

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.

INTRODUCTION

Review question / Objective: Is there a relationship between lower limb activation and inhibition of overactive bladder? Could a specific rehabilitation program be useful to better manage neurological bladder?

Rationale: See condition being studied.

Can a lower limb-centered movement training inhibit overactive bladder? Systematic review of literature

Lamberti, G¹; Fontana, M²; Pelizzari, L³; Gandolfi, P⁴; Ciardi, G⁵.

Review question / Objective: Is there a relationship between lower limb activation and inhibition of overactive bladder? Could a specific rehabilitation program be useful to better manage neurological bladder?

Condition being studied: Asavoposon (2014), studying brain activations using the RM, states that there is a overlapping between pelvic floor motor areas and lower limb ones; previous studies involving brain imaging (Shafik 2009, 2003; Tai 2011) found that sensitise afferents from lower limb stimulation have an inhibitory effect on overactive bladder. Recently, Zillioux (2022) supports numerous optional therapies for overactive bladder management (defined third line therapies), stating that, despite their effectiveness in older populations, there is no data to support one option over another; so, there is a need to better study conservative treatments, in order to obtain the best evidence about their role to support neurological bladder treatment.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 22 July 2022 and was last updated on 22 July 2022 (registration number INPLASY202270099).

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stimulation have an inhibitory effect on overactive bladder.

Recently, Zillioux (2022) supports numerous optional therapies for overactive bladder management (defined third line therapies), stating that, despite their effectiveness in older populations, there is no data to support one option over another; so, there is a need to better study conservative treatments, in order to obtain the best evidence about their role to support neurological bladder treatment.

METHODS

Search strategy: (((((((("overactive"[All Fields] OR "overactivity"[All Fields]) AND ("urinary bladder, neurogenic"[MeSH Terms] OR ("urinary"[All Fields] AND "bladder"[All Fields] AND "neurogenic"[All Fields]) OR "neurogenic urinary bladder"[All Fields] OR ("neurogenic"[All Fields] AND "bladder"[All Fields]) OR "neurogenic bladder"[All Fields]) AND ("rehabilitation"[MeSH Terms] OR ("lower extremity"[MeSH Terms] OR ("lower"[All Fields] AND "extremity"[All Fields]) OR "lower extremity"[All Fields] OR ("lower"[All Fields] AND "limb"[All Fields]) OR "lower limb"[All Fields]) AND ("exercise"[MeSH Terms] OR "exercise"[All Fields] OR "exercises"[All Fields] OR "exercise therapy"[MeSH Terms] OR ("exercise"[All Fields] AND "therapy"[All Fields]) OR "exercise therapy"[All Fields] OR "exercise s"[All Fields] OR "exercised"[All Fields] OR "exerciser"[All Fields] OR "exercisers"[All Fields] OR "exercising"[All Fields])) OR (("stand"[All Fields] OR "standing position"[MeSH Terms] OR ("standing"[All Fields] AND "position"[All Fields]) OR "standing position"[All Fields] OR "standing"[All Fields] OR "standings"[All Fields] OR "stands"[All Fields]) AND ("education"[MeSH Subheading] OR "education"[All Fields] OR "training"[All Fields] OR "education"[MeSH Terms] OR "train"[All Fields] OR "train s"[All Fields] OR "trained"[All Fields] OR "training s"[All Fields] OR "trainings"[All Fields] OR "trains"[All Fields])) OR ("activable"[All Fields] OR "activate"[All Fields] OR "activated"[All Fields] OR "actives"[All Fields] OR "activating"[All Fields] OR

