

Roundtable Brief #3
Defining Brain Health
September 14, 2023



The Business Collaborative for Brain Health (BCBH) is engaging global business leaders and experts in roundtable discussions around key issues in its mission to build brain health capital by advancing measurably effective brain health workplaces, communities, and product and service innovations. Each roundtable discussion is summarized in a brief for BCBH members and the public.

After many years of being a neglected part of the human body, the brain is finally starting to get the attention it deserves. And with a rapidly aging workforce, investing in our collective cognitive reserve may be a critical path to the economic and social flourishing of business, communities, and ourselves.

But what is brain health, exactly, and why should business leaders care? Various terms are used regarding the state of our brains and cognition – mental health, well-being, brain health, brain performance, mental illness, brain diseases, dementia, and more. Are they equivalent, overlapping, distinct? What aspects do the private sector and employers consider to be within their domains and priorities? What solutions apply across silos that help us all reach our full potential at work and in our communities?

BCBH convened a roundtable of experts on September 14, 2023, to consider such questions, moderated by **Sarah Lock** (Senior Vice President of Policy & Brain Health, and the Executive Director of Global Council on Brain Health, at AARP), and including **Sandra Bond Chapman, PhD** (Chief Director of the Center for Brain Health at UT Dallas); **Lisa McGuire, PhD** (Lead, Alzheimer’s Disease Team, at the Centers for Disease Control); **Krystal Sexton, PhD** (Health Analytics Manager at Shell); and **Harris Eyre, MD, PhD** (Research Fellow at Rice University's Baker Institute for Public Policy).

Defining Brain Health

Dr. Sandra Bond Chapman, a cognitive neuroscientist, defines brain health as the “continual promotion of optimal brain development and fitness, cognitive health, emotional well-being, and connectedness to people and their purpose across the lifespan.” Dr. Chapman explained that this is consistent with the definition from the World Health Organization (WHO),ⁱ but a bit broader, adding connectedness to people and purpose. Brain health can simplistically be described as harnessing your brain skills to thrive in your context. She explained that all aspects of brain health work synergistically together. Research shows that a holistic measure of brain health may be more informative to realize the various brain resources a person can strengthen and access to help them thrive over time. We fail to realize how our vast brain skills add up to more than the sum of its parts when these elements are viewed in silos. Consistent research now shows that brain health is a higher category of health which, if improved, provides a spillover benefit to emotional well-being, physical health, and even neural health.

Dr. Lisa McGuire added that many risk factors contribute to problems with brain health. Aside from the physiological aspects of the brain that keep our bodies functioning, such as breathing, the brain always plays a role in our physical health and cognitive functions and vice versa. Therefore, if the brain is affected, it will affect other parts of the body as well, because these functions are interrelated. For example, if someone has a mental health condition, such as depression, it can lead to impairment in their cognitive functioning, decision-making skills, and physical health and well-being.

When Shell, the oil industry company, started looking at more holistic ways to improve health, according to Dr. Krystal Sexton, they were looking at physical health, mental health, social health, and even financial health. Building on Dr. McGuire's point, Dr. Sexton noted that a combination of connected things impact brain health. Shell does not use the term "brain health," in part because there is a stigma attached to talking about cognition and mental health. It may bring up other issues related to mental illness, concerns over human resource violations, or confidentiality, and that is not the right conversation when you are talking about the overall well-being of employees. As a result, the terms "holistic health" or "total worker health" are often used. In addition, by connecting individual performance with the environment in which an employee is working—including supervisor conduct and interactions, and their impact on how the employee thinks, feels, and acts--Shell saw a direct relationship of performance and environment to worker safety. Shell has been able to demonstrate that the more engaged employees are, the healthier they are and the safer they work. Furthermore, Shell has been able to tie these outcomes to productivity, financial performance, and retention and the competition for talent. So, while they do not refer to "brain health," they are looking at the same constellation of risk factors that contribute to or potentially harm brain health. With leadership in business, they talk about it in more holistic terms and connect it to the impact on actual behavior, including safety and how that impacts the way one's brain works. One way to think about all this, according to Dr. Harris Eyre, is "brain capital." Brain capital is not just a health and social asset, but also an economic asset highly critical to nation states and big business such as Shell. **Brain capital is an economic asset that prioritizes, integrates, and optimizes brain health and brain skills.** These brain skills, such as creativity and adaptability, should be as important as GDP, road and bridge infrastructure, and forest and ocean health. And at the big business level, Dr. Eyre argued, it is an essential asset to business, a tangible asset.

Sarah Lock added that AARP wanted to know what individuals understand about brain health. Individuals want to know, "what is it that you can do about brain health? What are the actions that you can take?" Unfortunately, their survey revealed that many people have a "notion that cognitive decline as you age is an inevitable, that that you have a life trajectory for brain health and that no matter what you do, your brain function is a result of cards you've been dealt." So public perception is also a problem that needs to be addressed. Dr. Chapman added that not only is it inaccurate that nothing can be done, but scientists such as Mike Merzenich, founder of BrainHQ,ⁱⁱ and others have shown that our brains maintain neuroplasticity into our older ages and that, in fact, our brain may be the most modifiable part of our whole body. Moreover, we can now *measure* improvements and the economic results.

