

# INPLASY PROTOCOL

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**Support:** NA.

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

**Conflicts of interest:**  
None declared.

## Health related physical fitness in children with developmental coordination disorder

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**Review question / Objective:** The study aims to synthesize and critically appraise evidence on the relationship between motor competence and physical fitness outcomes of children with developmental coordination disorder.

**Condition being studied:** Developmental coordination disorder.

**Main outcome(s):** 1) Determine the associations of motor competence and physical fitness indicators (e.g., body composition, cardiorespiratory fitness, muscle strength & endurance, flexibility); 2) Explore the role of demographic information (e.g., age, body mass index, and level of disease).

**INPLASY registration number:** This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 29 April 2022 and was last updated on 29 April 2022 (registration number INPLASY202240168).

### INTRODUCTION

**Review question / Objective:** The study aims to synthesize and critically appraise evidence on the relationship between motor competence and physical fitness outcomes of children with developmental coordination disorder.

**Condition being studied:** Developmental coordination disorder.

### METHODS

**Participant or population:** Children with developmental coordination disorder.

**Intervention:** None.

**Comparator:** None.

**Study designs to be included:** Observational designed.

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**Eligibility criteria:** Observational studies report associations between motor competence and physical fitness of children with developmental coordination disorder.

**Information sources:** MEDLINE, Web of Science, EMBASE, Cochrane Central Register of Controlled Trials, Cochrane Database of Systematic Review, etc.

**Main outcome(s):** 1) Determine the associations of motor competence and physical fitness indicators (e.g., body composition, cardiorespiratory fitness, muscle strength & endurance, flexibility); 2) Explore the role of demographic information (e.g., age, body mass index, and level of disease).

**Quality assessment / Risk of bias analysis:** The risk of bias and methodological quality of the included trials will be assessed independently by two reviewers, who used the Cochrane Collaboration's tool to check for incomplete outcome data, selective reporting, and other biases. Each reviewer was required to award one of three grades (either unclear, low risk, or high risk) to each item. The Grading of Recommendations Assessment, Development, and Evaluation (GRADE) system was used to assess the quality of the evidence from very low to high based on the risk of bias, inconsistency, indirectness, imprecision, and publication bias. A third reviewer was consulted if any disagreement occurred.

**Strategy of data synthesis:** Meta-analyses will be performed using R studio and meta-analytic packages. The pooled correlation coefficient estimate and 95% confidence interval in the overall analysis will be calculated using a random-effects meta-analysis of correlations based on Fisher's Z transformation. The heterogeneity between studies will be incorporated if varied correlation techniques are used. Heterogeneity and variance will be assessed using the I-squared and  $\tau$ -squared.

**Subgroup analysis:** Subgroup analyses may be conducted by: 1) motor ability measurements (e.g., MABC and BOT); 2) BMI (i.e., underweight, healthy weight, overweight, obese); 3) Age (i.e., early childhood, middle childhood, and adolescence).

**Sensitivity analysis:** The leave-one-out method will be used for sensitivity analyses by omitting one study successively and comparing the influence of each study on the overall pooled estimate.

**Country(ies) involved:** Chine and USA.

**Keywords:** developmental coordination disorder; motor coordination; motor development; physical fitness.

**Contributions of each author:**

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