

## Request for Applications (RFA)

# Advancing the Evidence and Implementation of Activity-Based Therapy to Enhance Neuro-restoration in Individuals with Spinal Cord Injury

### About RHI

The Rick Hansen Institute (RHI) is a Canadian-based not-for-profit organization that drives innovation in spinal cord injury (SCI) research and care. By facilitating an international network of researchers, healthcare professionals, entrepreneurs, investors, people with SCI, and their supporters, we strive to improve the lives of people living with SCI in Canada and around the world.

### Background

The objective of the [RHI's Cure Program](#) is to further our understanding of the biology and physiology of SCI and to develop promising therapies for neuro-restoration in acute and chronic SCI. In order to achieve this, we fund innovative projects selected through strategic investments and open competitions that align to our program objective.

### Description of this RFA

#### Definition of ABT

Activity-based therapy (ABT) is defined as interventions that target activation of the neuromuscular system below the level of the lesion, with the goal of retraining the nervous system to recover a specific motor task<sup>1</sup>. Many existing technologies (e.g. functional electrical stimulation [FES]) and emerging technologies (e.g. epidural stimulation, robot assisted gait training) are used to provide neuromuscular activation below the level of the lesion, task specific training, or both. ABT that combines task specific training with neuromuscular activation below the level of the lesion offers possibilities for neuro-recovery impacting an individual's motor, sensory, and/or autonomic function (e.g. standing and walking, grasping and reaching, heart rate, blood pressure, respiratory functions, bowel and bladder function, sexual function, etc.). However, there is limited evidence on how to administer ABT (e.g. timing, method, dose) and the impact on outcomes, both of which need to be addressed to advance SCI care.

#### Focus of this RFA

In 2012, RHI supported the formation of a national community of practice in the area of standing and walking measures at Canadian SCI rehabilitation centres participating in the [Rick Hansen SCI Registry](#). Since then, ten of the SCI rehabilitation centres have started to administer a set of standardized outcome measures and stage patients to document their walking ability. Through this work and other network activities, ABT was identified as an RHI priority area for neuro-restoration which led to a stakeholder engagement in early 2019 to create a Canadian ABT Strategy for SCI. Themes from the Canadian ABT Strategy along with additional stakeholder input have informed the priority areas for this RFA in research and care.

Applications from within and outside of Canada are invited that address one or more of the following priority areas involving human subjects and that have the potential to be implemented across the SCI continuum:

- Creating a network to facilitate dialogue between hospital and community groups to support the implementation of ABT for individuals with SCI

- Developing methods for tracking ABT (e.g. define measure of ‘intensity’ for ABT, standardize measures for data collection, use data to answer questions about outcomes or evaluate potential benefits of ABT)
- Studying optimal timing, methods, and dose of ABT (e.g. summarize current research evidence, build neuro-physiological evidence, evaluate technologies (e.g. FES, etc.) to provide ABT, develop decision support tools for an individualized approach)
- Developing and implementing clinical ABT protocols

### Preference (if applicable)

- Projects that use the [International SCI Data Sets](#) and/or the [NIH National Institute of Neurological Disorders and Stroke SCI Common Data Elements](#)
- Projects that will make data available to other investigators (see section on “Preservation, Retention and Sharing” in [Tri-Agency Statement of Principles on Digital Data Management](#))
- Projects that are collaborative and involve multiple centres
- Projects that consider the inclusion of sex and gender in project methodology
- Projects that offer payment to Patient Partners in Research (see [CIHR](#))

### Note on MaRS Innovation Challenge

To support the priority area of methods for tracking ABT activities across the care continuum, we are also launching another competition with [MaRS](#). The objective of the MaRS Innovation Challenge is to develop new or validate existing technologies with commercialization potential that quantify clinical measures (intensity, dosage, and/or total amount of targeted body systems) and outcome measures (change in health outcomes, e.g. neuro-recovery, autonomic function, etc.).

For those interested in this area, we encourage you to apply to the MaRS Innovation Challenge which will be launched later in the fall.

### Award Amount and Duration

The total amount available for this competition is \$300,000 CDN.

Up to 3 awards will be funded, each for a maximum of 24 months.