Panelists and meeting participants discussed the need for a simple definition, but the importance of customized messaging about the impact of interventions to improve brain health must be based on the audience, even within organizations. Brain health may mean different things to the C-Suite than it does to frontline managers. Dr. Sexton gave an example: in talking with leaders downstream in an organization about retention, she learned that not all business units experience large turnover every year, and thus it is not a critical priority for them. In fact, even talking with them about business performance and the impact on the bottom line may often not be well received. But if you talk about safety and productivity and things that matter in that line of business—that is very important and meaningful.

Brain Health's Relevance to Employers and Business

There are potential benefits for companies in promoting brain health throughout the workplace. Dr. Sexton stated that business leaders throughout the organization do want to learn more about the health of their employees and how it ties into their business outcomes. Dr. Chapman added that their work at the Center for Brain Health is demonstrating it is possible to help people be more productive in their

everyday life. Workplaces can benefit from this. A recent studyⁱⁱⁱ they did with HKS Inc. (an architecture and design firm connecting built environments and brain capital) showed that whether young, middle-aged, or older, employees utilizing brain training improved and significantly reduced burnout, cynicism, and mental exhaustion toward the workplace. Our brain is partially built in the workplace, and it is important that people receive education on brain health and learn about protective factors and toxic behaviors that impair neural systems. Speakers agreed that it would be very beneficial if corporations implemented strategies that promote healthy aging. Dr. Sexton mentioned that Shell’s workforce population is aging, and people are retiring 10 years later than even just a few years ago.

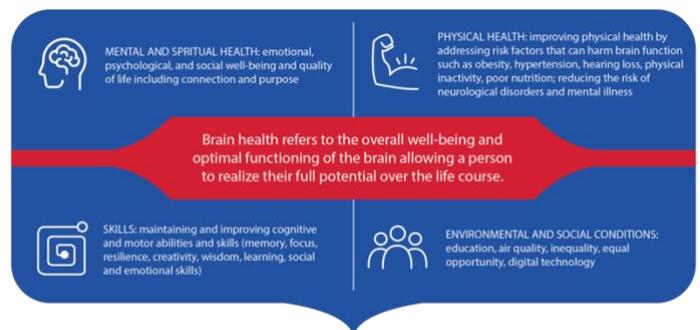
Dr. McGuire echoed that much of what public health does is focus not on the individual, but rather on groups or systems or populations. Workplaces would be an example. She noted that some of the biggest risk factors for brain health occur in midlife, such as hypertension. Obesity, diabetes, tobacco use, lack of physical activity, and poor sleep quality all matter as well. CDC has awarded funds to 43 states and jurisdictions to address these risk factors from this population perspective within their state or their community. The ability to measure progress, such as through the Center for Brain Health, may be one way to help us demonstrate outcomes that improve population health.

Dr. Harris Eyre more broadly commented on the potential economic benefits of promoting brain health. Dr. Eyre is a neuroscientist, and for him brain capital started in the world of global economics. Brain health and brain skills, such as creativity and adaptability, are highly critical. The idea of human capital has been a helpful innovation in the past couple of decades. Our brains also need to accommodate new demands, like modern stress and working to incorporate augmentation by AI. Several frameworks have emerged around the brain capital concept, including a new Brain Capital Industrial Strategy^{iv} and a Global Brain Capital Dashboard published by the Brookings Institution.^v

Brain Health Definition and Outcomes

Recognizing that there are many definitions and many more important outcomes, BCBH identified a common, simple definition that can be adapted by audience - **Brain health refers to the overall well-being and optimal functioning of the brain allowing a person to realize their full potential over the life course.**

Similarly, the **benefits of brain health for the private sector** are many, and the case for action is largely dependent on audience. BHBC mapped related outcomes that result from improved brain health, including aspects that connect to top line interests such as financial return on investment, mitigated risk, growth, and competitiveness. These include employee engagement, retention, productivity, safety, innovation, and reduced healthcare costs, among others.



The Business Collaborative for Brain Health (BCBH) is a collaborative of private sector partners developing innovative solutions to cognitive health throughout the lifespan with a particular interest in our older years. As a collaborative, the mission is to build brain health capital by advancing measurably effective brain health workplaces, communities, and product and service innovations.

Founding Partners:



ⁱ WHO definition of brain health: “Brain health can be defined 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. Continuous interactions between different determinants and a person’s individual context lead to lifelong adaptation of brain structure and functioning. Optimizing brain health improves mental and physical health and also creates positive social and economic impacts, all of which contribute to greater well-being and help advance society.”

ⁱⁱ <https://centerforbrainhealth.org/people/michael-merzenich-phd>

ⁱⁱⁱ [https://www.frontiersin.org/articles/10.3389/fpsyg.2023.1175652/full?&utm_source=Email to authors &utm_medium=Email&utm_content=T1_11.5e1_author&utm_campaign=Email_publication&field=&journalName=Frontiers in Psychology&id=1175652](https://www.frontiersin.org/articles/10.3389/fpsyg.2023.1175652/full?&utm_source=Email%20to%20authors%20&utm_medium=Email&utm_content=T1_11.5e1_author&utm_campaign=Email_publication&field=&journalName=Frontiers%20in%20Psychology&id=1175652)

^{iv} <https://www.bakerinstitute.org/research/7-steps-igniting-brain-capital-industrial-strategy#:~:text=Along%20these%20lines%2C%20we%20define,an%20innovative%20and%20thriving%20economy>

^v <https://www.brookings.edu/articles/the-global-brain-capital-dashboard/>