INPLASY

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Identify the report as a systematic review, meta-analysis, or both

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ADMINISTRATIVE INFORMATION

Support - No.

Review Stage at time of this submission - The review has not yet started.

Conflicts of interest - None declared.

INPLASY registration number: INPLASY2025120029

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 9 December 2025 and was last updated on 9 December 2025.

INTRODUCTION

*R*eview question / Objective The aim of this study is to systematically review the effects of repetitive peripheral magnetic stimulation (rPMS) alone or in combination with other interventions on improving lower extremity motor function and activities of daily living (ADL) in patients with stroke.

Condition being studied The condition being studied is post-stroke lower extremity motor dysfunction, with the intervention of repetitive peripheral magnetic stimulation (rPMS).

METHODS

Participant or population Adult patients (aged ≥ 18 years) diagnosed with stroke via relevant clinical examinations such as computed tomography (CT) and magnetic resonance imaging (MRI); patients with lower extremity motor dysfunction (Fugl-Meyer Assessment of Lower Extremity Motor Function score [FMA-LE] < 34) or gait abnormalities (e.g., decreased walking speed, balance dysfunction) secondary to stroke; patients with clear consciousness who can cooperate with treatment.

Intervention Patients receiving repetitive paired magnetic stimulation (rPMS) alone or rPMS combined with other interventions.

Comparator Patients receiving sham repetitive paired magnetic stimulation (SPMS) or no rPMS treatment.

Study designs to be included Randomized controlled trials (RCTs) or non-randomized controlled trials.

Eligibility criteria Inclusion criteria:Adult patients (aged ≥ 18 years) diagnosed with stroke via relevant clinical examinations such as computed

tomography (CT) and magnetic resonance imaging (MRI); patients with lower extremity motor dysfunction (Fugl-Meyer Assessment of Lower Extremity Motor Function score [FMA-LE] < 34) or gait abnormalities (e.g., decreased walking speed, balance dysfunction) secondary to stroke; patients with clear consciousness who can cooperate with treatment.

Exclusion criteria:Participants with neurological disorders other than stroke; Single-case studies; Literature published in the form of conference abstracts, dissertations/theses, or book chapters.

Information sources The information sources for this systematic review included electronic databases (PubMed, Embase, CENTRAL, CNKI, Wanfang Data,VIP, CBM) and clinical trial registries (ClinicalTrials.gov). Additionally, reference lists of included studies and relevant reviews were manually searched to identify potential eligible trials.

Main outcome(s) Fugl-Meyer Assessment of Lower Extremity Motor Function (FMA-LE); activities of daily living (ADL) measured by scales including the Modified Barthel Index (MBI), Barthel Index (BI), or Functional Independence Measure(FIM).

Additional outcome(s) Integrated electromyography (iEMG) values of major lower extremity muscles (e.g., quadriceps femoris, tibialis anterior, gastrocnemius); active range of motion (AROM) of lower extremity joints; Berg Balance Scale (BBS); Clinical Spasticity Index (CSI) 、 motor evoked potentials (MEP).

Quality assessment / Risk of bias analysis Two researchers independently assessed the risk of bias of the included literature using the Cochrane Risk of Bias Assessment Tool. The assessment comprised seven domains:(I) Random sequence generation;(II) Allocation concealment;(III) Blinding of participants and personnel;(IV) Blinding of outcome assessment;(V) Incomplete outcome data;(VI) Selective reporting;(VII) Other bias.Each domain was rated as "low risk", "unclear risk", or "high risk" based on the available information. In case of discrepancies during the assessment, a third researcher would be consulted to facilitate discussion and reach a consensus decision.

Strategy of data synthesis The strategy of data synthesis was determined based on the heterogeneity of outcome measures across included studies: a fixed-effects model was used for homogeneous data, while a narrative synthesis was adopted for heterogeneous data.

Subgroup analysis Subgroup analysis was not planned for this meta-analysis. The primary objective of the present study was to evaluate the overall efficacy of rPMS on lower extremity motor function in stroke patients, rather than to explore differential effects across subgroups.

Sensitivity analysis A sensitivity analysis was performed by excluding each study one by one to assess the impact of individual trials on the pooled effect size of rPMS intervention.

Language restriction English or Chinese.

Country(ies) involved We extracted information on the countries involved (nationality of authors/ affiliations) from each included study to assess the geographical representativeness of the evidence.

Keywords stroke, lower extremity, motor function, repetitive peripheral magnetic stimulation.

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