157 - INTERFERENCE OF RUNNING ON BODY COMPOSITION OF INDIVIDUALS SUBMITTED TO RESISTANCE TRAINING.

CARLOS ERNANI DE ARAUJO TINOCO CABRAL
LEONEL MARIO ZUGNO
SUZET DE ARAUJO TINOCO CABRAL
KENIO COSTA DE LIMA
Universidade Federal do Rio Grande do Norte
Natal-RN-Brasil
Carlinhosr5@yahoo.com.br

INTRODUCTION

Consistent exercise can take several forms, with substantial differences in volume, duration and intensity, which are directly linked to its highly varied results. Another difference concerns the type of activity, since some require greater upper limb involvement, while others focus more on the lower extremities or both (Karavirta et al, 2009). A number of activities are closely related to muscular strength, while others influence cardiorespiratory endurance (CE) (Achten and Jeukendrup, 2003).

Over the years resistance training (RT) has gained worldwide popularity, with rapid growth in the number of devotees. Initially, the main motivational factor was achieving esthetical standards by increasing muscle mass. Several recent studies have established the close association between RT and the prevention and treatment of many diseases (Dias et al, 2006) (Karavirta et al, 2009).

With regard to activities linked to endurance, both scientific and popular knowledge have confirmed the health benefits of physical activities such as walking and running, primarily in relation to weight loss through calories burned during these exercises (Dias et al, 2006). However, these activities alone are not sufficient to achieve muscle gain and strength, meaning that a range of benefits obtainable through regular RT are excluded. Consistent practice of resistance and endurance exercises is therefore recommended in order to maintain a healthy lifestyle (Haskell et al, 2007).

Nevertheless, when compared with individuals participating solely in RT, some research indicate that concurrent endurance and strength training decreases the potential for muscular hypertrophy, but not for strength gain (Gergley, 2009) (Karavirta et al, 2009). Conversely, other studies demonstrate that mixed training programs, RT and endurance, reduce strength gain when compared with individuals that only practice RT (Sillanpää et al, 2009) (Hawley, 2009).

Thus, controversy remains as to the effects of each type of training. It is clear, however, that varied exercise programs lower the capacity for muscular or mitochondrial gain in relation to training only strength or CE. Further study is required to determine the ideal intensity, duration and volume needed to achieve maximum benefit (Hawley, 2009).

Based on these data, research that clarifies the effect of different type of PA on body composition (BC) is of vital importance to world health. This provides justification for the present study, which aims to determine WC differences between individuals submitted to RT and those undergoing RT combined with running. Is running essential in improving WC without harming muscular hypertrophy?

METHODS

The present study is a non-random controlled clinical trial. The sample was composed of 60 individuals selected intentionally as a result of their enrolment for resistance training at a gym in the city of Natal, Brazil. Subjects were adults of both sexes aged between 18 and 40 years, without distinction of social class and sedentary for at least 3 months. Participants were divided into two groups (control group S, which underwent only resistance training and experimental group SR who performed RT combined with a 15 minute run) of 30 individuals, corresponding to the minimum sample size allowing for adequate data dispersion (Sounis, 1975).

Exclusion criteria were individuals suffering from chronic infection, clinically detected inflammation, any form of cardiovascular condition or musculoskeletal system limitations that would compromise their ability to exercise or threaten their health, as well as those consistently taking any type of medication that might influence results.

Body composition was the final goal of the study. This was assessed based on independent variables body fat percentage, body fat mass, fat-free body mass, waist to hip ratio (WHR), body mass, hip and waist circumferences and the body mass index (BMI). Dependent variables were age, sex, and those making up body composition before the onset of training and the group participants belonged to. These were investigated as possible determinants of the alteration or not in outcome on completion of training.

At the first meeting, volunteers were informed as to all the procedures involved, and were then submitted to tests and examinations. Following initial testing, participants were separated into two groups (groups S and SR) according to adhesion criteria. Training then commenced in both groups for 10 consecutive weeks. After this period, the entire battery of tests was repeated.

