

## Validation of New Measures of Cognitive Function and Performance in Individuals with Stroke, SCI, and TBI (R2)

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### Overview

#### Why is this study needed?

There is currently a lack of valid and reliable cognitive measures for research and clinical use in the field of medical rehabilitation research. The lack of uniform instruments makes it difficult to draw comparisons or compile data across studies.

#### How will this study help patients and rehabilitation stakeholders?

This project will provide empirical evidence for the use of innovative measures in rehabilitation research, including cognition, and capitalize on the opportunity to extend measurement innovation to 3 additional domains. Results will provide researchers, clinicians and policymakers with empirical evidence to support the selection of outcome measures in clinical trials and will establish them as standards. The findings will provide valid outcome measures for translational studies that could determine the effectiveness of medical rehabilitation strategies.

#### What are the project objectives?

- **Objective 1:** Evaluate the sensitivity of the NIH Toolbox, the EFTP, TBI-QOL, and NeuroQOL in patients with SCI, TBI, and stroke vs. previously collected normative data from a non-injury comparison sample (see R1 for a description of this sample)
- **Objective 2:** Evaluate the sensitivity of the NIH Toolbox and "gold standard" neuropsychological instruments to severity of injury within diagnostic category
- **Objective 3:** Determine the convergent and discriminant validity of the NIH Toolbox and "gold standard" neuropsychological instruments
- **Objective 4:** Determine the ecological validity of the NIH Toolbox (e.g., how well it relates to measures of applied function and employment status)
- **Objective 5:** Describe the relationship between the NIH Toolbox and self-reported cognition (Neuro-QOL/SCI-QOL/SCI-CAT/TBI-QOL) and physical functioning/activity limitations (EFPT)
- **Objective 6:** Describe the relationship between the NIH Toolbox tasks and the adapted (or substituted) tasks that are developed in Project R1

#### How will the project objectives be achieved?

The aim of this study is to validate the NIH Toolbox in a sample of 200 persons with stroke, 200 with TBI, and 200 with SCI. We will employ a multifaceted assessment including examiner-administered cognitive tests, performance-based tasks, and self-reported cognitive functioning. We will examine the relation between varied measurement strategies and promising new measurement systems. Individuals will be stratified by diagnosis and severity of injury. Outcome instruments include the NIH Toolbox; the EFPT; TBI-QOL and NeuroQOL Cognition Domain; SCI-CAT, TBI-QOL, and the NeuroQOL Physical Function/Activity Limitation domain.

#### What agency funded the project?

[National Institute of Disability and Rehabilitation Research \(NIDRR\)](#)

**NIDRR Grant Number:** H133B090024 **What is the duration of the project?** October 1, 2009 – September 30, 2014

#### Project Staff

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