
Physical activity intervention in overweight/obese children and adolescents: endurance and/or resistance training?

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General Physical Activity recommendations for youth

According to the World Health Organization



- ≥ 60 min /day of moderate to vigorous intensity physical activity
 - Aerobic exercise
 - +
 - Activities that strengthen muscles and bones

Children/Adolescents

Do not only target body weight or fat mass loss: exercise has many benefits for health independent of change in body composition

Aerobic or Resistance exercises: definitions

Aerobic exercise training (also termed endurance or cardio training) refers to exercise programs at low-to-moderate intensities that relies primarily on the aerobic metabolism.



Also called strength training or weight training, **resistance training** involves the use of muscular strength to work against a resistive force or move a weight. Resistance exercises are designed to gradually develop greater resistance in order to induce muscular contractions which develop strength, anaerobic endurance, and the size of skeletal muscles.

Aerobic vs. Resistance training?

Effects on Body Composition

	Body weight	BMI	Fat Mass	Lean Mass	Visceral Adipose Tissue	Intra-muscular fat	Inta-hepatic Lipid
Endurance	↓	↓	↓	↓	↓	↓	↓
Resistance	↑	↑	↔	↑	↔	↔	↔

Effects cardiovascular and metabolic parameters

	Insulin sensitivity	LDL-C	HDL-C	Triglycerides	CHO-Total	Blood Pressure
Endurance	↑	↓	↔	↓	↓	↓
Resistance	↑	-	↑	↓	-	↓

Effects on Physical fitness

	Musculoskeletal fitness	Cardiorespiratory fitness
Endurance	↔	↑
Resistance	↑	?

Recommendations



Resistance and endurance exercises have to be combined



Practitioners are encouraged to follow the classical general recommendations for exercises prescriptions in children and adolescents

60 minutes or more of Physical activity every day
the main core of the 60 minutes should be **moderate to vigorous activities**
+
muscle and bone **strengthening** about 3 times a week.