

**154 - AEROBIC CONDITIONING LEVEL VO2 MAXIMUM IN PHYSICAL EDUCATION TEACHERS**

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**INTRODUCTION**

The evaluations search for index that can reflect the integration that must there be between systems cardiovascular, respiratory and muscular, in a way that can be understood the increase the energetic demand during physical exercises. This interest appears as to the preoccupation of what it will be the intensity of the intervention efforts in the areas of physical activities, sports, rehabilitation, growth and development (denadai) apud Gomes, Portela et al (2009).

The definition of physical exercises according to the education federal council is:

*Systematic sequence of movements of differentials body segments, executed in a planned way, according to a determined objective to reach. A kind of physical activity planned, structured, repetitive that searches the development of physical aptitude, physical conditioning, movement skills or organic rehabilitation, defined according to the diagnostic of the needs or specific lacks of its practice in different social contexts (Saba, Fabio, 2008 page 50).*

The physical education professional is specialist in physical activities in their different types – bodybuilding, dances, sports, leisure, rehabilitation, physical exercises, compensatory exercises to labor and everyday activity, between others, with the purpose to favor the health and education development, contributing to the adequate levels of welfare, disease prevention, postural problems, besides contributing to the autonomy consecution, citizenship and social relations, following their rules of responsibility, security and ethics in the collective or individual service.

But, will it be that these professionals, that educate all the people to have a more mature relationship with their bodies, have themselves the same references of conditioning and health that they pass and instruct to their students? How will it be that they are in their physical conditions?

The physical education teacher even being a professional of the human movement area, is firstly a human being, and in a such condition, is subjected to the comfort as other people, there are the ones that have a better consciousness than others, that worry about their own welfare, and to be an exemplar professional. This way, there was a necessity of checking the aerobic conditioning level Vo2 maximum of the physical education teachers, throughout of the obtained results of Cooper's tests in 12 minutes.

Cooper's test is a test of physical condition, idealized by the american doctor and physical instructor Kenneth H Cooper. The test consists in a constant speed running that changes according to the age, sex and performance.

The test is way to measure the aerobic capacity of a person and is related with the maximum oxygen consume, that can be reached during a specific physical work. (Dalquano, Júnior, et al, 2001).

According to Saba (2008) maximum Vo2 is the measure of aptitude cardiorespiratory. It is the maximum quantity of oxygen that an organism gets to extract of blood in one minute during physical effort. It can be measured by clinical tests, in treadmill or by another aerobic exercise, it is expressed in milliliters of oxygen per kilogram of corporal weight per minute.

The values of maximum Vo2máx, vary to person to person, as well as, depends of genetic factors and levels of physical aptitudes. According to the studies, the bigger Vo2 maximum the better prepared the body to develop efforts without using his system of emergency and more time it will take to be exhausted.

**OBJECTIVE**

Verify maximum Vo2máx. values, measured by a Cooper's test of 12 minutes in physical education teachers.

**MATERIAL AND METHODS**

Physical education teachers between 23 to 44 years old (n=10), being eight male and two female, studying the physical and sporting module of conditioning, in post-graduation in physical activity for scholar and non-scholar environment, in the Instituto Batista de Ensino Superior de Alagoas – IBESA, at first sight healthy, took part of the study as volunteers. Some volunteers presents similar daily habits of food, studies and physical activity.

Firstly they filled an application form, with information as personal data, weight, height, cardiac frequency (on rest and on effort), reached distance during the test and speed. To verify maximum oxygen consume (Vo2 max) was utilized Cooper's test of 12 minutes.

In a morning, the teachers were subjected to a test to obtain the estimated maximum aerobic power (Vo2 max : Cooper's test of 12 minutes, values obtained in the test of maximum reached distance in a fixed time. The test was placed in the gymnasium Academia Formafit, Maceió-Al, the teachers were properly outfitted to this practice. For the realization of the tests were utilized treadmills. Volunteers were divided in three groups, the first and second ones with four male teachers, and the third one with two female teachers. There were others volunteers to take notes of test results.

After realizing the test with all teachers, was utilized the formula for Cooper's test in 12 minutes, calculating the reached distance in meters – 504, divided by 45, getting the result of maximum Vo2, in ml (kg.min)<sup>-1</sup>.

Cooper's test protocol consists in reaching the biggest distance in 12 minutes, running or walking, to verify the level of conditioning of the person.

$$\text{Vo}^2\text{Max: } \frac{D-504}{45} \text{ ml}(\text{Kg.min})^{-1}$$

**RESULTS**

In tables I II III are presented personal characteristics, age ( years ), height ( m ), weight ( Kg) and cardiac frequency at rest.

Table I, II and III – Personal characteristics.

