

## INTRODUCTION

Placebo has been traditionally defined as a medically inert substance used primarily as controls in clinical trials. However, in recent decades, more and more studies started focusing on the effect of the placebo itself as a psychobiological effect carrying curative potential.

## OBJECTIVES

The aim of the study was to examine the effect of information placebo on fitness test results in normal weight, overweight and obese children.



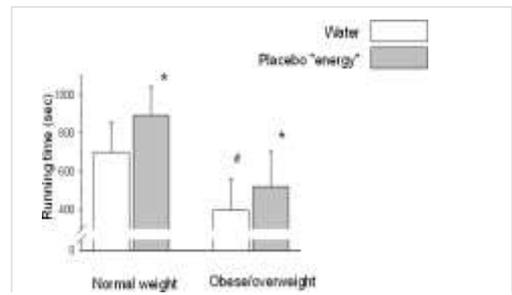
## METHOD

Twenty-four pre-pubertal children with overweight or obesity and 24, age and maturity-matched normal weight children performed a progressive treadmill exercise test twice. Different types of information were randomly provided regarding a water drink consumed prior to testing; standard (water) versus deliberate positive (presumed energy drink, placebo) information.

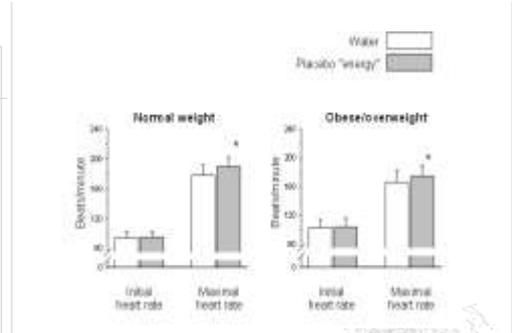


## RESULTS

Following the placebo drink, both groups demonstrated significantly higher peak heart rate (overweight 165.8 ±16.7 versus 174.2±14.8 bpm and normal weight 177.9±13.6 versus 189.8±12.2bpm) and longer time to exhaustion (overweight 396.9±161.9 versus 521.5±182.5 sec; normal weight: 700.1±155.2 versus 893.3±150.1seconds). Despite longer exercise duration and higher peak heart rate, average and peak rate of perceived exertion were significantly lower after the placebo drink (overweight 14.1±2.5 versus 12.5±2.5; normal weight 12.1±1.4 versus 10.7±1.5), with significantly shorter recovery time (overweight 132.2±28.5 versus 118.4±31.6; normal weight: 106.7±18.6 versus 96.7±17.8seconds).



The effect of water versus placebo on running time of children with obesity or overweight and normal weight (\* p < 0.05).



The effect of water versus placebo on the heart rate of children with obesity or overweight and normal weight (\* p < 0.05).

## CONCLUSIONS

Our results demonstrate a remarkable information placebo effect on children's endurance capacity test results and recovery. The placebo effect was significant in normal weight as well as in overweight and obese children, irrespective of their training level. This highlights the fact that if properly encouraged children can perform exercise better, and that information (placebo), and other encouragements may play a role in promoting exercise performance and increasing energy expenditure in children, and especially in those with obesity.