



# THE PHYSIOLOGICAL EFFECT OF FOOTBALL IN PREPUBESCENT CHILDREN

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## Introduction

Football as an invasive field game is characterized by intermittent activity profiles with an very important aerobic demands. VO<sub>2</sub>max and the Ventilatory Anaerobic Threshold (VAT) have traditionally been considered the “gold standarts” for evaluation of endurance performance and the most researchers in this matters says that the first one is an indicator of greater fidelity in the characterization of aerobic power of an individual, as well as their level of fitness and the second provides a better index of aerobic performance (1,2,3,4). However, when we talk about children they are very different from the adults. This study intends to know the physiological effect of a sport such as football in the prepubescent child from the same school and city.

## Methods

Participants: 8 football players (FP - age: 11,73 ± 0,46; weight: 41,83 kg ± 9,35; BMI: 17,35 ± 2,07) and 10 non football players (NFP - age: 11,42 ± 0,46; weight: 43,20 kg ± 4,70; BMI: 19,10 ± 1,91). The entire sample was randomly assessed from the same city (Rio Maior, Portugal) and the same school.

A maximal, progressive and incremental test using ergo-spirometry procedures (Cosmed®  $\dot{V}O_2$ ) was selected to test in laboratorial context. Heart rate was measured with the Polar S610. The comparison and descriptive data was analyzed between the groups (SPSS, ver.15.0).



## Results

The comparison between the groups are shown in table 1.

		t	Sig (2-tailed)
Football Players	Weight	0,448	0,659
	BMI	2.099	0,048
Non Football Players	VO <sub>2</sub> max/kg	-3,563	0,002
	VAT	-2,577	0,018

Table 1 – Comparison between the groups (T-Test).

Significant differences were observed for the VO<sub>2</sub>max/kg and VAT parameters between the groups. However there were no differences found in the percentage of the LAV from the VO<sub>2</sub>max/kg. We also identify some differences in the recovery phase.

## Discussion/Conclusions

When we talk about children that attend to regular practice of football, we can say that this sport promote a very slightly adaptation on physiological characteristics in children as saw in the graphic analysis. So, the results suggest that there is an aerobic adaptation due to the practice of this sport in these children.

## References

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