57 - REACTIONS OF THE CARDIAC FREQUENCY IN THE TRAINING OF "MUSIC FACTORY FOR BODY" CIRCUIT.

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INTRODUCTION

The search for part of the people, for an efficient and fast training has increased a lot, and therefore, normally these people look for a system that satisfies all the goals in a fast and efficient way, what the systemized programs attract this population for this characteristics. These programs have the purpose to offer to the practitioners high expense of calories, neuromuscular and cardiorrespiratory resistance through the aerobic and anaerobic exercises. However, doubts still exist of that the results are exactly efficient, remembering that each individual has its individuality.

The proposal of the study is to verify through the writing of the cardiac frequency, if the "circuit express" or *Music factory for body*, of which we will speak more ahead, reaches the aerobic threshold (between 60 and 80% of the maximum cardiac Frequency), providing to the practitioner a significant energy expense, since in this circuit in special it does not have the control of certain variables of training, preventing that it is only one way to perhaps finish with the inactivity of people, risking a chronic insatisfação the practitioner and a future incredulity in relation the importance of the exercise physicist.

BIBLIOGRAPHICAL REVISION

Inside of the proposal to analyze the acute answers of the FC during a session of the Music circuit factory will be body becomes of utmost importance to understand what they are circuitados methods of aerobic and anaerobic training.

Circuitados methods

It is a multipurpose method adjusted to carry through in such a way the preparation to cardiopulmonar as to neuromuscular. It is characterized by the advantage of time economy that it provides. It can be carried through of two forms:) Circuit of time: the pupil inside makes the number of RML (located muscular resistance) possible of a daily pay-definitive time in each station = exercise. B) Fixed load circuit: the pupil makes the circuit carrying through an accurate number of RML in each station. The circuit consists successively of a series of exercises (stations) made use sequentially and carried through without interruption (it does not have intervals). So that it is preventing the precocious fatigue, it must be modified the intensities and the worked muscular groups, of a station for the other, having the care to choose exercises of easy execution. For if not characterizing as specific training, it does not allow that the worked physical qualities reach a level that would obtain with the specialized training. The circuit can still be characterized for the intensity: 1) Aerobic Circuit: It tends for three returns; It prioritizes RML exercises; It has greater homogeneity in the intensity of the stations, looking for to keep the FC of the athlete in the white zone. 2) Anaerobic Circuit: It tends for a return; It prioritizes force exercises; Great alternation of intensities. (DANTAS;1995:189)

We still find in literature a method called super circuit, it is constituted of a heating to raise the cardiac frequency of the individual, of neuro-muscular stimulatons and active rest during about 45 minutes. The load is daily pay-definitive and its increase goes to depend on the individual resistance and the exercise is carried through inside of 40 seconds daily pay-established, so that if it has 30 seconds complete of muscular work and 10 seconds used ones in the hour of the exchange of loads. The active rest is of aeróbico stimulaton per 30 seconds, not confusing the rhythm with a hung-up. (COSSENZA; 1995:72) When we speak in RML, we speak without a doubt in force training, also called training with weights, mentions the use to it of bar bells, weights, devices and other equipment with the intention to improve the physical conditioning, aesthetic and/or the esportivo performance. (BAECHLE & GROVES; 2000:11)

CARDIAC FREQUENCY (FC) IN THE CONTROL AND LAPSING

In the cardiac frequency, the determinative greater of the cardiac debit is controlled for intrinsic factors to the heart as well as for neurological and hormonais extrinsic factors. The nerves likeable cárdio-accelerators liberate norepinefrina in its terminations and cause the increase of the FC during the exercise. One strong correlation between the FC and the consumption of oxygen exists. Both the parameters increase linearly with the increase of the intensity of the exercise. (ACSM; 1994:47) All individual that it desires to enter a program of aerobics physical exercises will have to execute it in an intensity enters 60 85% of the FCmáx. Normally, in the programs of physical conditioning for sedentary it must be initiated with values of 60% and be progressed for values of up to 85% of the FCM. (LEITE; 2000:17) The percentage of 60 80% of the cited FCM above is called white zone of training or aerobic and known threshold as aerobic exercise. The aerobic training is characterized as a drawn out exercise and of low intensity, this training has as main greasy acid energy sources the glycogen and, due to intensity of the exercise. The glycogen and acid the greasy ones contribute respectively during the exercise, when it has lack of hepatic carboidrato and cellular the paper of the greasy ones enters in acid scene, supplying up to 80% of the energy the work muscular.(POWERS; 2000)

