

# INPLASY PROTOCOL

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**Support:** None.

**Review Stage at time of this submission:** Preliminary searches.

**Conflicts of interest:**  
None declared.

## The effects of physical exercises on the functional performance, cognitive function and quality of life of children and adolescents with cerebral palsy

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**Review question / Objective:** What are the effects of physical exercises on functional performance, cognitive function and quality of life in children and adolescents with cerebral palsy compared to the usual care?

**Condition being studied:** Cerebral palsy.

**Eligibility criteria:** Types of studies: Randomized controlled trials (RCTs) Types of participants :Children and adolescents human participants aged<18 years living with Cerebral palsy. Types of outcome measures: The primary outcome of interest is functional performance. Other secondary out comes include cognitive function and quality of life.

**INPLASY registration number:** This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 04 May 2022 and was last updated on 04 May 2022 (registration number INPLASY202250023).

### INTRODUCTION

**Review question / Objective:** What are the effects of physical exercises on functional performance, cognitive function and quality of life in children and adolescents with cerebral palsy compared to the usual care?

**Rationale:** Cerebralpalsy (CP) is a gross motor deficits and neuromuscular dysfunction resulting from non-progressive damage or abnormal development of an immature brain (Chen, A.,DyckHolzinger, S.,OskouiM,2020). CP compromises the brain maturation processes resulting in delayed developmental milestones

(Patel,D.R.,Neelakantan,M.,Pandher,K.,2020 ). The functional disabilities which arise impose significant restraints on the individual's capacity to fulfill some obvious biological roles and necessities inactivities of daily living(Kalisperis,F.R., Miller-Skomorucha,K.andBeaman,J.,2020).This explains why individuals with CP are either incapable or experience difficulties performing basic functional activities for independent living (such as sitting, rolling, standing, walking, running, self-grooming and feeding among others) (Bjornson,K.,Fiss,A.,Avery,L.,etal,2020.). Inability to live independently leads to a deterioration in the quality of life(Weatherhead,C.,Wade,R.,Nash,C.,etal, 2020.

**Condition being studied:** Cerebral palsy.

## METHODS

**Search strategy:** The search strategy will be applied to 8 databases (AMED, CINAHL, The Cochrane Library, EMBASE, EMCARE, MEDLINE, PsycINFO, PubMed) Intervention- Exercise OR Exercise training OR Aerobic exercise OR resistance training OR Isometric exercise OR strength training OR Physical exercise OR Exertion OR Physical activity OR Strengthening exercise Outcome- Functional performance -Task performance OR Physical function OR Task specific balance OR Functional outcome OR Functional abilities OR Functional capacity OR Muscle function OR Functional mobility OR Gait function Outcome- Cognitive function-Mental performance OR Cognition OR Attention OR Intellectual function OR Memory OR Cognitive functional markers Outcome- Quality of life-related quality of life OR HRQOL OR QOL OR Life quality.

**Participant or population:** Children and adolescents - aged < 18 years living with cerebral palsy.

**Intervention:** Physical exercise (aerobic or resistant exercises or combined) intervention for children and adolescents with cerebral palsy.

**Comparator:** People that received usual care or interventions that did not involve physical exercises (aerobic and resistant exercises).

**Study designs to be included:** Randomized control trial.

**Eligibility criteria:** Types of studies: Randomized controlled trials (RCTs) Types of participants :Children and adolescents human participants aged <18 years living with Cerebral palsy. Types of outcome measures: The primary outcome of interest is functional performance. Other secondary outcomes include cognitive function and quality of life.

**Information sources:** AMED, CINAHL, The Cochrane Library, EMBASE, EMCARE, MEDLINE, PsycINFO, PubMed).

**Main outcome(s):** Functional performance.

**Additional outcome(s):** Cognitive function and quality of life.

**Data management:** -Search result will be exported into Refworks to check for duplication of studies. Bibliographic records will be exported from Refworks into Microsoft Excel (Microsoft. Microsoft Excel. Redmond, Washington: Microsoft, 2010. Computer Software) following the duplication to facilitate the management and selection of articles for inclusion. Eligibility questions and forms for the screening of the studies included for the review will be developed, piloted and refined subsequently.

**Quality assessment / Risk of bias analysis:** Will be assessed using the Physiotherapy Evidence Data Base. (PEDro scale).

**Strategy of data synthesis:** Will consist of descriptive characteristics and a quality appraisal tool.

**Subgroup analysis:** Will be carried out where such distinctions are available.

**Sensitivity analysis:** Sensibility analyses will be performed to study the potential

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influence of significant heterogeneity which could be due to intervention types or comparator on the treatment effect direction. This will be done only when there are more than two studies with homogeneous subsets. This will be performed on the primary outcomes only.

**Language:** English.

**Country(ies) involved:** Nigeria.

**Other relevant information:** None.

**Keywords:** Physical exercise, aerobic exercise, strengthening exercise, cerebral palsy, functional performance, cognitive function, quality of life.

**Dissemination plans:** The study will be published, presented at conferences, seminars and clinical meetings.

**Contributions of each author:**

**Author 1 - stella ohaike** - conceived and designed the study, will participate in literature search and review, data extraction, statistical analysis and also help draft the final manuscript, will participate in the coordination of the study.

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