

## ***Innovation Grants for Research Impact in Traumatic Brain Injury*** Request for Applications

### **About Brain Changes Initiative**

Brain Changes Initiative (BCI) is a not-for-profit organization that funds ground-breaking research to improve the standard of care for Traumatic Brain Injury (TBI) recovery. BCI also provides awareness, advocacy and support for Traumatic Brain Injury survivors; they carry out knowledge translation, education, events and programs centred around nonpharmacological approaches to healing the brain.

<https://www.brainchanges.org/>

### **About Brain Canada Foundation**

Brain Canada Foundation (Brain Canada) is a national registered charity that enables and supports excellent, innovative, paradigm-changing brain research in Canada. For more than two decades, Brain Canada has made the case for the brain as a single, complex system with commonalities across the range of neurological disorders, mental illnesses and addictions, and brain and spinal cord injuries. Looking at the brain as one system has underscored the need for increased collaboration across disciplines and institutions, and to ensure that Canada has a robust pipeline of talent to remain at the forefront in the field of brain research. Brain Canada's vision is to understand the brain, in health and illness, to improve lives, and achieve societal impact.

The Canada Brain Research Fund (CBRF) is an innovative arrangement between the Government of Canada, through Health Canada, and Brain Canada Foundation, designed to encourage Canadians to increase their support of brain research, and maximize the impact and efficiency of those investments. The Fund supports the very best Canadian neuroscience, fostering collaborative research and accelerating the pace of discovery, in order to improve the health and quality of life of Canadians who suffer from brain disorders. To date, Health Canada has invested over \$155 million through the CBRF, which has been matched by Brain Canada and its donors and partners.

[www.braincanada.ca](http://www.braincanada.ca)

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## Introduction

It is estimated that approximately 165,000 people per year are affected by a traumatic brain injury (TBI) in Canada and that by 2031, TBI is projected to be among the most common neurological conditions affecting Canadians. Because of the high numbers of people experiencing TBI, contrasted with the lack of resources to match the demand for services, people with brain injury are at a high risk of missing a critical window of opportunity for recovery. Brain injury affects every aspect of life, and the negative consequences could be reduced if immediate and effective treatment options were available and accessed.

Despite these realities, there has been minimal investment in research on TBI. With the understanding that stakeholder-informed research has the greatest potential for impact, Brain Canada undertook an extensive consultation process to understand the breadth of the needs of diverse stakeholders related to TBI and identify the top priorities that should be addressed first. By funding innovative research into the most pressing issues in TBI, we enable creative and innovative evidence-based solutions to real needs identified by stakeholders, and in this way, transform the research landscape and position Canada as a leader in the field.

The *Innovation Grants for Research Impact in Traumatic Brain Injury* funding opportunity has the potential to be transformative at a time when it is well recognized that there is a significant funding gap to support research into TBI. By providing researchers with funding in this area, as well as stakeholder-informed direction on where the greatest impact can be achieved, we are helping to build much needed evidence-based solutions that will improve brain health in Canada.

## Scope

The purpose of the *Innovation Grants for Research Impact in Traumatic Brain Injury* is to generate creative, novel and practical evidence-based solutions that address stakeholder-identified needs, listed below in no particular order, to improve the trajectory of recovery for individuals after brain injury. With the knowledge that behaviour, practice and policy changes are made possible by creating solutions that work, proven through rigorous academic research in collaboration with stakeholders, we expect the projects funded through this opportunity will have a substantial impact, especially for health care providers and patients.

Please click the hyperlinked text for full details on the nine stakeholder-identified needs.

- [Increased detection, treatment, and prevention for special populations \(e.g., people in situations of abuse, people experiencing homelessness\).](#)
- [Full assessment and customized treatment plan informed by the areas of brain that were damaged and severity.](#)
- [Accurate prognostication \(to know expected outcomes\) to inform decision-making by doctors, families, and insurance payees.](#)
- [Minimize occurrence of incorrect assumptions that can prevent detection of brain injury, especially for Indigenous Peoples.](#)
- [Ongoing education \(CMEs\) for doctors about new research and therapies for brain injury.](#)
- [Reduced waiting lists / immediate access to outpatient brain injury services and treatment facilities.](#)

- [Transfer of information from emergency departments to family physicians so brain injury is not missed.](#)
- [Reduced bureaucracy, paperwork, unnecessary delays, and barriers across systems \(health, financial, insurance, legal, etc.\)](#)
- [Less emphasis on structural characteristics and more on functional ability during assessments.](#)

The research teams will engage and work with stakeholders throughout their proposed research project, to co-create solutions to the stakeholder-identified priorities outlined in the hyperlinked information for each. This iterative approach involving the intended target audiences is designed to maximize the applicability of the research output(s), and, therefore, maximize impact.