Characterized as an exercise of short duration and high intensity, the anaerobic training also contributes, in the fortalecimento of muscular staple fibres and the cardiorrespiratory conditioning, for example. The energy source of the anaerobic exercise is determined by its duration, having been ATP-CP, glicólise anaerobic and oxidativa fosforilação, respectively, to produce the necessary ATP for the muscular contraction. (WEINECK; 1999 and POWERS; 2000) Normally with sedentary individuals the anaerobic threshold is determined of 80% 90% of FCM (DENADAI; 2000:45)

MÉTODO MUSIC FACTORY FOR BODY

The systemize program Music factory will be body is characterized as a circuit of time and aeróbico. Its work is made with accompaniment of a specific musical CD. This CD has the duration of 28'35 "with an only band including some musics. It possesss beaten intercalated each 35", indicating the change of exercise, this results in a total of 48 strokes. In the circuit he can have some combinations of aerobics exercises with anaerobics, being able to be of 6 the 10 exercises of force with 3 tickets for the circuit. One of the possibilities, for example, is to make to each two exercises of force a aerpbic exercise, or still using the methods bi-set or tri-set, finishing always the ticket with a time in the bicycle or the mat. For a circuit of 8 exercises they are used: 24 strokes in the anaerobics exercises (14'); 25 strokes (14'35") in the aerobics exercises, that can be made in the mat, the bicycle, jump or step.

METHODOLOGY

The research was carried through with 08 voluntary individuals, being 04 of feminine sex and 04 of the masculine sex. With ages between 20 and 30 years, sedentary, normotensos and not smoking. Two questionnaires had been applied, being the IPAQ

(International Questionnaire of Physical Activity) to know the level of weekly physical activity of the volunteers, and the PAR-Q (Physical Activit Readiness Questionnaire, © Soc. Canadian of Physiology of the Exercise, 1994), questionnaire on promptitude for physical activity. We also apply the term of free and clarified assent.

In 1º day was applied the cited questionnaires above, collected collected the FCrep (cardiac frequency of rest) through one freqüêncímetro of the Polar mark, model Vantage NV and after that one has tested determining the weights to be used for the participants in the force exercises. In 2º day was applied the complete circuit for the collection of the cardiac frequency during the 3 tickets. The circuit initiated in the mat, with 5'15 "of heating, after that the individual executed 8 exercises of force, comumente in this method these exercises is called stations, had been executed of form alternated by segment: rowed with pulley low (Great Dorsal), extensor chair (Quadriceps), supino inclined with bar (Pectoral), flexor chair (Isquiotibiais), flexion of elbows in cross to over (Biceps), pressure of legs 45º (Quadriceps, Isquiotibiais and Gluteos), extension of elbows in cross to over (Triceps), gastrocnemio seated (Soleo).

Each exercise was executed inside of 35", after the eighth exercise of 1ª ticket the individual returned for the mat for more 4'40" initiating 2ª ticket and thus successively in 3ª ticket, repeating this last time of mat and finishing the circuit in the last station. The cardiac frequency was recorded to each minute for freqüencímetro exactly used in the collection of the FCrep. during the 3 tickets and finally in the end of the last station, closing with 29 notations of the monitoração made during the circuit all. From the FCrep, it was calculated FCmáx. (esteem maximum cardiac frequency) and after that the individual white zone of aerobic training, determined enters 60% 80% of the maximum cardiac frequency (FCmax).

