14 - INCRASING OF OXYGEN CONSUMPTION IN WOMEN BETWEEN 30 TO 39 YEARS OLD IN CONCÓRDIA CITY THROUGH WALK OF 1,600 METERS

EDUARDO KALININE, GALINA KALININA, IOURI KALININE
Universidade do Contestado, Concórdia, SC, Brasil
kalinin@uncnet.br

INTRODUCTION

The consumption of oxygen represents a quantity of oxygen used by organism at a minute intermission. The maximum seize of oxygen supply important information and faithful about the functional capacity of various physiological systems of support. (McARDLE; KATCH; KATCH, 1992).

VO_2máx tends to be much more common in men and typically go down with the age. From the age of 30 to 35, VO_2máx declines 10% from each 10 years, but the planned and regular physic activity can block the decline of VO_2máx (KARPMAN; BELOTSERKOVSKI; GUDKOV, 1988). The aged is associated with the decline of maximum aerobic capacity until 2 times minor when the sedentary individuals are compared with actives (NAHAS, 2001).

The maximum consumption of oxygen is denominated maximum aerobic power. The measure of consumption of oxygen, expressed in ml/kg/min is a traditional criterion approved to the measure of endurance cardio breath (KISS, 1987; ACSM, 2003),

Beyond, VO_2máx offers an exact measure of functional capacity of lungs, of cardiovascular system and muscles mitochondria's combined (SALTIN & STRANGE, 1992).

Many studies consider VO_2máx as a reliable index of sum health of human being (APANACENKO, 1988; KAZNATHEV; VERNADSKI apud MILHNER, 1991).

According to Apanacenko (1988), the energetically power of biological system is a basic criterion of Sum Health (Physic). So, the vitality of any living organism depends on its possibility of oxygen consumption of the environment, its accumulation and its mobilization to work the physiological processes.

According to Vernadski (apud MILHNER, 1991) the organism presents itself as a thermodynamic system, where the stability (the vital capacity) is defined by its energetic potential. The more power, (capacity of energetic potential realized and also permanent in its consumption), higher is the level of Sum Health of the human being.

At Cooper researches, (1970 apud MILHNER, 1991) and Astrand & Rodahle (1970 apud MILHNER, 1991) was discovered that there are important correlation between aerobic capacity of the organism and of its health state. According to Astrand & Rodahle (1970 *apud* MILHNER, 1991), the people that have VO_2máx. = 42 ml/min/kg and more do not suffer of the chronic illness, their indices of arterial pressure in normal limits.

Gibbons et al. (1983 apud MILHNER, 1991) established an important correlation between the biggest of VO_2máx and the risk factors of the coronaries illness: as the level of aerobic capacities is higher, better are the indices of arterial pressure, exchange of cholesterol and corporal mass.

Nowadays the concept that the risk factors of the coronarianas illness are formed from the diminution of the aerobics capacities of the human being, beyond of the limits determined is adopted by all the world. The threshold biggest of VO_2 max. to the men is equal to 42 ml/min/Kg and to women is equal to 35 ml/min/Kg (KARPMAN; BELOTSERKOVSKI; GUDKOV, 1988; MILHNER, 1991) indicates the security level of Sum Health. According to Karpman; Belotserkovski; Gudkov, (1988) the biggest of these thresholds reduce with the age of the human being.

In Lipovetski researches apud MILHNER (1991) was established that VO_2máx also can be used with a criterion to be a prognosis of the death, not only by illness of the cardiovascular system, but also by cancer illness.

In recent researches realized by Kalinina & Kalinine was discovered that there is strong correlation and reliable between Bones Mineral Density and VO_2 max in female individuals from 50 to 60 years old.

So, it is necessary to have an elevate level of maximum consumption of oxygen in any phase of the live. To happen in this way it is necessary to be realized specifics regime of training of the aerobic capacities.