Group I				
Age	44	29	27	39
Stature	1,68	1,81	1,73	1,83
weight	76	71	83	116
FC Rest	80	60	76	80

Table I (Male subjects)

Group II				
Age	32	26	27	31
Stature	1,75	1,78	1,75	1,89
Weight	72	81	77	79
FC Rest	60	80	80	80

Table I (Male subjects)

Group	
Ag	3 2
Statur	1, 1,6
Weigh	6 6
FC	7 8

Table III (Female subjects)

In tables IV V and VI are presented the values of maximum oxygen consume (vo2 maximum) in ml (kg .min) , reached distance in meters (dist) , average speed in km/h (AS) na the CF of the effort, utilizing Ravonen (65%) and Karnoven equation for FC maximum.

Table IV, V and VI- Cooper´s test result

Group I				
	Teac. 01	Teac. 02	Teac. 03	Teac. 04
Distance	1,21	1,95	1,5	1,63
AS	6,6	13,7	9,5	9,1
FC Effort	142,4	145,15	152,05	145,65
Vo² Max	15,68	32,13	22,13	25,02

Table IV (Male subjects)

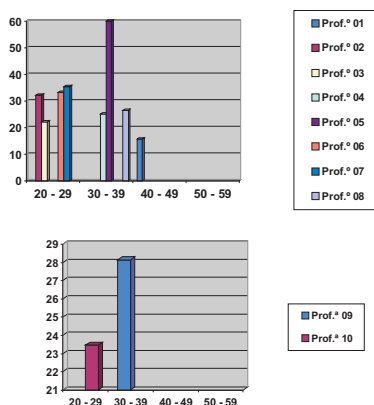
Group II				
	Teac. 05	Teac. 06	Teac. 07	Teac. 08
Distance	3,2	2	2,1	1,7
AS	17,5	11,5	11	13
FC Effort	143,2	154,1	153,45	150,85
Vo² Max	59,91	33,24	35,46	26,57

Table V (Male subjects)

Group III		
	Teac. 09	Teac. 10
Distance	1,77	1,56
AS	8,9	8
FC Effort	146,9	156,05
Vo² Max	28,13	23,46

Table IV (Female subjects)

Graphic I e II – Maximum oxygen consumption, VO<sup>2</sup> max in ml (kg.)<sup>1</sup>. Vo<sup>2</sup> Máx.



Based on graphics presented (Graphic I referring to results of male and graphic II referring to female), is understood that male presented bigger levels of maximum Vo2 listed as - worse, bad, regular - and only one great not existing good in any of the evaluated.

**DISCUSSION**

This study had as objective to verify the level of physical conditioning of physical education teachers. Analyzing data we can verify , in 90% of evaluated the cardiorespiratory aptitude varies from very weak to regular, being very far away of the adequate levels of good physical shape by patterns of a good life quality, these non-satisfactories levels of aerobic conditioning can damage them in their daily activities, including to bring a series of complications to their health state.

The results show that 60% of the sample are, in present time, considered regular ( according to Cooper´s classification ), and to reach more health and quality of life, they need to reorganize their activities in way to get better results for their cardiorespiratory conditioning.

**CONCLUSION**

Given that, in the sample, most teachers were classified in awful, bad and regular (according to Cooper's classification), this reflects that changes are needed to achieve a good aerobic fitness. Nevertheless, in order these changes to happen it is needed a reflection around a more critic self perspective.

As the physical education professional is a specialist in physical activities in their multiple areas, with the purpose to develop education and health, it is a citizen that has consciousness of the importance of health and quality of life through of planned and regular physical exercises. This way is suggested that these professionals plan and execute regularly their activities to improve aerobic conditioning (Vo<sub>2</sub> max), health and quality of life.

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**AEROBIC CONDITIONING LEVEL VO<sub>2</sub> MAXIMUM IN PHYSICAL EDUCATION TEACHERS****ABSTRACT**

The objective of this study is to check Vo<sub>2</sub> maximum values measured by a 12 minutes Cooper's test in physical education teachers, attending Lato Sensu Specialization in the Instituto Batista de Ensino Superior de Alagoas – module of physical and sporting conditioning. The experimental sample was composed by volunteers, all of them physical education teachers, divided in 8 male and 2 female. It was evaluated Vo<sub>2</sub> maximum of participants through the obtained results in Cooper's test of 12 minutes, placed in treadmills, in the fitting area of Gymnasium FormaFIT, Maceió-AL. In the found results the most of the volunteers presented maximum consume of oxygen ( Vo<sub>2</sub> max ) under 30 ml ( kg.min )<sup>1</sup>, meaning that the majority presents aerobic conditioning level classified in awful, bad and regular, in accord to the Cooper's protocol so that they need to improve their cardiorespiratory capacity.