For the analysis of these data the Method of the Reserve of the Maximum Cardiac Frequency was used, developed for Karvonen and that it consists of calculating what calls Freqüência Cardíaca Reserva (FCR), that it is the difference enters the cardiac frequency in rest (FCrep) and maximum cardiac frequency (FCmáx.). The white cardiac frequency (FCA), or white zone of aeróbico training, as cited previously, was calculated from the FCmáx, in the steps:

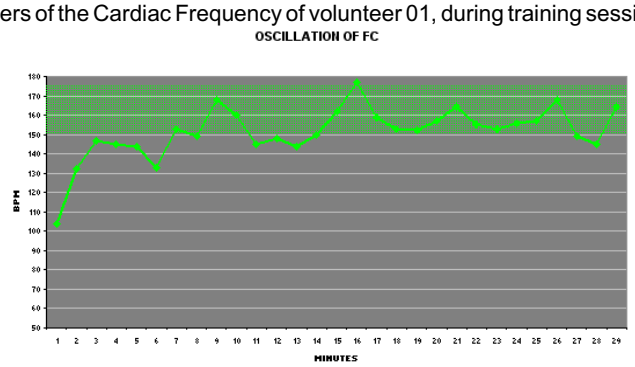
1. FCmax = 220 - idade
2. FCR = FCmax - FCrep
3. FCA1 = FCR x 0,6 + FCrep
4. FCA2 = FCR x 0,8 + FCrep

(FILHO; 2003:151)

ANALYSIS OF DATA AND QUARREL

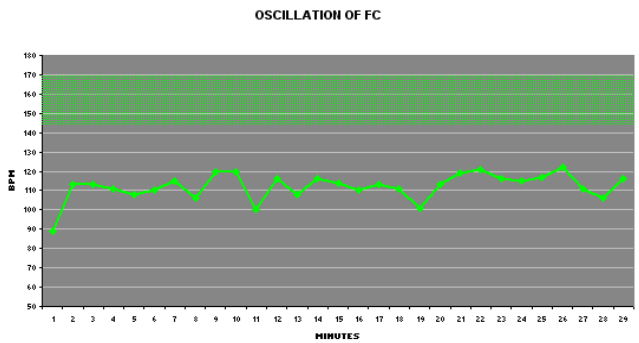
To attainment of results, the FC data had been transferred to the program Microsoft Excel, typing the recorded values of the cardiac frequency in freqüencímetro during the test, to each minute of the circuit, of each indíviduo of the sample. In this exactly program calculated it white zone of the individual cardiac frequency of the sample and with these values each graph for analysis of results was constructed. Dividing men and women in two groups of 04 individuals, we get as more significant the following results: In the feminine group, only one volunteer reached the individual white zone. They had excessively been below of the inferior limit (60%) of the white cardiac frequency. One of the volunteers kept during the training session, that had duration of 28'35 ", an average cardiac frequency of 153 bpm, being inside of its individual white zone, determined between 150 and 175 bpm, excessively had as inferior limit of the white zone (60%) between 144 and 148 bpm and its average FC had been between 114, 122 and 126, thus not reaching the ideal band proposal. In accordance with the procedures taken in the methodology, calculating the individual white zone, volunteer 01 (gráf.1) was the only one that it was remained inside of its individual aerobic zone.

Graph 1 - Acute answers of the Cardiac Frequency of volunteer 01, during training session:



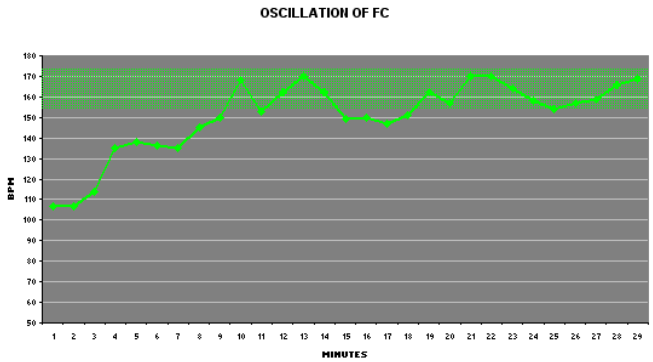
It is perceived that volunteer 01 kept above of 58% of the time of the circuit in the aerobic system, totalizing in 17 minutes, with a general average of the 153 FC of bpm. Volunteer 02 (gráf.2) presents a behavior of the opposing FC to the one of volunteer 01.

