binding right and avoids the objection of “rights inflation” caused by “conjuring up new human rights” (Alston, 1984). Given this derived relationship, the prioritization of brain health should be understood in a proportional way to diseases of other bodily systems. In other words, though brain disease is burdensome, specific, and misunderstood, this does not justify using a language of “exceptionalism” to advocate for disproportionate resource allocation to brain health promotion (Mastroleo and Daly, 2021). We should instead use proportionality when reasoning and discussing the impact of neurological disorders, which are, as a function of their burdensomeness, highly underfunded (Kaiser, 2018).

Brain health bridges physical and mental health

The brain is an organ central to both physical and mental health through a host of different pathways (Tian et al., 2024). Though the scientific study of consciousness suggests that the human body—brain—mind relationship is highly complex and unique (Michel et al., 2019), there is a partial analogy to be found in the legal literature on “penumbra rights.” Penumbra rights were made famous in the U.S. Supreme Court ruling of *Griswold vs. Connecticut* in 1965 in which the Supreme Court ruled that the US Constitution protected the right to marital privacy from state restrictions. Justice William O. Douglas, who redacted the majority opinion, argued that the First, Third, Fourth, Fifth and Ninth Amendments cast “penumbras” (part of a shadow where there is some light) which create “zones of privacy” and which, when taken together, unite to derive the constitutional right to privacy (U.S Supreme Court, 1965).

What is key to the analogy is that penumbra rights ensure that broad principles like freedom exert meaning in practice. Taking bodily health as foundation to the emergence of subjective experience necessary for mental health, on a naturalist understanding of the emergence of mind from brain processes (Searle, 1992), then the right to brain health is a kind of penumbra right derived from the right to physical health that ensures the enjoyment of a healthy body and mind and serves as a bridging right between the two. Thus, as a necessary (though not necessarily sufficient) condition for mental health (Davies, 2016; Taschereau-Dumouchel et al., 2022) and other emergent properties of the human mind (LeDoux, 1998; Kaur and Defining, 2024), promoting brain health will likely lead to improved physical and mental health and overcome the dualism between physical and mental health (Ibanez and Zimmer, 2023).

The right to brain health generates new priorities for policy and research

There is existing literature on how a single right creates different kinds of legal obligations. For instance, the work of human rights scholar Asbjørn Eide has discussed how the establishment of a right motivates a tripartite obligation to respect (avoid interference), protect (prevent violations) and fulfill (ensure access to) it (Eide et al., 2001). Beyond hard obligations, a right can inspire other downstream actions, including cultural and social transformation (such as advocacy and awareness), institutional development (such as policies and

frameworks), and shaping market dynamics (such as consumer behavior and corporate responsibilities).

In the related field of neuroethics, there is a discussion about how the study of the brain and mind relates to rights, freedoms, and responsibilities. In his book *Pragmatic Neuroethics*, Eric Racine (Racine, 2010) defines neuroethics as “an interdisciplinary and collective response to ethical challenges in neuroscience and clinical care” (x, *ibid*). Importantly, this collective response shares the synergizing project of Ibanez and Zimmer between brain health and mental health, since both neurological and psychiatric disorders share many characteristics, including “caregivers without appropriate support and resources; stigma and discrimination; lives that are shattered by illness and isolated suffering ... diseases of the brain and mind now represent one of the greatest—and still increasing—public health burdens” (ix-x, *ibid*).

Neuroethics emerged in full force around the 2000s. Historically, the field has had three major priority areas (Dubljević et al., 2022). What Racine refers to above is the healthcare-driven perspective, which applies bioethical principles and reasoning to the care of neurological and psychiatric illness (Racine et al., 2008). Knowledge-driven neuroethics relates more to the bidirectional relationship between ethics and neuroscience research: both the ethics of research and the ways in which knowledge about the brain can inform our understanding of ethics itself (Roskies, 2002). Technology-driven neuroethics focuses on the ethics and regulation of neurotechnologies such as brain enhancement (Farah et al., 2004).

This latter branch of neuroethics is particularly relevant to current affairs, given the empirical reality of brain-computer interfaces being implanted into humans as of 2024 (Drew, 2024). There are important stakes for society given the wealth and power of some stakeholders in neurotechnology, including Elon Musk, the world’s richest man with strong ties to the 47th US presidency.

Given these stakes, “neurorights” have emerged as “instruments of global neurotech governance” (Ienca, 2021). Marcello Ienca, a leading scholar on the subject, defines them as:

...the ethical, legal, social, or natural principles of freedom or entitlement related to a person’s cerebral and mental domain; that is, the fundamental normative rules for the protection and preservation of the human brain and mind. (Ienca, 2021).

