14 - THE INFLUENCE OF THE STRENGTH TRAINING FOR THE INCREASE OF MAXIMUM Vo2 OF RUNNERS

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INTRODUCTION

The Persons who practice running could present a bigger VO2 by the type of training they perform, because they perform a training of a long duration, so expanding their cardiopulmonary capacity and consequently presents a better leveraging on the oxygen consumption (BUCCI, 2005). Other factor could be the nutrition, but even being a not measured variable, it can't be descarted in the process of comprehension of oxygen's consumption and its interface with the force training wich come with. This situation points that the two activities (run and strength training) enlarge the benefits for the part of the practioner, constituting persons plus prepared and primed for the aerobic practices. For the people who don't practice running, the expectative is that they present a satisfactory level of O2 (oxygen consumption because they practice physical activity, even it isn't aerobic. They do a strength training and this do their heart frequency normal and an expected VO2 (GAZZONI, 2007).

This work has like objective a comparative analysis of the VO2 between practicing and no practicing of running, adepts of the practices of the strength training, comprehend the meaning of the Oxygen's Volume (VO2) during the practice of the exercise and in the performance results (VO2 máx. And min.) of this reality, identify the practice of strength training like a possibility of physiologic benefices to practicing or not of aerobic activities (running), to relate the strength training and the running, to analyze the benefices in the Volume of Oxygen (VO2) and its consequences for the strength training.

DEVELOPMENT

According to ACSM (2000), the maximum oxygen's consumption VO2 is the measurement wich measure the respiratory aptitude, being the cardiac debit the arteriovenous difference of oxygen. So, the VO2 max. express too the functional capacity of the heart.

For Lindstedt and Conley (2002), the VO2 depends of two factors: the usual quantity of the mitochondria and the muscular capillarization of the transport. So, the final result of the VO2 is the increase of the mitochondrial to use O2 and of the quantity of capillars in the muscle.

According to Bosco et al. the physical exercise beyond the physiologic benefices like the increase of the cardiorespiratory function, has benefic effects on the psychological level of the individuals, like the reduction of stress, reduction of tabagism, etc. So, it helps to increase the life's total and functional quality.

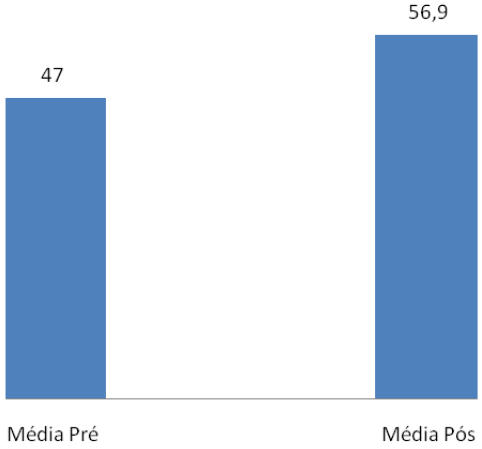
After an exercise of long duration like runs of fund, a lot f physiologic changes occurs in the athlete's body. In trained people, for example, a cardiac frequency of rest tends to be inferior compared with the normal people. After the tests of concentration of lactate are bigger, there are bigger flow of blood inside muscles and for the trained the systolic volume of heart during the rest tends to be bigger than the normal people (KATCH; MCARDLE, 2003).

The capacity to stay in a submaximum prolongated exercise depends of the conservationof homeostasy. With the training of resistance is generated a faster transition of the rest for an methabolic stable action, bringing less dependence of the muscle's stocks and hepatic glicogeny (POWERS;HOWLEY, 2005).

The research will study 20 persons in the total being 10 who frequent running groups and 10 who practice only one resistance training, no participants of the research has a disease or pathology and do exercises more than three times a week.

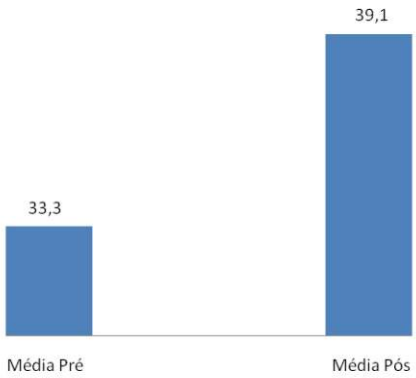
The tests will be realized in May of 2012, two months before the “Meia Maratona do Rio de Janeiro” that happens in the same year, the tests after running will happen in September, a month after the test. The individuals who will realize the tests will run the 21 KM. Before the realization of the proof the individuals will have a periodization with the objective of run the Meia Maratona.

The tests will be realized using an specific machine, this is the fitmate pro and in the conveyor belt (Life Fitness) appropriate for the realization of the test VO2.



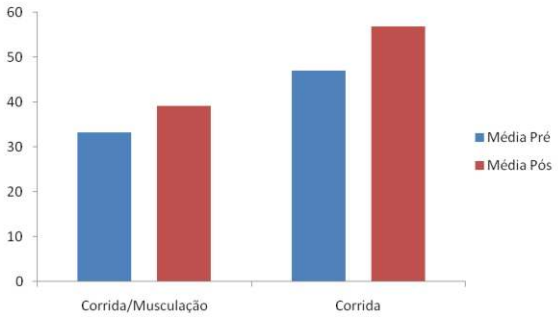
According to the graphic, the average of VO2 of the pre tests of all the participants that practice run and strength training 47 and the group “after” hass the average 56,6 in total, it occurs a increase of 21,1% between the before tests and after tests.