Graph 2 - Acute answers of the Cardiac Frequency of volunteer 02, during training session:



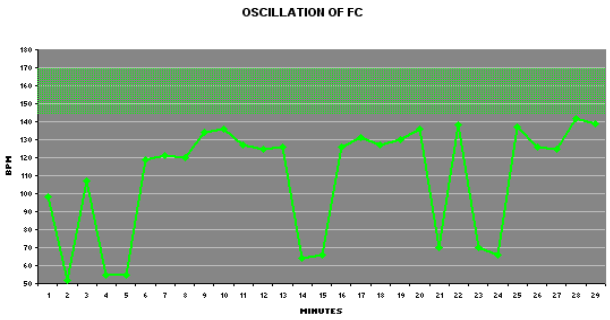
This graphical sample that the behavior of volunteer 02, that it did not reach at no moment the intensity proposal, with 100% of the session of cicuito below of the determined individual white zone, with a general average (114 FC) of bpm. This result if repeated with the two other volunteers who had participated of this work. In the masculine group, only one volunteer remained inside of the individual white zone. They had excessively not reached the white zone. Volunteer 01 (gráf. 3), had its determined white zone between 154 and 175 bpm and during the circuit session got 152 an average FC of bpm:

Graph 3 - Acute answers of the Cardiac Frequency of volunteer 01, during training session:



Although the average FC to have been below of 60% of the FCmáx, being thus explained by the beginning of the session, in the graph we approximately perceive that 57% of the time of the circuit, totalizing in 16 minutes, it it was in the ideal intensity. Volunteer 02 (gráf. 4) of the masculine group had great oscillations of its FC, determining the average FC of the total time in 110 bpm and therefore below of the waited one, that in its in case that he were between 143 and 170 bpm:

Graph 04 - Acute answers of the Cardiac Frequency of volunteer 02, during training session:



Graph 4 presents volunteer 02 and represents the behavior of the too much men of the group, who had not reached the behavior due of the FC for the proposal of the systemize circuit. The 2 other volunteers, who I eat this last one did not have predominance of the aerobic zone, had inferior limit of the white zone (60%) in 144 and 147 bpm, and its averages of the FC during the session of 139 trainings had been 130 and bpm, respectively, being thus below of the waited one.

CONCLUSIONS

Of agreement with the proposal do program *"Music factory for body"* and dos instructors who apply it, the program would have to inside follow an aerobic predominance being da individual white zone recommended na literature, however with the used group of sample nesta research it was not efficient, showing resulted very next between men and women to same profile: sedentary, between 20 and 30 years of age and without restriction of risk for physical activity. The desta ratio sample was efficient for 01 to each 04 women and/or men, being a restricted number very with positive results, generating doubts when we think about a bigger group and that already it practises this program na academy.

It is necessary that it is led in consideration, in this in case that, the control of the variable of training for greater and better use of the program, intervening with the number of repetitions of the exercises of force and time of aerbic activity, besides controlling the cardiac frequency to prioritize the objectives of the program. We wait that through this research, many professionals reflect when using the circuit "*music factory for body*" and other systemize programs, looking for to know the character of the program and being worried about the control of the basic 0 variable of the exercises as form to guarantee an efficient lapsing and insurance to the individual necessities.

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REACTIONS OF THE CARDIAC FREQUENCY IN THE TRAINING OF "MUSIC FACTORY FOR BODY" CIRCUIT.

