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## Physical activity and cardiovascular risk factors in children: meta-analysis of randomized clinical trials.

Cesa CC<sup>1</sup>, Sbruzzi G<sup>2</sup>, Ribeiro RA<sup>3</sup>, Barbiero SM<sup>4</sup>, de Oliveira Petkowicz R<sup>5</sup>, Eibel B<sup>6</sup>, Machado NB<sup>7</sup>, Marques Rd<sup>8</sup>, Tortato G<sup>9</sup>, dos Santos TJ<sup>10</sup>, Leiria C<sup>11</sup>, Schaan BD<sup>12</sup>, Pellanda LC<sup>13</sup>.

### Author information

### Abstract

**OBJECTIVE:** To assess the effects of physical activity interventions in preventing cardiovascular risk factors in childhood through a systematic review and meta-analysis of randomized clinical trials (RCTs).

**METHODS:** A search of online databases (PubMed, EMBASE and Cochrane CENTRAL) was conducted from inception until June 2013. RCTs enrolling children 6-12years old conducted physical activity interventions longer than 6months, assessing their effect on body mass index (BMI), systolic (SBP) and diastolic blood pressure (DBP), total cholesterol (TC) and triglycerides (TG) were included. Data analysis was performed using a random-effects model.

**RESULTS:** Of 23.091 articles retrieved, 11 RCTs (10.748 subjects) were included. Physical activity interventions were not associated with reductions of BMI [-0.03kg/m(2) (95%CI -0.16, 0.13) I(2) 0%]. However, there was an association between the interventions and reduction of SBP [-1.25mmHg (95%CI -2.47, -0.02) I(2) 0%], DBP [-1.34mmHg (95%CI -2.57, -0.11) I(2) 43%] and TG [-0.09mmol/L (95%CI -0.14, -0.04) I(2) 0%], and increase of TC [0.14mmol/L (95%CI 0.01, 0.27) I(2) 0%].

**CONCLUSION:** As physical activity intervention programs lasting longer than 6months are associated with reductions in blood pressure levels and triglycerides, they should be considered to be included in prevention programs for cardiovascular diseases in schoolchildren.

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**KEYWORDS:** Blood pressure; Child; Exercise; Lipids; Motor activity; Obesity

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