#### **It is anticipated that funding will allow applicants to:**

- Investigate the feasibility of their innovative solution, while iterating, testing, and re-designing it with optimal solution design as an output of the project;
- Engage with stakeholders to co-create the solution, to optimize impact of the research output(s);
- Capture quantitative and/or qualitative data on the impact(s) of the solution;
- Provide evidence to support the future implementation of the solution in similar and/or different contexts;
- Provide evidence that can lead to changes, even if small, in policy, health care or other related practices and/or patient behaviours that could ultimately lead to a change in health outcomes;
- Contribute published research evidence to influence the trajectory of TBI research.

The following projects **will not** be considered for funding:

- Investigations that do not address one of the stakeholder-identified priorities identified above;
- Investigations that do not utilize the detailed information in the hyperlinked document for their selected priority.

## Grant Details

Funding for the *Innovation Grants for Research Impact in Traumatic Brain Injury* has been made possible by the Canada Brain Research Fund, an innovative arrangement between the Government of Canada (through Health Canada) and Brain Canada Foundation, and Brain Changes Initiative. This funding opportunity has an overall funding envelope of up to \$1.4 million CAD to support 3 to 4 grants over two years. Total grant amounts are flexible to accommodate the needs of each project.

## Equity, Diversity, and Inclusion

Evidence clearly shows that increasing equity, diversity, and inclusion (EDI) in research environments enhances excellence, innovation and creativity. The funding partners are committed to excellence through equity and encourages applicants of diverse backgrounds to apply to our funding opportunities, which will promote the expression of diverse perspectives, approaches, and experiences, including those of underrepresented groups.

## Eligibility

Applicants must select one stakeholder priority to be addressed in their research project and, as much as possible, use the details in the hyperlinked document for each priority as a starting point for the project design. Applications that cover more than one of the stakeholder priorities above will be considered.

- Stakeholders should be engaged at each stage of the research process to ensure meaningful outcomes are achieved through co-creation of solutions. Appropriate budget should be allocated to support these activities.
- Research applications can be related, but must be distinct from any other currently funded projects. It is the responsibility of the applicant to notify Brain Canada immediately should overlap arise from new funding awarded during the application and review process of this funding opportunity.
- Applicants must be able to initiate the project in June 2024 when funding is expected to begin, conditional on providing proof of institutional approvals to Brain Canada (e.g., ethics) prior to funding release.

This funding opportunity is open to interdisciplinary research teams of two or more members and **must include a minimum of two independent investigators**, see below, one of which must be designated as the Principal Investigator.

- Investigators must be conducting research at, and affiliated with, an eligible Canadian academic institution for the entire duration of the grant and must be considered an independent researcher at their institution. Such an individual normally holds the rank of assistant, associate, or full professor; can initiate and direct their own independent lines of research as principal investigator; has full responsibility for running their laboratories; has full control of their research funds; and is permitted to supervise trainees, if applicable, as per their institution's policy. Postdoctoral fellows, research associates, or adjunct faculty are not eligible to apply.
- Academic appointments must have started by the deadline for Full Application submission.
- Team composition must include all expertise needed for successful completion of the project, including experience and expertise related to knowledge mobilization and social innovation: planning, execution, stakeholder engagement for co-creation of solutions, and impact evaluation.

## Use of Funds

Funds must contribute toward the direct costs of the research project for which they were awarded and should be directly attributable to the project or activity being performed. Funds cannot be allocated toward costs and expenses incurred outside of Canada.

## Eligible Costs

These funds may be used to support any aspect of the research project, including:

- Salaries for technical and administrative personnel
- Stipends of trainees
- Supplies and materials
- Maintenance of essential equipment and/or purchase of equipment that is currently unavailable but essential for the project
- Provision of special services and user fees
- Research & Knowledge Mobilization activities, including, but not limited to:
  - Stakeholder engagement: honoraria, travel expenses, if applicable, for participation in testing and other activities to provide input into the design and development of solution(s) for the priority being addressed;
  - Design and development with stakeholders: i) commercial (products that can be sold), ii) non-commercial (evidence-based clinical practice guidelines, protocols, policies, implementation workshops, training course content and material creation, user manuals, etc.), and/or iii)

- knowledge products (infographics, brochures, videos, webinars, lay summaries, etc.) that communicate findings of the research;
- Dissemination: travel of the Principal Investigator and trainees for presentation of results at conferences; publication costs in peer-reviewed and open-access journals or repositories (including article processing charges), etc.