ABSTRACT

The systemized programs of physical activity come growing and taking place in the market of fitness with great marketing, taking time of professionals and pupils, but little efficient with its results. The Music Factory for the Body circuit used as a study object in the research is characterized as "circuit for time", because the exercises are made with definite time and mixing aerobic and anaerobic exercises, without the control of training variables, selling an efficient image talking about the fat consumption during the training session. The idea of the research came from the doubt in the aerobic effectiveness, thus with the goal of verifying the behavior of the cardiac frequency during the circuit. The circuit was prepared from the following exercises: rowed low, extensor chair, supino inclined, flexor chair, flexion and extension of elbows in cross over, leg press, gastrocnemio seated and mat. The sample was composed of 08 sedentary individuals, from 20 to 30 years of age and without any impediment in the accomplishment of physical activities, being 04 of the feminine sex and 04 of the masculine sex. The it collects of the data was divided into two moments. At the first moment it was applied IPAQ and PAR-Q questionnaires, collected the cardiac frequency of rest and load recognition to be used in the training of force and at the second moment the circuit with the monitoring of the cardiac frequency was made, having total duration of 28'35 ". In the results we got the ratio of 01 to each 04 women and/or men who had remained above of 55% of the training session inside of the individual white zone, being thus the minority of the sample. We concluded that the control of the training variables, even if the program is systemized, bringing more coherent and trustworth results with the literature regarding training lapsing.

Keywords: physical activity, aerobic exercises, cardiac frequency.

RÉPONSES DE LA FRÉQUENCE CARDIAQUE DANS LES FORMATIONS DU CIRCUIT "MUSIC FACTORY POUR LE CORP".

RESUMÉ

Les programmes systématisés d'activité physique grandissent et prennent compte du marché de fitness avec grand marketing, obtiennent le temps de professionnels et élèves, mais ils sont peu des efective au sujet de leurs résultats. Le circuit *facteur musical pour le corp* employé comme d'objet d'étude dans la recherche est caractérisé comme "circuit par temps", parce que les exercices sont faits avec les temps déterminées et il mélange exercices aérobies et anaérobies, sans le contrôle de variables de formation, vendent une image efficace au sujet de la consommation de graisse pendant la session d'entraînement. l'intention de la recherche parti du doute de l'efficacité aérobie, avec l'objectif de vérifier le comportement de la fréquence cardiaque pendant le circuit. Le circuit c'est composé des exercices suivant: ramée basse, chaise de prolongation, supino inclinée, chaise flexionel, flexion et prolongation de coudes dans cross over, pression de jambes, mollet assis et tapis. L'échantillon s'est composé de 08 personnes sédentaires, de 20 à 30 ans d'âge et sans aucun empêchement dans la réalisation d'activité physique, étant 04 du sexe féminin et 04 du sexe masculin. Rassemble de données a été divisé au deux moments. Au premier moment a été appliqué les questionnaires IPAQ et PAR-Q, rassemblée la fréquence cardiaque de repos et reconnaissance de chargements pour deêtre utilisés dans la formation de force et au second moment c'est réalisée le circuit avec surveillance de la fréquence cardiaque, ayant durée totale de 28'35". Dans les résultats nous avons obtenu la proportion de 01 à chaque 04 femmes et/ou d'hommes qui sont restés au-dessus de 55% de la session de formation dans la zone blanche individuelle, étant ainsi la minorité de l'échantillon. Nous concluons qu'est fondamental le contrôle des variables de formation, même que le programme sont systématisé, apportant résultats plus cohérents et dignes de foi avec la littérature concernant prescription de formation.

Mots-clés: activité physique, exercices aérobies, fréquence cardiaque.

RESPUESTAS DE LA FRECUENCIA CARDÍACA EN LAS FORMACIONES DEL CIRCUITO " MUSIC FACTORY PARA EL CUERPO".