The neurorights literature has also included a discussion of artificial intelligence (AI) and how it relates to ethics. Priorities for neurorights in AI-driven neurotechnology include respect for “privacy, identity, agency and equality” (Yuste et al., 2017). This scholarship has had an important impact on law and policy, particularly in Latin America. Chile was the first country to legally write neurorights into its Constitution through reform of its Article 19 to protect “cerebral integrity” (Cornejo-Plaza et al., 2024). Hailed by UNESCO as “pioneering” (UNESCO, 2022), this legislation “could serve as a model for other countries to follow as they set out ethical guidelines for neurotechnology” (Yuste, 2022). One recent example is the California State senate passing a bill, sponsored by the US Neurorights Foundation at Columbia University (<https://neurorightsfoundation.org/>), that neural data should be classified as “sensitive personal information” (Becker, 2024). Neurorights discussion is under way in many countries, the European Union (La Moncloa, 2023), Australia (AHRC, 2024), and international organizations such as UNESCO (Bublitz, 2024). Nevertheless, some Chilean neuroscientists have expressed concern that if such laws are imprecise and overly paternalistic, they may unnecessarily slow down scientific progress against the huge burden of neurological disease (Ruiz et al., 2024).

Neurorights have focused on the right to cognitive liberty—understood as the absence of external interference—at a given time T1 (Farahany, 2019). My purpose here is to argue for the extension of a rights-based approach encapsulated in neurorights—Ienca’s aforementioned “protection and preservation of the human brain and mind” (Ienca, 2021)—against a less immediately visible threat: environments in which many people live, grow and work that are unhealthy for the development and maintenance of their brain and contribute to major

brain health disparities. A health-based neuroright would insist on the right to freedom from cognitively-disabling environments across time, i. e. between T1 and T2. Guaranteeing such a right has not been a primary focus of the neuroethics field, but should be.

Having drawn on their tripartite distinction between healthcare-driven, knowledge-driven, and technology-driven neuroethics perspectives, Dubljević and colleagues (Dubljević et al., 2022) argue for a “fourth, socio-political perspective ... [which] focuses on the interplay between the behavioural as well as the brain sciences and the socio-political system” (p. 5, *ibid*). What I will argue in this section is that brain health is intimately related to the configuration of the socio-political system and requires ambitious policy making to promote a rights-based approach to protect the brain health of the most underprivileged members of global society who are exposed to many insidious and overt environmental risk factors of poor brain health and accelerated brain aging.

The important role played by social conditions in health and illness has been recognized in the epidemiological literature for decades (Link and Phelan, 1995). The neuroscience literature itself has been mostly focused on an individualistic approach to drug development or behaviours through the lens of lifestyle in high-risk individuals (Livingston and Costafreda, 2023), as evidenced by the worldwide success of the Finnish Geriatric “FINGER” multi-domain intervention for brain health in high-risk, older individuals (Kivipelto et al., 2020; Ngandu et al., 2015). Only recently has an emerging wave of literature from the dementia prevention literature offered arguments from health equity to epidemiology in favor of a population-based, life-course approach to address behavioral, social, and commercial determinants of brain health to argue in favor of a shift away from lifestyle-only approaches (Walsh et al., 2022). Alongside this important literature from public health, neuroscientists themselves are drawing increasing attention to socioeconomic disparities as an empirical fact of poor brain health in need of scientific solutions (Fittipaldi et al., 2024; Ibáñez et al., 2023). Multi-modal methodological advances are allowing brain health disparities to be studied with increasing precision (Fittipaldi et al., 2024).

This emerging literature from population neuroscience provides evidence that brain aging across societies is deeply affected by socioeconomic inequalities across the lifetime (Legaz et al., 2024). To take two recent examples, in the Lothian birth cohort in Scotland, exposure to a deprived neighbourhood over the lifecourse had a cumulative impact on adverse brain morphologies measured on brain imaging at age 73, with the “brain-neighbourhood” association being particularly strong in lower social classes (Baranyi et al., 2024). Similarly, a multi-modal deep learning study from across 15 different countries including Latin America and the Caribbean found that socioeconomic inequalities, air pollution, and disparities in access to healthcare accelerated brain aging relative to chronological age, with the “brain-age gap” being particularly large in Latin America (Moguilner et al., 2024), the region with the highest indices of inequality according to the World Bank.

These findings have important socio-political ramifications by showing the extent to which disparities affect the prospects of our “collective cognitive capital,” that is, the extent to which “our collective brains work well and together” (Murphy, 2022). If it is true that “when people are treated in ways that enhance their collective cognitive capital—safe and stable environments, good education—political power tends to flow to them. The absence of these things keeps people without political power; without meeting basic needs first, it is not possible” (Murphy, 2022). In other words, some people live, work and grow in brain health-enabling environments, whereas others—in fact, the majority of the world’s population in the Global South—live in brain-disabling environments (Daly, 2024). In 2022, the United Nations declared that “everyone on the planet has a right to a healthy environment” (UN, 2022). This right was only recognized by the UN General Assembly as a non-binding law. The right to brain health solidifies the need for further development of the right to healthy environments so as to strengthen it.

