World Stroke Organization

15TH WORLD STROKE CONGRESS

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TORONTO, CANADA

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A translational roadmap for the use of precision non-invasive brain stimulation in stroke rehabilitation

Non-Invasive Brain Stimulation Expert Roundtable Members

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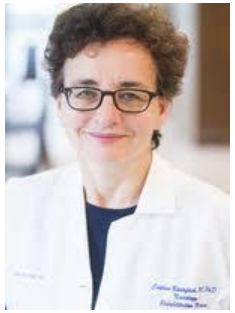

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NIBS Roundtable: Results

Guidelines

International Journal of Stroke
WSO

A translational roadmap for transcranial magnetic and direct current stimulation in stroke rehabilitation: Consensus-based core recommendations from the third stroke recovery and rehabilitation roundtable

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NIBS Roundtable: Results

- **Key outputs:** 5 Core Recommendations and development of a new SRRR3 Unified NIBS Research Checklist

Knowledge Gap 1: NIBS Mechanisms

Recommendation I

Preclinical and clinical studies/trials should:

(a) systematically compare stimulation parameters within and across modalities and quantify the effects of these parameters on the brain and behavior, and;

(b) use an evidence-based biological framework for target selection and confirm the intervention effect at the level of the target.

NIBS Roundtable: Results

Knowledge Gap 2: Methodological Rigor

Recommendation 2

Preclinical and clinical studies/trials should:

(a) include pre-registration and use of appropriate patient eligibility criteria, blinding and sham stimulation protocols, and appropriate paired therapies;

(b) conduct and report prospective power analysis to determine samples sizes appropriate to test primary hypotheses, and;

(c) use the SRRR3 Unified Checklist for NIBS Research and adhere to current recommended design and reporting guidelines.

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Knowledge Gap 3: Outcome Standardization

Recommendation 3

(a) Preclinical studies should:
- (i) conduct complete outcome assessments across cellular-molecular, physiological and behavioral domains, and;
- (ii) include standardized behavioral outcomes common to human studies

(b) Clinical studies/trials should:
- (i) use standardized assessments with established psychometric properties, and;
- (ii) report the minimal clinically important difference for outcomes that align with ICF categories and/or study hypotheses.

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Knowledge Gap 4: Clinically Relevant Preclinical Animal Models

Recommendation 4

Preclinical studies should use stroke animal models that:

(a) include head-equipment size relationship, aged animals, comorbidities, behavioral assessments, and the clinical trajectory of recovery in humans.

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Knowledge Gap 5: Optimized and Individualized NIBS Protocols

Recommendation 5

Preclinical and clinical studies/trials should:

(a) test multi-domain NIBS response;

(b) have sufficient sample sizes to identify response phenotypes; and

(c) use appropriate statistical methodology to identify predictive biomarkers.