RESUMEN

Los programas sistematizados de actividad física vienen creciendo y tomando cuenta del mercado de fitness con gran comercialización, ganando tiempo de profesionales y alumnos, pero poco eficaces con sus resultados. El circuito Music factory para el cuerpo se utiliza como objecto de estudio en la investigación es caracterizado come "circuito por tiempo", por lo tanto los ejercicios se hacen con tiempo determinado y mezclan ejercicios aeróbicos y anaeróbicos, sin control de variables de formación, vendiendo una imagen eficaz por lo que se refiere al consumo de grasa durante la sesión de impulsión. A propuesta de la investigación fue de la duda de la eficacia aeróbica, objectivando así comprobar el comportamiento de la frecuencia cardíaca durante el circuito. El circuito constó de los siguientes ejercicios: remada baja, silla extensora, supino inclinado, silla flexora, flexión y extensión de codos en cross, presión de piernas, panturrilha de lugares sentados y alfombra. La muestra constó de 08 personas sedentarias, de 20 a 30 años de edad y sin ningún impedimento en la realización de actividad física, siendo 04 del sexo femenino y 04 del sexo masculino. Reúna de datos se ha dividido en los dos momentos. En el primer momento se ha aplicado los cuestionarios IPAQ y POR -Q, reunida se realizaron la frecuencia cardíaca de descanso y reconocimiento de cargamentos para ser utilizado en la formación de fuerza y en el segundo momento el circuito con supervisión de la frecuencia cardíaca, durando total de 28' 35". En los resultados obtuvimos la proporción de 01 a cada 04 mujeres y/o de hombres que permanecieron sobre de un 55% de la sesión de formación dentro de la zona blanca individual, siendo así la minoría de la muestra. Concluimos que es fundamental el control de las variables de formación, incluso que el programa esteja sistematizado, aportando más dignos resultados más coherentes y de fe con la literatura que se refiere a condición de formación.

Palabras-claves: actividad física, ejercicios aeróbicos, frecuencia cardíaca.

RESPOSTAS DA FREQÜÊNCIA CARDÍACA NOS TREINAMENTOS DO CIRCUITO "MUSIC FACTORY FOR BODY".

RESUMO

Os programas sistematizados de atividade física vêm crescendo e tomando conta do mercado de fitness com grande marketing, ganhando tempo de profissionais e alunos, mas pouco eficiente com seus resultados. O circuito *Music factory for body* utilizado como de objeto de estudo na pesquisa é caracterizado como "circuito por tempo", pois os exercícios são feitos com tempo determinado e mistura exercícios aeróbicos e anaeróbicos, sem controle de variáveis de treinamento, vendendo uma imagem eficaz no que diz respeito ao consumo de gordura durante a sessão de treino. A proposta da pesquisa partiu da dúvida da eficácia aeróbica, objetivando assim verificar o comportamento da freqüência cardíaca durante o circuito. O circuito foi composto pelos exercícios seguintes: remada baixa, cadeira extensora, supino inclinado, cadeira flexora, flexão e extensão de cotovelos no cross over, pressão de pernas, panturrilha sentado e esteira. A amostra foi composta de 08 indivíduos sedentários, de 20 a 30 anos de idade e sem nenhum impedimento na realização de atividade física, sendo 04 do sexo feminino e 04 do sexo masculino. A coleta de dados foi dividida em dois momentos. No primeiro momento foi aplicados os questionários IPAQ e PAR-Q, coletado a freqüência cardíaca de repouso e reconhecimento de cargas para serem usadas no treinamento de força e no segundo momento foi realizado o circuito com monitoração da freqüência cardíaca, tendo duração total de 28'35". Nos resultados obtivemos a proporção de 01 a cada 04 mulheres e/ou homens que permaneceram acima de 55% da sessão de treinamento dentro da zona alvo individual, sendo assim a minoria da amostra. Concluímos que é fundamental o controle das variáveis de treinamento, mesmo que o programa seja sistematizado, trazendo resultados mais coerentes e fidedignos com a literatura a respeito de prescrição de treinamento.

Palavras chaves: atividade física, exercícios aeróbicos, freqüência cardíaca.