As well as promoting equitable access to medicines for neurological diseases (WHO, 2024), the WHO has provided a recent position paper on how to pragmatically strengthen brain health promotion centered around “physical health, healthy environments, safety and security, learning and social connection, and access to quality services” (WHO, 2022). Importantly, population- and community-level interventions for dementia prevention are cost effective in both higher and lower-income countries (Walsh et al., 2022). Brain health promotion can be understood in terms of “low-tech medicine,” which is a public health approach “that integrates both medical and non-medical expertise, such as public health, engineering, sociology, education, ethics, urban planning” (p. 3 (Sarfati et al., 2024). Low-tech approaches are low-technology (do not require specific technology materials), low-techniques (do not require technical knowledge), and low-technocracy (do not require further technological invention). Interventions meeting these “low-tech” criteria exist for brain health (Daly, 2023). They include structural interventions to address exposure to risk factors implicated in different diseases (Brown et al., 2019); the co-creation of risk-reducing environments with citizens (Röhr et al., 2022); and, as alluded to above, lifestyle modification for brain health (Ngandu et al., 2015). Importantly, these actions to promote brain health should lead to a shift away from a paradigm of individual responsibility (Horstkötter et al., 2021) to one that includes both citizens’ rights as well as shared responsibilities between citizens and other actors, i.e. health promoters—both healthcare workers and policy makers (Verweij and Dawson, 2019). Incidentally, qualitative evidence indicates that brain health, rather than dementia risk, may be a more palatable and actionable term in primary care (Jones et al., 2024). In the case of brain health promotion, there has been interest in the role of healthcare workers including nurses (Fick, 2016), general practitioners (Jones et al., 2024), neurologists (Hachinski, 2022) and policymakers understood as anyone who might have “drafted (‘policy professionals’ e.g. local government officials), approved (‘politicians’ e.g. local councillors), or influenced (‘policy influencers’ e.g. dementia charity policy lead) policy” (Walsh et al., 2023). There is an important responsibility for the private sector in reducing the negative influence of the commercial determinants of brain health that include impact on public perceptions of products, lobbying against regulations on harmful products, and exploitation of labour and the environment (Walsh et al., 2022).

Finally, a rights-based approach to brain health also has important consequences for research culture. Fundamentally, it means that neuroscience researchers should think deeply about the ethical implications of their research, beyond a narrow view of ethics-as-respecting established protocols (Stahl et al., 2024). This includes a move towards diversity in brain health research in ways that promote underserved populations and bolster their rights (Murray and Slopen, 2024). Different methodological tools and frameworks are available for a multi-modal population neuroscience approach (Shaaban, 2024). These include an ecological systems approach (Adkins-Jackson et al., 2023), multi-level socioeconomic frameworks (Ibáñez et al., 2023), and a “syndemic” multi-disease approach to health disparities (Shaaban et al., 2023). A recent example of such an approach to brain health has suggested that early exposure to structural factors like sexism can lead to worsened brain health in later life (Avila-Rieger et al., 2024).

These innovative approaches are necessary to build the evidence surrounding potential threats to brain health equity. However, evidence is not in itself a sufficient condition for action. This fact means that the neuroscience research community, with its access to the causal picture of brain disease that the naked eye cannot see, should be vocal in its interactions with policy makers and civil society in its need for the right to brain health to be respected.

Conclusion: The need for public brain health

Like “public mental health” (Campion, 2018), the time is ripe for a “public brain health agenda” (Hussenoder and Riedel-Heller, 2018)

bolstered by a rights-based approach to intersectoral brain health promotion (Winter et al., 2024). The right to brain health is a necessary condition for human dignity that recognizes the inalienable right of each person across the entire lifetime to live, grow and work in a safe and stimulating physical and social environment that favors access to adequate education, healthcare, dignified work and leisure, and full participation in society, while ensuring the absence of harmful elements such as pollution and poverty (Daly, 2025).

Importantly, brain health is both an intrinsic and instrumental good. It must apply to everyone, including overlooked younger members of society (Farina et al., 2024), and applies regardless of whether a person has a diagnosis of a neurological or other condition. In particular, a focus on prevention is only one aspect of brain health promotion, and should not lead health promoters and researchers to overlook the needs of those who already live with a diagnosis (Heath, 2007). Let us take the case of dementia, the most common neurodegenerative disease that leads to cognitive decline and loss of autonomy, and is characterized by major unmet needs for those who both receive and give care (Lindeza et al., 2020). Indeed, when someone experiences cognitive and functional decline, their dependency on the external environment increases significantly, and maximizing what Dr. Jason Karlawish has called that person's "quality of mind" requires a relational understanding of their mind as becoming increasingly extended into their physical and social environment as they lose their intrinsic capacities (Daly, 2022). A relational understanding of dementia care is only just emerging (Klein, 2022). Thinking about brain health through relationships invites a radical rethink of our unhealthy societies to focus more on our interdependence (Reynolds, 2018) and make our collective environments richer and safer (Daly, 2023), not only to make society more "dementia-friendly" once people have dementia (Lin, 2017), but to promote brain health across the life course (Daly, 2023).

If brain health is to be truly synergized with mental health, then a rethink of rights, healthy environments and resource distribution is vitally needed to make sure that both mental and brain health, necessary conditions for human and societal flourishing, are respected worldwide.

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Timothy Daly: Writing – review & editing, Writing – original draft, Validation.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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