The award is to support project activities. Ineligible project expenses include:

- Rent
- Capital expenses (e.g. computers, office equipment, furniture, fixtures, etc.)
- Indirect expenses (overhead, administrative cost)
- Travel and accommodation expenses in excess of rates as per RHI’s policy (see [Appendix 1](#))
- Activities that are not part of the project

### Eligibility Criteria

The Principal Applicant must:

- Be affiliated or be partnered with an institution, either within and outside of Canada, eligible to hold RHI funds (see below)
- Have an academic, clinical, or research appointment which allows him/her to pursue independent projects, including the proposed project
- Engage in independent research activities for the entire duration of the funding
- Accept RHI’s conditions of funding (see [Appendix 1](#))

Applicants must disclose all real or perceived conflicts of interest.

The Host Institution must:

- Be a [qualified donee](#) registered with Canada Revenue Agency
- Not be a private, for-profit organization

All Project Team Members must have the support of their organization to participate in the project.

## Key Dates

Key Dates	Target Date
RFA Opens	September 17, 2019
Registration of Intent	November 4, 2019 @ 23:59 PST
Deadline to Apply	December 9, 2019 @ 23:59 PST
Review Process	December 2019 - January 2020
Notice of Decision	February 2020
Award begins	March 2020

## Submission Process

### Step 1: Registration of Intent

Applicants must register their intent to submit a full application by emailing [funding@rickhanseninstitute.org](mailto:funding@rickhanseninstitute.org) with the following:

- Name of Applicant
- Name of Host Institution
- Proposed Project Title
- Proposed Total Budget

### Step 2: Full Application

Applicants must complete the Application Cover ([Appendix 2](#)) and include the following:

Detailed application instructions are provided in [Appendix 3](#).

1. Project Summary
  - a. Lay Summary
  - b. Scientific Summary/Abstract
2. Proposal (10 pages maximum for sections a - e and g, excluding appendices and attachments)
  - a. Significance of Issue(s) to be Addressed by Project
  - b. Project Methodology
  - c. Expected Outcomes and Scalability
  - d. Impact on Stakeholders and Knowledge Translation
  - e. Risk Analysis
  - f. Budget Request and Work Plan
  - g. Qualifications of Team Members
3. Attachments
  - a. Letters of Support (e.g. from institutions, from partner organizations)
  - b. Additional Information (e.g. copies of relevant approvals)
  - c. Conflict of Interest Form signed by Principal Applicant and Co-applicants (see [Appendix 4](#) for policy and [Appendix 5](#) for the form)

## Formatting and Submission

Please format your application as follows:

- **Font:** Calibri 11-point
- **Margin:** 1.0 inch all sides
- **Spacing:** 1.5 line
- **Header:** Insert name of Principal Applicant (Last, First) on the right-hand side
- **Footer:** Insert page number on the right-hand side
- **Budget:** Use the RHI template ([Appendix 6](#))
- **Curriculum Vitae (CV):** Those formatted for other institution (e.g. CIHR) may be used

Please compile your application into a single and indexed (i.e. include a table of contents) PDF and submit it electronically to [funding@rickhanseninstitute.org](mailto:funding@rickhanseninstitute.org) before the deadline. You will receive an acknowledgement of your application within 2 days of submission. Please contact us at the same email address if you do not receive an acknowledgement after that time.

Applicants may withdraw their application at any time prior to the closing date and time. At closing, all incomplete and late applications will be rejected.

## Review Process

A team of external reviewers will evaluate the submitted applications using the selection criteria outlined below.

### Evaluation Criteria

- **Merit and Feasibility:** Is the project within the scope of the RFA? Is there evidence of excellence and scientific merit of the project? Are the project's objectives realistic given the project's scope, schedule and identified resources?
- **Strategic Alignment:** Does the proposed project align with RHI's strategic plan, vision, and mission?
- **Achievable Value:** Is the output or outcome meaningful and of value to the relevant stakeholders? Is there evidence of meaningful engagement with people with SCI in the project design to make sure the outcome is meaningful to the SCI community?
- **Fulfilling a Defined Need:** Does this project address a clearly defined need and is the solution innovative, transformative, and/or disruptive? Is the potential impact of the project clearly articulated?
- **Evaluation Plan:** How will the outcomes be measured?
- **Operational Readiness:** Is the applicant appropriately trained, resourced, and capable of carrying out the proposed project? Is there evidence of meaningful involvement of the team to successfully carry out the project?

## Questions

All questions regarding this RFA are to be directed to RHI by email at [funding@rickhanseninstitute.org](mailto:funding@rickhanseninstitute.org).

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<sup>i</sup> Behrman et al. J Neurol Phys Ther. 2017 July; 41(Suppl 3 IV STEP Spec Iss): S39-S45