Among the aerobic exercises the walk is a modality more indicated to sedentary people. In fact, according to medical orientation, the walks could be realized with moderated intensity and 30 minutes of duration three times a week. But the results of the research realized by Kalinina; Salvador; Kalinine (2006) show that the walks with this orientation do not improve VO_2max of the aged people. However, the results of the research realized by the same authors showed that the realization on alternate days, the walks during four weeks in a row in a distance of 1,600 meters, with the intensity that provoke FC around 60% of RFC improve VO_2max in aged people, in average of 10,2%. Faced to these considerations, the purpose of this research was to verify if the walk of four laps of the athletics track, with the maximum intensity each one could, improve VO_2max of the people in a medium age.

METODHOLOGY

The sample of the research was composed by 15 voluntaries healthy people of female from 30 to 39 years old in Concordia city - SC. The people of the sample realized three times a week during three weeks in a row to the walks traveling around four laps of the athletics track with the speed "the most rapid each one could". Previous and subsequent weeks of the walks, through Rockport Test, I was determinate VO_2max of those.

To determination of Cardiac Frequency (FC) of the tested and his/her time of walking was used the watch ACCOREX PLUS and POLAR transmission. The statistic treatment used was "T" Test of Student to dependency sample.

RESULTS AND DISCUSSION

TABLE 1 - Results of the realization of the walk program suggested in maximum consumption of oxygen in female people from 30 to 39 years old of Concórdia.

	Age	Weight	%RFC	Time of walk	IMC	VO_2 max1 Pre test	VO_2 max2 Pos test	Δ	Δ
	anos	kg	%	min		ml · kg^{-1} · min^{-1}			%
n	15	15	15	15	15	15	15		
Min	30,1	46,5	65	12,4	17,3	24,6	31,0		
Max	39,0	83,1	79	14,8	33,3	45,2	48,1		
Average	35,7	60,9	71	13,4	22,8	39,4	41,6	2,2*	5,6*
DP	2,7	10,5	4	0,6	4,4	5,2	4,3		

Ps.: The data marked with (*) are reliable, $p < 0,01$
Δ = VO_2 max2 - VO_2 max1
n - Size of the sample

The results acquired in the research showed that the walks realized three times a week during three weeks in a row in a distance of 1,600 meters with speed "the most rapid each one could", improve VO_2max of female healthy people from 30 to 39 years old, in average, of 5,6% ($p < 0,01$).

The results of the research are in agreement of the recommendation of ACSM (2003) and of Neiman (1999) about the realization of walks. According ACSM (2003) the physical condition of healthy people in phase of improvement could be realized 3 - 4 times a week with intensity of 65 - 75 of % RFC and duration of 30 - 35 minutes. According Neiman (1999) the walk of 30 minutes can be replaced by realization of three walks by 10 minutes in different periods of the day.

The results of this research show that to improve the physic condition is already the realization of the walks in distance of 1,600 meters with a speed "the most rapid each one could" three times a week. The time of the walk proposed realized by people of the sample consist, in average, 30 minutes and however it can be realized with more facility in any hour of the day.

CONCLUSION

The walking of four laps of the athletics track with the speed "the most rapid each one could" three times a week, could be used to improve VO_2max of the female healthy people from 30 to 39 years old.

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Key words: maximum consumption of oxygen, physic activity, walking.

Eduardo Kalinine
Rua Marechal Deodoro, 352, Apt. 901
CEP: 89700-000 - Concórdia - SC
kalinin@uncnet.br
(049) 3444-8931