**KEY WORDS** : Physical education teachers, Vo<sub>2</sub> maximum, Cooper's test.

**NIVEAU DE VO CONDITIONNEMENT AÉROBIQUE <sup>2</sup> DANS PROFESSEURS D'ÉDUCATION PHYSIQUE****RÉSUMÉ**

Le but de cet etude était de déterminer les valeurs de Vo<sub>2</sub> maximale, mesurées par um test de Cooper, de 12 minutes, avec des professeurs d'éducation physique, élèves de La spécialisation Latu Sensu au Institut Baptiste de l'Enseignement Superieur, à Alagoas- module conditionnement physique et de Sport. L'échantillon experimental a eu composé par 10 volontaires, tous des professeurs d'education physique, huit hommes et deux femmes. Le Vo<sub>2</sub>maximale des participants a été évalué par les resultads obtenus sur Le test de Cooper de 12 minutes, dans la salle des exercices aérobiques de "Academia FormaFit", à Maceió. Les resultads de test de Cooper donnent une estimation approximative du conditionnement physique des individus. Les resultads de la majorité des gens ont montré la consommation maxilmale de l'oxygène(Vo<sub>2</sub>max) en dessous de 30ml(Kg.min)<sup>1</sup>, sens de la plupart ont un niveau de conditionnement aérobique mauvais, faible et régulier, selon le protocole de Cooper et dans la besoin d'améliorer leur capacité cardiorespiratoire.

**LES MOST CLÉS**: Professeur d'éducation physique, Vo<sub>2</sub>max, test de Cooper.

**NIVEL DE VO ACONDICIONAMIENTO AERÓBICO <sup>2</sup> HASTA EN LOS PROFESORES DE EDUCACIÓN FÍSICA****RESUMEN**

El objetivo del estudio fue aclarar los valores de Vo<sub>2</sub> máximo mensurado por um teste de Cooper de 12 minutos em profesores de educación física, cursando la especialización em Latu Senso em el Instituto Batista del Ensino Superior de Alagoas- módulo de condicionamiento físico y deportivo. La amostra experimental fue compuesta por 10 sujetos voluntários, todos profesores de educación física, ocho del sexo masculino y dos del sexo femenino. Fue avaliado el Vo<sub>2</sub> máximo de los participantes através de los resultados obtidos em el teste de Cooper de doce minutos, realizado em esteras rolantes, de la clase de ejercicios aeróbicos de la Academia FormaFit, Maceió- AL.

Los resultados del teste de Cooper sugeren uma estimativa aproximada del condicionamiento físico de La persona. Em los resultados encontrados em la maioria de los sujetos voluntários presentó el consumo máximo del oxigênio (Vo<sub>2</sub> max) abaixo de 30 ml (Kg.min)<sup>1</sup>, significando que La maioria presenta el nível de condicionamiento aeróbico em nível pesimo, malo y regular, de acuerdo com el protocolo de Cooper, necesitando así, mejorar su capacidad cardiorespiratoria.

**PALAVRAS- LLAVES**: Profesor de educación física, Vo<sub>2</sub> máximo, teste de Cooper.

**NÍVEL DE CONDICIONAMENTO AERÓBIO VO<sub>2</sub> MÁXIMO EM PROFESSORES DE EDUCAÇÃO FÍSICA****RESUMO**

O objetivo deste estudo foi verificar os valores de Vo<sub>2</sub> máximo mensurados por um teste de Cooper de 12 minutos em professores de Educação Física, cursando a especialização em Latu Senso no Instituto Batista de Ensino Superior de Alagoas – módulo de condicionamento físico e desportivo. A amostra experimental foi composta por 10 sujeitos voluntários, todos professores de Educação Física, sendo oito do sexo masculino e dois do sexo feminino. Foi avaliado o Vo<sub>2</sub> máximo dos participantes através dos resultados obtidos no teste de Cooper de 12 minutos, realizado em esteiras rolantes, da sala de exercícios aeróbicos da Academia FormaFit, Maceió - AL. Os resultados do teste de Cooper dão uma estimativa aproximada do condicionamento físico da pessoa. Nos resultados encontrados a maioria dos sujeitos voluntários apresentou o consumo máximo de oxigênio (Vo<sub>2</sub> max) abaixo de 30 ml (kg.min)<sup>1</sup>, significando que a maioria apresenta o nível de condicionamento aeróbico em nível péssimo, ruim e regular, de acordo com o protocolo de Cooper, precisando assim, melhorar sua capacidade cardiorrespiratória.

**PALAVRAS-CHAVES**: Professor de Educação Física, Vo<sub>2</sub> máximo, teste de Cooper.