"activation"[All Fields] OR "activations"[All Fields] OR "activator"[All Fields] OR "activator s"[All Fields] OR "activators"[All Fields] OR "active"[All Fields] OR "acted"[All Fields] OR "actively"[All Fields] OR "actives"[All Fields] OR "activities"[All Fields] OR "activity s"[All Fields] OR "activitys"[All Fields] OR "motor activity"[MeSH Terms] OR ("motor"[All Fields] AND "activity"[All Fields]) OR "motor activity"[All Fields] OR "activity"[All Fields]) AND ("based"[All Fields] OR " basing "[All Fields]) AND ("education"[MeSH Subheading] OR "education"[All Fields] OR "training"[All Fields] OR "education"[MeSH Terms] OR "train"[All Fields] OR "train s"[All Fields] OR "trained"[All Fields] OR "training s"[All Fields] OR "trainings"[All Fields] OR "trains"[All Fields])) OR "exercise movement techniques"[MeSH Terms])) NOT "pelvic floor"[MeSH Terms]) NOT "child*"[All Fields]) NOT "PTNS"[All Fields]) NOT "tibial arteries"[MeSH Terms]) NOT "botulinum toxins"[MeSH Terms]) NOT (("sacrale"[All Fields] OR "sacralisation"[All Fields] OR "sacralised"[All Fields] OR " sacralization "[All Fields] OR "sacralized"[All Fields] OR "sacrals"[All Fields] OR "sacrum"[MeSH Terms] OR "sacrum"[All Fields] OR "sacral"[All Fields]) AND ("neuromodulate"[All Fields] OR "neuromodulating"[All Fields] OR "neuromodulation"[All Fields] OR "neuromodulations"[All Fields] OR "neuromodulative"[All Fields] OR " n e u r o t r a n s m i t t e r agents"[Pharmacological Action] OR "neurotransmitter agents"[MeSH Terms] OR ("neurotransmitter"[All Fields] AND "agents"[All Fields]) OR "neurotransmitter agents"[All Fields] OR "neuromodulator"[All Fields] OR "neuromodulators"[All Fields])) AND (2016:2022[pdat])

Filters: From 2016 to 2022

Database: Pubmed, Pedro, Cochrane database, trip database, Cinhal, Google Scholar, EDS base index.

Participant or population: Inclusion: Studies about patients affected by central nervous system's disease with diagnosis of overactive bladder, who undergo an

intensive rehabilitation program focused on lower limb exercise training. Exclusion: Studies about patients who undergo a program centered only on pelvic floor training/ PTNS (posterior tibial neurostimulation)/ FES (functional electrostimulation)/ Sacral neuromodulation; Studies about patients treated with botulinum toxin- Studies about children.

Intervention: Our goal is to find literature about lower limb physiotherapy applied on overactive bladder; particularly we'll search about: Resistance /strength exercise; Stand position training;Gait training; Cycloergometer training.

Comparator: N/A.

Study designs to be included: Inclusion criteria will be as follow: Randomized controlled clinical trials (RCTs); Cohort studies; Case/control studies. Exclusion criteria will be as follows: Animal research report; Pre-clinical studies; Case report/ case series; Conference acts, book chapters

Eligibility criteria: None additional criterion.

Information sources: Additional data will be selected by:

- electronic database
- trial register
- grey literature (if present)
- scientific organization website

Main outcome(s): The focus is about exercise application on overactive bladder management; our outcome measure will be as follow:

- Improvements of OAB (Over Active Bladder) assessment tool
- Improvements of urodynamics exam

Data will be carried out in order to conduct a systematic review of literature.

Additional outcome(s): Gap in the literature for identifying research relaunches for future investigations.

Data management: We will use a data extraction table including the following studies' characteristics:

- author(s) and year;
- country (where the study was conducted);
- study design;
- aim (s) of the study;
- participants characteristic (sample type and size);
- setting;
- sampling strategy
- data collection strategy;
- data analysis strategy;
- summary of findings;
- study limitations.

Quality assessment / Risk of bias analysis:

We will use The Cochrane tool for risk of Bias (RCTs/observational studies variant depending on results). We will use Pedro scale for scientific appraisal of evidence.

Strategy of data synthesis: A narrative systematic review will be carried out; no meta-analysis will be done.

Subgroup analysis: None planned.

Sensitivity analysis: None.

Language restriction: English.

Country(ies) involved: Italy.

Keywords: Overactive bladder; lower limb; neurological disease; rehabilitation; lower limb exercise.

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