INCRASING OF OXYGEN CONSUMPTION IN WOMEN BETWEEN 30 TO 39 YEARS OLD IN CONCÓRDIA CITY THROUGH WALK OF 1,600 METERS

ABSTRACT

The maximum consumption of oxygen is considered as the better indicators of sum health of the human being. Much more the consumption of the oxygen, better the sum health of the person. Among the aerobic modalities the walk is the modality more indicated to sedentary people. Currently, according to doctor orientations, the walks could be realized with a moderated intensity and duration of 30 minutes three times a week. The results of the research, realized by us, showed that the walks with these orientations do not improve VO_2max of the people with the medium age. Other research that we realized showed that the realizations in alternate days of the walks of 1,600 meters com elevate intensity improve VO_2max of aged people. The purpose of the research was to verify if the walk of four laps of the athletics track with the speed with the maximum intensity each one could, improve VO_2max of medium age people. The sample of the research was composed by 15 voluntaries female healthy people from 30 to 39 years old in Concórdia city - SC. The people of the sample did three times a week during three weeks in a row to walks traveling around four laps of the athletics track with the speed "the most rapid each one could". Previous and subsequent weeks of the walks, through Rockport Test, I was determinate VO_2max of those. Previous and subsequent weeks of the walks, through Rockport Test, It was determinate VO_2max of those. The results acquired showed that the walks realized three times a week during four weeks in a row in a distance of 1,600 meters with a speed faster that each one could VO_2max of the female healthy people from 30 to 39 years old, in average, of 5,6% ($p < 0,01$). Conclusion: the walking of four laps of the athletics track with the speed "the most rapid each one could" three times a week, could be used to improve VO_2max of the female healthy people from 30 to 39 years old.

Key words: maximum consumption of oxygen, physic activity, walking.

AUGMENTATION DE LA CONSOMMATION MAXIMUM DU OXYGÈNE DES FEMMES DE L'ÂGE ENTRE 30 ET 39 ANS EM CONCÓRDIA/SC A TRAVERS DE LA MARCHE DE 1600 MÈTRES.

RÉSUMÉ

La consommation máximum du oxygène est consideré une des meilheurs indicatives de santé somatique de l'être humain. Quant plus grand la consommation maximum du oxygène, meilheur la santé somatique de les personnes. De les exercices aerobiques la marche est la modalité plus indiqué pour les personnes sédentaires. Actuallement, suivant les orientations medicales,

les marches doivent être realisé avec l'intensité modéré pendant 30 (trente) minutes trois fois par semaine. Les résultats de la recherche que nous avons realisé, ont montré que les marches avec cettes orientations ne sont pas meilheur pour les consommation maximum du oxygène de les personnes de moyenne âge. Outre recherche que nous avons realisé a montré que les réalisations en jours alterné de les marches de 1.600 mètres avec l'intensité élevé fait bien à la consommation des personnes de le troisième âge. L'objectif de la recherche a été vérifier si la marche de quatre tours sur la piste de athlètisme, avec l'intensité maximum que pouvoir, fait meilleur la consommation maximum de oxygène de les personnes de moyenne âge. L'échantillons de la recherche a été composé pour quinze sujets volontaires saints de le sexe feminin entre 30 et 39 ans de la ville de Concórdia/SC. Les sujets de l'échantillon ont realisé trois fois par semaine pendant trois semaines suites les marches au parcour de quatre tours sur la piste de athlètisme avec la vitesse "le plus rapide que pouvoir". Pendant les semaines derrières et après les marches, a travers de le "teste de Rockport", ont été determiné la consommation maximum de l'oxygéne de cettes personnes. Les resultats acquéris ont montré que les marches realisés trois fois par semaines pendant quatre semaines suites avec le parcour de 1.600 mètres avec la vitesse "le plus rapide que pouvoir" améliorent la consommation maximum du oxygène de les personnes saints de le sexe feminin de l'âge entre 30 et 39 ans, en moyenne, de 5,6% ($p<0,01$). Conclusion: La marche de quatre tours sur la piste de athlétisme, avec l'intensité maxime que pouvoir, peut être utilisé pour améliorer la consommation maximum du oxygéne de sujets saints de le sexe feminin de l'âge entre 30 et 39 ans.

Mots clef: la consommation máximum du oxygène, activité physique, course.

