

Meta-Analysis of Exercise Interventions for Children and Adolescents Diagnosed with Pediatric Metabolic Syndrome

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Abstract : Objective: The purpose of this meta-analysis was to examine the evidence for the effectiveness of exercise interventions on reducing metabolic components in children and/or adolescents diagnosed with Paediatric Metabolic Syndrome. Methods: A computerized search was made from four databases: PubMed, PsycInfo, SPORTDiscus, Cochrane Central Register. The analysis was restricted to children and adolescents with metabolic syndrome examining the effect of exercise interventions on metabolic components. Effect size and 95% confidence interval were calculated and the heterogeneity of the studies was estimated using Cochran's Q-statistic and I². Bias was assessed using multiple tools and statistical analyses. Results: Thirteen studies, consisting of 19 separate trials, were selected for the meta-analysis as they fulfilled the inclusion criteria (n=908). Exercise interventions resulted in decreased waist circumference, systolic blood pressure, diastolic blood pressure, fasting glucose, insulin resistance, triglycerides, and High-Density Lipoprotein Cholesterol (HDL-C). Conclusions: This meta-analysis provides insights into the effectiveness of exercise interventions on markers of Paediatric Metabolic Syndrome in children and adolescents.

Keywords : metabolic syndrome, syndrome x, pediatric, meta-analysis

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