### **Ineligible Costs**

- Salaries and consulting fees of any investigator or researcher holding an independent academic or research appointment
- General office and lab equipment
- Indirect costs or overhead costs associated with managing the research project

Please note that this list is not exhaustive, and Brain Canada Foundation must be consulted on expenses that are not listed here so that any partners involved can determine the eligibility of other categories of expenditure.

### **Criteria for Assessment**

There will be equal weighting of the following criteria at the Full Application stage. Academic reviewers will evaluate criteria 1, 2 and 4 in full. Whereas non-academic stakeholders will only evaluate the items marked with an asterisk (\*) based on the Lay Summary provided. For more information on the involvement of academic reviewers and non-academic stakeholders please see the Review Process section below.

#### **1. Innovation and Originality**

- The proposed research is grounded in scientific principles and is technically feasible.
- The proposed research offers new concepts and approaches with the potential to change paradigms in the field or address a critical barrier to progress.

#### **2. Feasibility**

- The proposed project can be successfully executed using the proposed methodology, within the timeframe, budget, and resources available.
- Foreseeable risks to the project's success have been identified and there are reasonable mitigation plans in place.
- Background and justification for the research has adequate literature citations and data.
- Principal Investigator and team members' track records of quality training and ability to carry out innovative research.

#### **3. Relevance\***

- The proposed project sufficiently addresses a stakeholder-identified priority.\*
- The Principal Investigator and/or team members have demonstrated potential to co-create solutions with stakeholders.\*
- The proposed project includes details for meaningful inclusion of all relevant stakeholders, including equity, diversity, and inclusion considerations (EDI).\*
- The proposed solution is likely to be useful.\*

#### 4. Potential for Impact

- The proposed project is likely to advance the current state of knowledge in the field.
- Knowledge generated by the project is likely to be useful to the intended target audience(s).\*
- The proposed project has meaningful and realistic quantitative and/or qualitative indicators to measure the impact(s) of the project.
- The proposed project appropriately incorporates sex- and gender-based analysis plus (SGBA+) and equity, diversity and inclusion (EDI) considerations, where possible.
- Overall, the proposed project has great potential to have positive impact for brain health in Canada.\*

#### Timeline

Launch of Request for Applications	August 4, 2023
Deadline for Registration Forms	17:00 ET, September 27, 2023
Feedback Panel Meetings	October-November 2023
Invitation to Full Application	November 23-30, 2023
Deadline for Receipt of Full Applications	17:00 ET, January 25, 2024
Notification of Decision	April 2024
Funding Begins	June 1, 2024

#### How to Apply

Please note that the *Innovation Grants for Research Impact in Traumatic Brain Injury* funding opportunity includes a Registration Form, participation in a Feedback Panel meeting, and a Full Application stage. Applicants must submit a Registration Form in order to be eligible for a Feedback Panel and must complete both of the aforementioned to submit a Full Application.

**It is the sole responsibility of the Principal Investigator to ensure their submission adheres to the requirements and is received by the deadlines specified above. Registration Forms and Full Applications received in any other format, exceeding the page limits, incomplete, or late, will be rejected.** An automatic email confirmation of receipt will be sent upon submission.

#### Registration Form

Registration Forms are to be submitted through Brain Canada's electronic grant management system, SmartSimple (<https://braincanada.smartsimple.ca/s/Login.jsp>), by the deadline specified above. Applicants will be required to create a SmartSimple account, and the *Innovation Grants for Research Impact in Traumatic Brain Injury* funding opportunity can be accessed through the "Funding Programs" section on their homepage.

#### Applicant Information

Brain Canada has implemented a demographic survey to evaluate the progress of its programs in fostering EDI. Please note that the survey will be sent via email following the Registration Form stage. The information collected will not be shared in an identifiable form with the public, external stakeholders (e.g., Health Canada, funding partners), or reviewers, and will have no impact on the evaluation of submitted grant applications. Survey responses are completely anonymized and aggregated to ensure protection of the identity of any individual. Please see Brain Canada's [Privacy Policy](#).

### Proposed Research Project

- Project title.
- Keywords describing the research project (maximum 10 words).
- Stakeholder priority from the list of nine provided above that will be addressed by your project.
- Anticipated budget amount.

### Lay Summary (maximum 500 words)

A description of the proposed research project, including a brief summary of the research and its goals, emphasizing the innovative and original features and how it meets the scope of the funding opportunity. At this stage, the summary should focus mostly on the outputs and outcomes of the project and less on methodology, as the methodology will be reviewed at the Full Application stage.

