

Exercise and adiposity in overweight and obese children and adolescents: a systematic review with network meta-analysis of randomised trials.

Childhood obesity is one of the most pressing public health concerns of the 21st century. Not only is the prevalence of overweight and obesity amongst children and adolescents increasing at an alarming rate, but it is also no longer just a high-income country concern. In 2016, over 41 children and adolescents aged 5-19 were affected by overweight or obesity. In the short term, childhood obesity can give rise to bone and joint problems, sleep apnoea, social and psychological issues, including low self-esteem. In the long term, childhood, and adolescent overweight and obesity tracks into adulthood, placing overweight and or obese adults at a greater risk for cardiovascular diseases, type 2 diabetes, stroke, cancer, osteoarthritis.

Although physical activity supports weight maintenance and weight loss efforts, research has highlighted discrepancies of exercise-induced changes on adiposity (body mass index (BMI), fat mass, and percent body fat). This systematic review aims to dispel the conflicting findings. The study establishes a hierarchal list of recommendations for the most effective types of interventions (aerobic, strength training, both) to improve measures of adiposity.

Fifty-seven studies representing 127 groups and 2792 participants revealed significant reductions in BMI, fat mass, and percent body fat in children and adolescents exercising on average 3.3 days per week. The average length of training in the randomised control trials included averaged 14.1 weeks, with most participants engaging in 42-minute sessions at a time, 3.3 days per week. Combined aerobic and strength training was the best for improving both fat mass, and percent body fat, while aerobic exercise contributed to the most significant changes for BMI.

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