



WHO IS THE CBRS

The Canadian Brain Research Strategy (CBRS) is a community-led initiative with leadership from more than 30 neuroscience and mental health institutes, early career researchers, Indigenous Knowledges Holders, and patient representatives from across Canada.

The CBRS is bringing together the vast brain research ecosystem - scientists, Indigenous Peoples, people with lived experience of brain conditions, private and public science funders, industry leaders, and others - to create a better future for Canadians by responding to the continued and pressing need to understand the brain.

The CBRS and its partners recommend that Canada establish a national brain research initiative by advancing brain research that is:

- *Collaborative* – combining efforts in a scientific culture of coordination and partnership
- *Transdisciplinary* – involving diverse voices of researchers as well as partners outside of academia such as Indigenous Peoples, patients, and industry
- *Open* – making scientific knowledge on the brain transparent, shareable, and freely accessible to everyone

WHY DOES THE CBRS EXIST

Our brains define who we are, how we behave, what we strive for, and the ways we develop relationships within ourselves (spirit, mind, emotions, body), each other (honoring/following our traditions), and the land and water (reciprocity). Because our brains are so integral to our capacities to live good lives, brain research has the promise to improve the lives of all Canadians.

The annual healthcare costs of brain conditions in Canada are more than \$61 billion and growing. Understanding the brain - in health, development, disease, and resilience - will be critical to Canada's success and well-being in the 21st century.

WHAT IS THE CBRS TRYING TO ACHIEVE

The CBRS is building a collective national strategy for brain research that will inspire the Canadian government to invest in a major brain research initiative. Through this initiative, we aim to build on Canada's strengths and current investments in cutting-edge collaborative brain research to drive policy, social, health, and economic advancement for Canada and the world.

The CBRS leaders recognize that consultation across the country, especially from Indigenous Peoples and people with lived experience, is essential for the development of a robust strategy for Canadian brain research that is inclusive, broadly supported, and meets Canada's needs.

CBRS INDIGENOUS INITIATIVES

Amplifying the unique and diverse voices of Indigenous peoples in this country will allow for enriched brain research, as these voices have long been silenced via the colonial structures of Canada. We strive to acknowledge the past (including historical injustices), recognize the present (appreciate Indigenous strengths in culture and language), and envision the future (healthy reciprocal relationships between Indigenous Peoples and Canada).

A robust national brain initiative must encompass the vast, distinct, and rich traditional knowledge of Indigenous peoples in Canada, as well as affirm the community expertise and sovereignty of First Nations, Metis, and Inuit people.

“Indigenous people are not well represented in brain research - brain research is not focused on Indigenous peoples, or researchers have not yet had the conversations about cultural relevance. If we do not find a way to include Indigenous people, the disparities that exist in these research domains, and accessibility to innovations and treatments may only grow”.

- Dr. Christopher Mushquash, IKHG Member

The CBRS has gathered Indigenous leaders across Canada who have research interests in brain and mental health to form the Indigenous Knowledge Holders Group (IKHG). A workshop was convened in 2021 to identify ways that Indigenous stakeholders can have an explicit voice in the initiative, weave Indigenous knowledge into the fabric of the CBRS, and support Indigenous brain and mental wellness. The workshop led to the following identified priorities:¹

1. **Embracing Indigenous Knowledge:** Integration of Two-Eyed Seeing in research and education. Learning to see from one eye with the strengths of Indigenous knowledge and ways of knowing, from the other eye with the strengths of mainstream knowledges and ways of knowing and learning, and to use both eyes together for the benefit of all.
2. **Partnership:** New partnerships and networks that embrace strength-based approaches and community engagement. Finding cross-cultural understandings, translating constructs of interest, and establishing trust.
3. **Appreciating Diversity:** Increased understanding of the heterogeneity of Indigenous communities and nations, including the unique needs of each community, its desires, goals and challenges.
4. **Connectivity:** Stronger connections between Indigenous researchers, investigators who conduct Indigenous research, and Indigenous communities. Building upon Indigenous knowledge that everything in the universe is connected, whether it is the connection between ancestral spirits and the mortal world.

¹ Perreault et al (2021) An Indigenous Lens on Priorities for the Canadian Brain Research Strategy. doi:[10.1017/cjn.2021.501](https://doi.org/10.1017/cjn.2021.501)

STRATEGIC FOCUS AREAS

The CBRS and key stakeholders across the country have identified six near-term priorities - areas of distinction that make Canada a world leader in collaborative, transdisciplinary, and open brain research.

1. **Platform Science:** Envisioning places and mechanisms to incorporate Indigenous Knowledge with brain research in physical areas where those can be applied, such as land-based learning opportunities and Indigenous language retention via Zoom. Sharing ways of how Indigenous Knowledge is applied via tools, data, and expertise will allow research to be more equitable, collaborative, innovative, and productive.
2. **Neuroscience-AI Interface:** Artificial intelligence (AI) are rapidly growing tools, where Indigenous Knowledge could either be benefitted or harmed via exploitation; indeed, establishing principles and pillars of how Indigenous peoples want their knowledge incorporating into these tools is essential to ensuring a healthy, mutually beneficial, and sustainable relationships are advanced in research.
3. **Diversity & Team Science:** Incorporating Indigenous peoples into research opportunities, ventures, and spaces, allows for knowledge bridging between Western and Indigenous Perspectives. Removing barriers and obstacles in research, as well as supporting Indigenous peoples in these roles will allow for more robust and higher quality data and information.
4. **Transdisciplinary Training:** Indigenous peoples view the world in a wholistic sense, where we understand all our relationships (physical, environmental, familial, and spiritual) are tied and bound to each other, in how they affect us on an individual and community level. Collaborating between disciplines (such as hunters, tanners, and craft makers) has been inherently part of Indigenous identity for millennia, and applying this way of thinking in training the next generation in biology, physics, computer science, social science, and the humanities, will allow for greater and faster advances in understanding the brain.
5. **Neuroethics:** Indigenous Traditional Knowledge encompasses spaces, concepts, and ideas, which are foreign to Western research, and vice-versa. Building guidelines, touch points, and protocols between Indigenous Traditional Knowledge and research will be key to understanding the ethical, legal, and social issues raised by our continuously advancing knowledge of the brain. To make the best use of neuroscience and mental health research, it is important to look at the potential benefits, risks, and broader social impact.
6. **Open Neuroscience:** Indigenous peoples need to have tools, equipment, and expertise to share data and knowledge amongst each other, to support our traditional methods of communication. Protecting the sovereignty of how Indigenous data is collected, as well as ensuring that present and future partners respect how Indigenous peoples want to advance and develop, will ensure that they are an integral part of a better future for brain science.

The coalition convened by the CBRS believes that the time for a Canadian Brain Research Initiative is now. We have the network, partnerships, vision, and strategic plan in place. Now we need the funding to catalyze this initiative into concerted, bold, and concrete action.

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