### Team Member Details

List the names, affiliations, and roles of the Principal Investigator, co-Investigators, and team members, excluding trainees, ensuring the composition of the team meets the eligibility criteria and includes the expertise needed to carry out the proposed research project.

### Optional Information

- Provide names and contact information for up to three individuals (Canadian and/ or international) with academic expertise in your research topic. Individuals should not have a conflict of interest.
- Individuals to whom the application should not be sent for review.

### Certification and Signature

The Principal Investigator must certify that all members of the team have agreed to their inclusion in the application and that they allow them to represent the team throughout the application process. Please note that institutional signatures are not required at the Registration Form stage.

## Full Application

Full Applications must be submitted through Brain Canada's electronic grant management system, SmartSimple, by **17:00 ET on January 25, 2024**.

### Proposed Research Project

- Project title.
- Keywords describing the research project (maximum 10 words).
- Stakeholder priority being addressed by your project, from the list provided above.

### Lay Summary (maximum 600 words)

Please ensure the lay summary is understandable by non-scientists and addresses the components of the Criteria for Assessment to be evaluated by the non-academic stakeholders, marked with an asterisk (\*). The summary should include details on how feedback received during the Feedback Panel meeting was incorporated into the proposed research project. A rationale should be provided if it was not feasible to include any or all feedback.



### **Proposal (maximum 1000 words)**

Please describe the current state of research on your topic and elaborate on the key knowledge gap(s) in the literature related to the stakeholder priority selected as the focus of this project. Please ensure the following items are included:

- The overall objectives to be achieved by the end of the funding period.
- The rationale for undertaking the study now and a clear statement of the unique and innovative features of the project, including how the project addresses the stakeholder priority selected from the list provided.

### **Methodology and Timeline (maximum 1000 words)**

Please describe the methodology that will be used to execute your project and the proposed timeline. Please ensure the following items are included:

- Timeline with key milestones; a template will be provided at the Full Application stage.
- The approaches, methods and techniques that will be used to achieve the stated objectives; and, if applicable, outline the specific contributions of any collaborators (people from different disciplines, academic institutions, and/or community or industry organizations) involved in the project.
- Methods of data analysis and a description of how they will be performed with appropriate rigour (reliability and validity, trustworthiness, statistical power; sex- and gender-based analysis plus (SGBA+), etc.).
- Include any equity, diversity and inclusion (EDI) considerations. Within the context of a research project, examples of where EDI may be considered include: i) the diversity of research team members, including multidisciplinary perspectives, ii) the selection of stakeholders to be engaged throughout the project as co-creators and the quality of relationships among the research team and these stakeholders when it comes to inclusion of their perspectives (e.g., Do they feel heard? Is there an atmosphere that builds trust?), iii) the population(s) sampled as part of the research data collection.
- Plans for stakeholder engagement throughout the research project for co-creating the research output(s) / solution(s) to the stakeholder priority selected from the list provided above.

### **Potential Risks (maximum 500 words)**

Please outline any potential risks to the project's success, as well as mitigation plans to address them.

### **Budget**

A yearly budget must be provided, along with a written budget justification (maximum 500 words) describing the proposed costs in each of the categories outlined above. A template will be provided at the Full Application stage. Please provide sufficient information to allow reviewers to assess the appropriateness of the cost allocation.

### **Sources of Funding**

A summary of other sources of funding, if any, related to the proposed project, including current or pending grant applications from any team member.

*Please note: Research applications can be related, but must be distinct from any other funded projects. It is the responsibility of the applicant to notify Brain Canada immediately should overlap arise from funding awarded during the application and review process of this funding opportunity.*

### **Community Impact** (maximum 300 words)

Please describe the expected short-term (less than one year), medium-term (one to five years) and long-term (more than five years) impacts / outcomes of the research.

Please note, some short-, medium- and long-term impacts / outcomes for your project have been suggested by stakeholders in the details that correspond to the priority you've selected from the list provided above; please consider these as a starting point to describe your intended outcomes (impacts), making any additions or revisions so that they are meaningful and can be evaluated. Include realistic qualitative and quantitative indicators for measuring them.

If you wish to add more outcomes, please refer to these main categories of research impacts as applicable: advancing knowledge; changes in practice and/or service delivery; changes in individual behaviour(s); changes in health outcomes; changes in health system capacity and accessibility; policy changes; building capacity; and broad socioeconomic impacts.

