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Autor(es): Silva, J. E.; Dantas, E. H. M.
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**CHRONIC BEHAVIOR OF THE BLOOD
PRESSURE AFTER SWIMMING TRAINING
IN HYPERTENSIVE ADULTS (*ECSS 2013)**

Silva, J.E.¹, Dantas, E.H.M.²

1: jairo.eleoterio@yahoo.com.br 2: estelio.dantas@unirio.br

INTRODUCTION

Hypertension (HPT) is one of the major health problem throughout the world, affecting about one billion individuals worldwide. It is estimated a prevalence of (HPT) between 22% to 57% (Wolf-Maier et al, 2003). There is few studies involving hypertension and swimming in human beings. Therefore, the aim of this study was to analyse the Chronic behavior of Systolic Blood Pressure (SBP) after Swimming training in hypertensive adults.

METHODS

In this investigation, the sample was randomly selected and the subjects were sorted into two groups: the experimental group (EG) and the control group (CG). Thus, the final sample consisted of 30 subjects with mild and moderate hypertension. The EG individuals (n=20) took part in a regular swimming programme consisting of three weekly fifty-minute sessions of training (ST) for 8 weeks, whereas CG individuals (n=10) were instructed not to alter their physical activity and nutritional habits.

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RESULTS

At the end of the 8 weeks there was a decrease of 8,82 mmHg in Systolic Blood Pressure (SBP) at rest when compared with the baseline measurements. The Kruskal-Wallis test was used to determine statistical significance ($p < 0.05$).

¹ University of Coimbra (Coimbra, Portugal)

² Labimh – UNIRIO (Rio de Janeiro, Brazil)

Table 1: Physical Characteristics of the Subjects.

Variables	Experimental (n=20)	Control (n=10)	p-value
Age	45±4.2	46±3.8	0.691
Height (cm)	156±6	158±5.4	0.492
BM (kg)			
Before	58±6	58.6±8.3	0.051
After	58.3±6.2	58.4±7.2	0.064

SD = standard deviation; n = number of subjects in the group;

p-value = significance level; BM = body mass;

Table 2: Systolic (SBP) and diastolic (DBP) blood pressures before and after swimming practice.

Variables	EG (n=20) Average ± SD	%	p-value
SBP			
Pre-Exercise	147,60±2.26		
Post-Exercise	138,78±3.23	- 6%	0.000 *
DBP			
Pre-Exercise	93,63±1.50		
Post-Exercise	88,73±3.4	- 5.2%	0.023

Average = arithmetic average of the results; DP = standard deviation; n = number of subjects; SBP= systolic blood pressure; DPB= Diastolic blood pressure; % = decreases after exercise; * Statistically significant p-value ≤ 0.05.

Graphic 1: Chronic Behavior of SBP

DISCUSSION

Although some studies (JNC, 2003; AHA., 2003; Pescatello, et al. 2004) recommend swimming as a form of physical activity to be used in the prevention and treatment of hypertension, rare studies involving human beings have verified the relationship between the practice of swimming and hypertension. In relation to the chronic behaviour of arterial pressure at the end of the intervention, there were, on average, decreases of 6.05 % for SBP between the measurements taken before and after the programme. The latest studies aimed at verifying the effects of swimming on hypertension in humans reported results similar to those found in our study (Tanaka et al. 1997; Silva et al. 2009).

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