This results shows that the junction of the aerobic training and the strength training has a relevant increase of VO2 in all individuals who wiil participate o this group had some increase in the maximum consumption of oxygen.



The chart shows that individuals who realize only the activity of running, had a before average of 33,3 and a after average of 39,1. This numbers are smaller than the other group studied who realizes aerobic activities with the strength training.

The average of the increase between the tests before and after was 17,4% a number too smaller than the presented for the other group, It shows that only the aerobic training without the strength training has numbers with a little expression compared with the junction of the two trainings.



In this graphic we could see a comparation between the average of the two groups analyzed. We could verificate that in a general form of the group who realized the running and the strength training has a superior average of the group who realized only aerobic activity. It occurs because this group works with two corporal valences that are the force and the aerobic conditionament.

We could verificate in this graphic that the two had a increase in the after average because the aerobic training in the case of running and in the other group beyond the aerobic training occurs the strength training that potencialize the after media of this individual.

Another question to be discussed about the graphic, is the little difference of the tests after and before. It occurs because this group works with a valence that was the aerobic training, the other group that realized before a sistemtized work of strength training has a bigger diference between the before and after tests.

CONCLUSION

So we conclude with this work that the strength training with the aerobic training produces significative benefices in the number of VO2. But we coul considerate too, that individuals who realizes only the aerobic training presents too a increasing in their VO2

Analyzing the literature we could conclude the running with the strength training is a great form to prevent injuries and to potencialize the performance of running.

So, this work was important for the academic society, because there are a little number of works related with the maximum consumption of Oxygen (VO2), and this work could do a plus deep study about the subject.

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ABSTRACT

This work had as objective to make a comparative analysis of VO2 practitioners of street racing, supporters of strength training. It was noted the importance of VO2 in both its maximum values as minimal in practice of physical exercise,suggesting the purchase of habit of trainings of strength for individuals participating in the test. Were selected four and twenty male subjects, being that these were divided between two groups, being those that practiced only race, and a group who practiced race along with the strength training. The results showed that the individuals who have joined the aerobic training with strength training had a significant increase in Vo2

L'INFLUENCE DE LA FORCE DE FORMATION POUR L'AUGMENTATION DU MAXIMUM V02 DE GLISSIÈRES.

RÉSUMÉ

Ce travail avait comme objectif de faire une analyse comparative de VO2 praticiens de courses de rue, les partisans de la force. Il a été noté l'importance de VO2 dans ses deux valeurs maximales comme minime dans la pratique de l'exercice physique,suggérant l'achat d'habitude de formations de force pour les personnes qui ont participé à l'essai. On a sélectionné quatre et vingt sujets de sexe masculin, étant que ces ont été divisés entre deux groupes, ceux qui pratiquent uniquement la race, et un groupe qui a pratiqué la race avec la force de formation. Les résultats ont montré que les personnes qui ont adhéré à la formation aérobie avec force la formation avaient une augmentation significative de Vo2.

LA INFLUENCIA DEL ENTRENAMIENTO DE FUERZA PARA LA MEJORÍA DEL VO2 MÁXIMO DE LOS CORREDORES DE CALLE

RESÚMEN

Este trabajo tuvo como objetivo hacer un análisis comparativo del VO2 de practicantes de carrera de calle, adeptos al entrenamiento de fuerza. Se verificó la importancia del VO2 tanto en sus valores máximos como mínimos en la práctica de ejercicio físico, sugiriendo la adquisición del hábito de los entrenamientos de fuerza para individuos participantes del test. Fueron seleccionados veinticuatro individuos del sexo masculino, siendo que éstos fueron divididos en dos grupos, siendo aquéllos que practicaban apenas carrera, y otro grupo que practicaba carrera junto con el entrenamiento de fuerza. Los resultados mostraron que los individuos que asociaron el entrenamiento aerobio con el entrenamiento de fuerza tuvieron un aumento significativo de VO2.

PALABRAS CLAVES: VO2, Entrenamiento de Fuerza y Carrera

A INFLUÊNCIA DO TREINAMENTO DE FORÇA PARA A MELHORIA DO VO2 MÁXIMO DOS CORREDORES DE RUA

RESUMO

Este trabalho teve como objetivo fazer uma análise comparativa do VO2 de praticantes de corrida de rua, adeptos do treinamento de força. Verificou-se a importância do VO2 tanto nos seus valores máximos como mínimos na prática de exercício físico,sugerindo a aquisição do hábito dos treinamentos de força para indivíduos participantes do teste. Foram selecionados vinte e quatro indivíduos do sexo masculino, sendo que estes foram divididos entre dois grupos, sendo aqueles que praticavam apenas corrida, e um grupo que praticava corrida junto com o treinamento de força. Os resultados mostraram os indivíduos que associaram o treinamento aeróbio com o treinamento de força tiveram um aumento significativo de VO2.

PALAVRAS CHAVES: VO2, Treinamento de Força e Corrida