### **Target Audiences** (maximum 700 words)

Clearly describe the intended target audiences for the findings, plans for dissemination and stakeholder engagement toward achieving research impact. Please use the information hyperlinked to your selected priority as a starting point for identifying the target audiences for the priority you've selected.

### **Partners** (maximum 300 words)

Please describe any partnerships necessary for the success of this project and the level of commitment of the partner(s) for this project. Please detail any partner contribution(s) such as cash and/or in-kind contributions for product development, and any marketing / distribution to target audiences (end users) they can provide.

### **Research & Knowledge Mobilization Outputs** (maximum 500 words)

Please provide details about the product(s) you will be creating as part of your project, including commercial products, non-commercial products, and/or communication / knowledge products (e.g., publications, training materials, practice guidelines, videos, infographics).

### **Value Created for Target Audiences** (maximum 300 words)

Please describe the value your project will create for each target audience, using the value proposition statements included in the hyperlinked details for your selected priority as your starting point.

### **Figures and References**

Please upload any figures and references cited throughout the Full Application as a separate attachment (PDF). The font size for figures and legends must be a minimum of 10 points.

## Team Member Details

List the names, affiliations, and roles of the Principal Investigator, co-Investigators, and team members, excluding trainees, ensuring the composition of the team continues to meet the eligibility criteria and includes the expertise needed to carry out the proposed research project.

Biographical sketches (maximum four pages) of the Principal Investigator and all other faculty-level co-investigators and collaborators on the team must be submitted. A template will be provided at the Full Application stage. Biosketches are not required for consultants, trainees, technical personnel, or people with lived experience on the team.

## Institutional Approvals (maximum 300 words)

Applicants will be required to provide documentation, where applicable, demonstrating institutional approvals and compliance with policies on the ethical use of human subjects, animals, and biohazards prior to funding release. As such, please outline what applicable approvals you will have in place by the Full Application deadline, and timeline for any addenda or additional approvals specific to the proposal that may need to be added thereafter.

## Certification and Signatures

All signatures must be submitted along with the application by the Full Application submission deadline.

- Signature of the Principal Investigator
- Institutional Signature: Signature of the responsible official of the institution where the Principal Investigator will conduct the research.

## Review Process

### Registration Form

Registration Forms submitted by the deadline will undergo an administrative check and relevance review by Brain Canada to ensure alignment with the scope of this funding opportunity and all eligibility criteria are met. Applicants that are deemed ineligible will not proceed further in the process. All eligible applicants will be invited to participate in a Feedback Panel with a small group of stakeholders who have been involved in the process to-date. The Lay Summary included in the Registration Form will be provided to participating stakeholders in preparation for the Feedback Panel meetings.

### Feedback Panel Meetings

The information provided in the hyperlinked document for each priority is the result of focus groups conducted by Brain Canada during the month of May 2023 with relevant stakeholders. Brain Canada aims to invite some of the stakeholders to participate in Feedback Panel meetings with each applicant following Registration Form submission.

The purpose of the Feedback Panel meetings is to provide researchers with the opportunity to engage with non-academic stakeholders, to:

- present their idea, focusing more on the solution than the methodology;
- ask questions to stakeholders to clarify information provided in the hyperlink for their selected stakeholder priority;
- receive questions and feedback from stakeholders to further refine the idea and maximize the relevance and potential for impact(s)

Applicants are expected to include the feedback received from stakeholders into their Full Application. Where it is not possible to modify the project according to the feedback, applicants are asked to provide a rationale.

### **Full Application**

Full Applications submitted by the deadline will be reviewed by at least two members of an external Review Panel with scientific expertise in the relevant field(s) and at least one non-academic stakeholder. Brain Canada will take into account any conflicts of interest and other relevant considerations to ensure a balanced panel.

Based on the reviewer scores, the Review Panel will discuss the top applications. The Panel will recommend to Brain Canada the applications that have received a high merit score. Applicants will receive anonymized written reviewer comments. Applicants whose submissions were discussed at the Review Panel meeting will additionally receive Scientific Officer notes from the proceedings. Brain Canada will not entertain appeals against the assessment of the Review Panel.

### **Confidentiality and Ownership**

Brain Canada will keep all materials submitted for this funding opportunity confidential and only share them with reviewers, Review Panel members, and observers who have signed confidentiality and non-disclosure agreements.

Brain Canada does not claim ownership of intellectual property (IP) arising from the research they fund and expects that any IP arising from this funding is developed and commercialized according to the policies of the research institutions in which the research is performed.

### **Contact Information**

For more information, or if you have any questions regarding the application process, please contact Brain Canada at [programs@braincanada.ca](mailto:programs@braincanada.ca).