Assessment began with a physical and clinical examination by a doctor and physical education specialist in order to apply exclusion criteria. This was followed by an evaluation of body composition, WHR, BMI and maximum repetition test, which are reliable for sedentary individuals (Levinger et al, 2009). Exercise testing was separated into two groups and performed on different days so as not to overtax the subjects. Resting heart rate (RHR) was measured with a frequency meter (Polar® kempele, Finland) and the desired heart rate zone was then determined for each individual.

Anthropometric measurements were taken by a calibrated examiner (lower intraclass correlation coefficient equal to 0,7), according to the ISAK manual by Marfell-Jones et al (13). The weight and height was evaluated using a mechanical anthropometric scale (Filizola®, São Paulo, Brazil) with an accurate to 100 grams and stadiometer accurate to 0.1 cm. The protocol used for the calculation of body composition was proposed by Jackson and Pollock based on 3 folds, using a compass langer (Cambridge, Maryland). To measure the circumference, we used a tape measure (Sanny®, São Paulo, Brazil).

Workouts occurred 3 times a week for 30 minutes in group S (who were submitted to only RT) and 45 minutes in the SR group (who underwent RT and a 15- minute run), for a period of 10 weeks. In the initial week of RT, the first two sessions used minimum weight in order to learn and correct each exercise. In the third training sessions, a 1RM test was conducted and weights to be used were determined. The SR group also performed a walk at maximum possible speed in the first three sessions in order to progress to running from the fourth session onwards. Regardless of the reasons for absenteeism, subjects who did not achieve a minimum of 80% attendance or with three consecutive absences were immediately excluded from the study.

Each RT session consisted of 8 primary and 5 complementary exercises. The former were performed in three series of 10 repetitions at 70% of the maximum load. There was an interval of 30 seconds between sets with an execution time of 1 second for the concentric phase and 2 seconds for the eccentric. Weights were increased progressively (Dias et al, 2006). Complementary exercises were performed solely for joint protection and as a warm-up for primary activity. Weights were therefore not changed and only 12 repetitions were performed for each.

The following exercises were chosen for the primary training group: high and low angle paddling, elbow flexion (barbell curls), elbow extension, bench press, leg extension, leg curl and the Smith squat. These were selected since they are easy and safe to perform and involve all the main muscle groups. Complementary exercises were a plantar flexion, abdominal crunches, trunk extension, internal and external shoulder rotation. As such, all the primary muscle groups were exerted. In addition to RT, the SR group performed a 15-minute run at an HR of 75% of the maximum capacity estimated by reserve HR, proposed by Karvonen (1957) [HR training= Rest HR+ intensity (0,75) x (Maximum HR – Rest HR)]. A deviance of up to 5 beats from the desired zone was permitted (Karavirta et al, 2009).

All participants were advised by a nutritionist to maintain the same dietary habits prior to and during training so that possible diet changes would not influence results. As such, a dietary questionnaire was applied (in the first, fifth and final week of the study) to determine whether habits were continued. Individuals who did not follow these guidelines were subject to exclusion from the study. In addition, the nutrition survey was used to evaluate the sample in relation to any difference in diet that could bring advantages or disadvantages to an individual in relation to others if there, it would be eliminated.

Results obtained on completion of the investigation were statistically analyzed. Both groups (control and experimental) were compared with regard to body composition and the influence of independent variables on outcomes. In order to evaluate homogeneity between groups for parameters involving body composition, a Student's t-test for independent samples was applied at baseline for variables with normal distribution. The Mann-Whitney test was used for variables without normal distribution. Following training, a Student's t-test was conducted within each group for samples matched to parameters with normal distribution, while the Wilcoxin was applied for those without. The objective was to determine differences in WC parameters before and after training. A significance level of 5% was employed for all tests performed. With regard to the variable sex, the chi-square test established homogeneity between the groups.

The study was approved by the UFRN Research Ethics Committee in accordance with Resolution 196/96 of the National Health Council under protocol 042/2010, and registered as CAAE 0227.0.051.000-09.

