

Exercise Therapy for Pediatric Hypertension: An Overview

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Abstract

This letter to editor originally intended to highlight the role of exercises in pediatric hypertension through an overview of studies in PubMed. The anti-hypertensive effects of exercise were demonstrated in many studies with concurrent improvements in cardiovascular fitness. Regular aerobic exercise also reduced blood pressure and restore vascular changes in obese pediatric patients with hypertension.

Keywords: pediatric hypertension; childhood hypertension; pediatric cardiology.

This letter to editor originally intended to highlight the role of exercises in pediatric hypertension through an overview of studies in PubMed.

Anecdotally, exercises were believed to be harmful due to probable complications such as stroke or myocardial infarction, and hence hypertensive children and adolescents are frequently arbitrarily excluded from sports or exercise.¹

Danforth et al² studied the antihypertensive effects of a 12-week aerobic exercise program on 11 low-socioeconomic-status (SES) Black children and found significant decreases in diastolic and systolic blood pressure, with concurrent improvements in cardiovascular fitness.

Kelley et al³ performed a meta-analysis of 12 RCTs representing 16 outcomes in 1,266 subjects to examine the effects of exercise on resting systolic and diastolic blood pressure in children and adolescents. Exercise-induced reductions in blood pressure were approximately 1% and 3% for resting systolic and diastolic blood pressures, both of which were statistically non-significant.

Primary hypertension in childhood is commonly associated with obesity, with other influencing factors, such as dietary sodium and exercise.

Sympathetic nervous system imbalance, impairment of the physiological mechanism of pressure natriuresis, hyperinsulinemia and early vascular changes are involved in the mechanisms causing elevated BP in obese children and adolescents. Regular aerobic exercise also reduced blood pressure and restore vascular changes in obese with hypertensive pediatric patients.⁴

Most of the studies on exercise show beneficial effects, with little information on effective exercise dosage-type, intensity, duration, and frequency of sessions needed to obtain optimal BP control.⁵

The anti-hypertensive effects of exercise were demonstrated in many studies with concurrent improvements in cardiovascular fitness. Regular aerobic exercise also reduced blood pressure and restore vascular changes in obese pediatric patients with hypertension.

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