

# INPLASY PROTOCOL

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**Review Stage at time of this submission:** Formal screening of search results against eligibility criteria.

**Conflicts of interest:**  
None declared.

## The current evidence base surrounding the Bobath Concept (NDT) in adult neurorehabilitation: a scoping review protocol

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**Review question / Objective:** The objective of the review is to gain a clear understanding of the current evidence base surrounding neurological rehabilitation based on the Bobath Concept (NDT) in the adult population. The specific questions, in regard to the available international published and unpublished literature, are: • What types of research are being conducted about the Bobath Concept? • How is the Bobath Concept being studied, defined, conceptualized and operationalized? • What are the main knowledge gaps about the research involving the Bobath Concept and the implications for rehabilitation science?

**Condition being studied:** The Bobath Concept approach in adult neurorehabilitation.

**INPLASY registration number:** This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 03 November 2021 and was last updated on 26 February 2022 (registration number INPLASY2021110011).

### INTRODUCTION

**Review question / Objective:** The objective of the review is to gain a clear understanding of the current evidence base surrounding neurological rehabilitation based on the Bobath Concept (NDT) in the adult population. The specific questions, in

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**Rationale:** The Bobath Concept is one of the most widely used approaches by therapists in neurorehabilitation. This contemporary practice utilizes an inclusive, individualized, problem-solving approach to the individual's clinical presentation and personal goals, with particular emphasis on movement analysis and motor recovery from the perspective of the integration of postural control, task performance and contribution of sensory inputs. Despite its popularity, in the past two decades, the theoretical assumptions underlying the Bobath Concept have been subject to criticism, as well as the lack of results from multiple systematic reviews and guidelines that have never proved that the Bobath Concept is superior (or not) to alternative treatment. A previous scoping review that gathered data from 2006 till 2012 was done in an attempt to construct clearer descriptions of theoretical foundations of the Bobath Concept and to identify key aspects of clinical practice. Moreover, major flaws in methodological quality were pointed out in intervention studies (in terms of operationalization transparency and study fidelity), leading to the need to explore other types of studies designed to demonstrate the potential Bobath effectiveness. As several non- and peer-review publications have been made since this last scoping, that deeply detail and discuss theoretical and clinical frameworks, and several intervention studies have been developed to compare the Bobath effectiveness to other interventions in the neurorehabilitation field, this should provide an insight to guide an update review of the Bobath Concept evolution.

**Condition being studied:** The Bobath Concept approach in adult neurorehabilitation.

## METHODS

**Search strategy:** The search strategy will aim to find both published and unpublished English, Spanish and Portuguese studies.

An initial limited search of MEDLINE (via PubMed) and CINAHL (via EBSCO) will be undertaken to identify articles on this topic, followed by analysis of the text words contained in the titles and abstracts, and of the index terms used to describe these articles. This will inform the development of a search strategy including identified keywords and index terms that will be tailored for each information source, with the assistance and guidance of a library scientist. As the latest scoping review of the Bobath Concept in adult neurorehabilitation collected studies from 2007 till 2012, an updated literature search will be conducted from 2012 until 2021. The reference lists of all included studies will be screened for additional studies. The possible logic grid for initial search will be: (adult NOT (pediatric OR child\*)) AND (Bobath OR Bobath Concept OR Bobath therapy OR Bobath approach OR Bobath method OR Neurodevelopmental treatment) AND (neurological rehabilitation OR neurorehabilitation OR physiotherapy OR physical therapy) AND (randomized controlled trials OR non-randomized controlled trials OR quasi-experimental OR before and after studies OR prospective cohort studies OR retrospective cohort studies OR case-control studies OR analytical cross-sectional studies OR systematic reviews OR scoping reviews OR narrative reviews OR letters to the editor OR editorials OR theoretical papers OR Delphi OR Delphi studies OR surveys OR qualitative studies).

**Participant or population:** The current scoping review will consider studies that include adult (aged 18 years or older) population with acquired neurological condition, without cognitive impairment.

**Intervention:** Not applicable.

**Comparator:** Not applicable.

**Study designs to be included:** The current scoping review will consider studies with quantitative, qualitative and mixed methods designs, like experimental, observational and epidemiological study designs, including randomized controlled trials, non-

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randomized controlled trials, quasi-experimental, before and after studies, prospective and retrospective cohort studies, case-control studies, analytical cross-sectional studies and Delphi studies. Gray literature including non-research articles like theoretical papers, editorials, letters to the editor, as well as opinion papers will be also included.

**Eligibility criteria:** The concepts to be explored in this scoping review include mapping the recent studies that describe the current knowledge, conceptualization/theoretical boundaries, assumptions and principles, key aspects of clinical practice and the available intervention research underlying the Bobath concept (NDT) approach in adult population, considering studies that have been conducted in healthcare facilities of any rehabilitation care type including, but not restricted to, hospitals, medical centers and investigation centers. Studies from any geographic setting will be eligible for inclusion.

**Information sources:** The databases to be searched will include: MEDLINE via PUBMED, EBSCO Cumulative Index to Nursing and Allied Health Literature (CINAHL), Web of Science (WOS), ScienceDirect, Elsevier SCOPUS and Physiotherapy Evidence Database (PEDro). Additional sources will be used to identify potential unpublished studies using other databases such as Google Scholar or free Internet searches.

**Main outcome(s):** Update of the current knowledge, conceptualization boundaries and intervention studies of Bobath Concept in the adult neurorehabilitation.

**Additional outcome(s):** Mapping the current framework underlying the key practice principles of the Bobath Concept. Recommendations for future intervention studies, in terms of study fidelity and intervention operationalization.

**Data management:** Following the search, all identified citations will be collated and uploaded into into Rayyan QCRI software

and duplicates removed. Following a pilot test, titles and abstracts will then be screened by two or more independent reviewers for assessment against the inclusion criteria for the review. The full text of selected citations will be assessed in detail against the inclusion criteria by two or more independent reviewers. Reasons for exclusion of sources of evidence at full text that do not meet the inclusion criteria will be recorded and reported in the scoping review. Any disagreements that arise between the reviewers at each stage of the selection process will be resolved through discussion, or with an additional reviewer/s. The results of the search and the study inclusion process will be reported in full in the final scoping review and presented in a Preferred Reporting Items for Systematic Reviews and Meta-analyses extension for scoping review (PRISMA-ScR) flow diagram.

**Strategy of data synthesis:** Data will be extracted by two independent reviewers from papers included in the scoping review using a draft data extraction tool. The data extracted will include specific details about the populations, concept, context and study methods of significance to the scoping review questions and specific objectives. Any disagreements that arise between the reviewers will be resolved through discussion or with a third reviewer. Authors of papers will be contacted to request missing or additional data where required. The draft data extraction tool will be modified and revised as necessary during the process of extracting data from each included study. Additional types of relevant data may be extracted from included studies as determined by the review team during the course of the conduct of the scoping review in line with the Joanna Briggs Institute methodology. Modifications will be detailed in the full scoping review report.

**Subgroup analysis:** Not applicable.

**Language:** English, Spanish and Portuguese.

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**Country(ies) involved:** Portugal and Canada.

**Keywords:** Bobath concept, Neuro Developmental Treatment (NDT), physiotherapy, neuro rehabilitation, scoping review, qualitative research, intervention studies.

**Contributions of each author:**

**Author 1 - Sofia Marques -** The author drafted the manuscript.

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