AUMENTO DEL CONSUMO MÁXIMO DE OXIGÊNIO DE LAS MUJERES EN EDAD DE 30 HASTA 39 AÑOS DE CONCORDIA A TRAVÉS DE CAMINADA DE 1600 METROS

RESUMEN

El consumo máximo de oxigeno es considerado como un de los mejores indicadores de salud somática del ser humano. Cuanto mayor el consumo máximo de oxigeno, mejor la salud somática del sujeto. Entre los ejercicios aeróbicos la caminada es la modalidad más indicada para personas sedentarias. Actualmente, segundo las orientaciones médicas, las caminadas deben ser realizadas con la intensidad moderada y duración de 30 minutos tres veces por la semana. Los resultados de la investigación, realizada por nosotros, mostraron que las caminadas con estas orientaciones no mejoran el VO_2max de las personas de edad mediana. Otra pesquisa que realizamos mostró que las realizaciones en días alternados de las caminadas de 1600 metros con la intensidad elevada mejora el VO_2max de las personas de la tercera edad. El objetivo de la investigación fue verificar si la caminada de cuatro vueltas en la pista de atletismo, con la intensidad máxima que es posible, mejora el VO_2max de las personas del edad mediana. La muestra de la investigación fue compuesta por 15 sujetos voluntarios sanos del sexo femenino con edad de 30 hasta 39 años del la Municipalidad de Concórdia - SC. Los sujetos de la muestra realizaban tres veces por semana durante tres semanas seguidas las caminadas contemplando cuatro vueltas en la pista de atletismo con la velocidad "lo más rápido que es posible". En las semanas anteriores y posteriores de las caminadas, a través del Teste de Rockport, fueron determinados el VO_2max de estos. Los resultados adquiridos muestrearan que las caminadas realizadas tres veces por semana durante cuatro semanas seguidas en la distancia de 1600 metros con la velocidad lo más rápido que es posible mejoraron el VO_2max de los sujetos sanos del sexo femenino de edad de 30 hasta 39 años, en media, de 5,6% ($p < 0,01$). Conclusión: la caminada de cuatro vueltas en la pista de atletismo, con la intensidad máxima que es posible, puede ser utilizada para mejorar el VO_2max de los sujetos sanos del sexo femenino de la edad de 30hasta 39 años.

Palabras llave: Consumo máximo de oxigeno; Actividad Física; Caminada.

AUMENTO DO CONSUMO MÁXIMO DE OXIGÊNIO DAS MULHERES DE IDADE DE 30 A 39 ANOS DE CONCÓRDIA ATRAVÉS DE CAMINHADA DE 1600 METROS

RESUMO

O consumo máximo de oxigênio é considerado como um dos melhores indicadores de saúde somática do ser humano. Quanto maior o consumo máximo de oxigênio, melhor a saúde somática do sujeito. Entre os exercícios aeróbicos a caminhada é a modalidade mais indicada para pessoas sedentárias. Atualmente, segundo as orientações médicas, as caminhadas devem ser realizadas com a intensidade moderada e duração de 30 minutos três vezes por semana. Os resultados da pesquisa, realizada por nós, mostraram que as caminhadas com estas orientações não melhoram o VO_2max das pessoas de idade média. Outra pesquisa que realizamos mostrou que as realizações em dias alternados das caminhadas de 1600 metros com a intensidade elevada melhora o VO_2max das pessoas de terceira idade. O objetivo da pesquisa foi verificar se a caminhada de quatro voltas na pista de atletismo, com a intensidade máxima que puder, melhora o VO_2max das pessoas de idade media. A amostra da pesquisa foi composta por 15 sujeitos voluntários sadios de sexo feminino de idade de 30 a 39 anos do Município de Concórdia - SC. Os sujeitos da amostra realizavam três vezes por semana durante três semanas seguidas às caminhadas percorrendo quatro voltas na pista de atletismo com a velocidade "o mais rápido que puder". Nas semanas anterior e posterior das caminhadas, através de Teste de Rockport, foram determinados o VO_2max destes. Os resultados adquiridos mostraram que as caminhadas realizadas três vezes por semana durante quatro semanas seguidas na distância de 1600 metros com a velocidade o mais rápido que puder melhoram o VO_2max dos sujeitos sadios de sexo feminino de idade de 30 a 39 anos, em média, de 5,6% ($p < 0,01$). Conclusão: A caminhada de quatro voltas na pista de atletismo, com a intensidade máxima que puder, pode ser utilizada para melhorar o VO_2max dos sujeitos sadios de sexo feminino da idade de 30 a 39 anos.

Palavras chave: Consumo máximo de oxigênio; Atividade Física; Caminhada.