RESULTS

The training program was elaborated into 30 sessions, with low tolerance for absenteeism. A maximum of 6 overall or 3 consecutive absences was allowed to avoid interference with results. Consequently, 18 subjects were excluded from the investigation, representing 30% of the total sample. Of these, 10 (16.7%) were from the control group and 8 (13.3%) from the experimental group.

Table 1. Baseline anthropometric data for both groups.

	Group				
	SR		S		
	Mean ± SD	CI (95%)	Mean ± SD	CI (95%)	*p*
Height	1.685±0.098	1.64-1.73	1.719±0.083	1.682-1.756	0.227
Fat percentage	22.97±6.23	20.05-25.89	25.36±4.21	23.49-27.23	0.149
Body mass	68.25±18.40	59.63-76.86	70.62±15.74	63.64-77.59	0.655
	Median	$Q_{25} – Q_{75}$	Median	$Q_{25} – Q_{75}$	*p*
Age	25.00	21.00-33.00	24.50	22.00-27.00	0.686
Fat mass	13.18	11.23-18.41	16.79	13.97-21.74	0.043
Fat-free mass	47.43	41.50-61.72	53.37	41.44-62.50	0.92
BMI	23.04	20.59-25.18	22.80	20.70-27	0.762
Waist	73.25	65.00-86.25	68.5	63.75-76.75	0.240
Hip	94.25	92.05-103.75	95	93-100	0.625
WHR	0.76	0.69-0.88	0.69	0.68-0.79	0.156

Data in table 1 show the individual characterization for each group in relation to anthropometry to determine whether differences exist between groups prior to the onset of training. With the exception of fat mass (p=0,043),, none of the variables exhibited significant difference between groups (p<0,05). As a result, both were considered homogeneous.

In relation to sex, there was no substantial association between training groups (p=1.00). Separate analysis of men and women at baseline found no difference among male group members for any dependent variables. On the other hand, the variables fat mass and fat percentage were on the significance threshold (p=0.065 and p=0.085, respectively) among females in both groups, with better results in group SR.

Following workouts, variations were recorded between groups only for fat percentage (P=0,057) and fat mass (P=0,025). The former was on the significance threshold; however, the latter already demonstrated a significant difference before beginning the experiment.

Separate analysis of men and women showed no significant differences among males for any of the variables studied when comparing the S and SR groups. Women, however, demonstrated a post-workout fall in fat mass (p=0.056), which was higher in the SR group. Fat percentage also exhibited a substantial reduction after training among females in both groups (p=0.036), showing more favorable values in the SR group.

Table 2 depicts data for each group before and after workouts in order to determine body composition differences resulting from each type of training.

Table 2. Anthropometric data for each group before and after training

Group SR					
	Before training		After training		
	Mean ± SD	CI (95%)	Mean ± SD	CI (95%)	p
Fat Percentage	22.97±6.24	20.05-25.89	19.49±4.84	17.23-21.76	<0.001
Body mass	68.25±18.4	59.63-76.86	68.76±18.78	59.97-77.56	0.329
	Median	$Q_{25} – Q_{75}$	Median	$Q_{25} – Q_{75}$	p
Fat mass	13.18	11.23-18.41	11.39	10.05-14.45	<0.001
Fat-free mass	47.43	41.5-61.72	50.15	43.68-63.88	<0.001
BMI	23.04	20.59-25.18	22.86	20.67-25.48	0.212
Waist	73.25	65-86.25	70.25	63.58-84.2	0.004
Hip	94.25	92.05-103.75	94	91.48-96.75	0.217
WHR	0.762	0.688-0.876	0.766	0.674-0.883	0.313
Group S					
	Before training		After training		
	Mean ± SD	CI (95%)	Mean± SD	CI (95%)	P
Fat percentage	25.36±4.21	23.49-27.23	22.07±3.43	20.55-23.59	<0.001
Body mass	70.61±15.74	63.64-77.59	70.9±15.73	63.92-77.87	0.226
	Median	$Q_{25} – Q_{75}$	Median	$Q_{25} – Q_{75}$	p
Fat mass	16.79	13.97-21.74	14.82	12.29-18.32	<0.001
Fat-free mass	53.37	41.44-62.5	55.37	43.96-67.23	<0.001
BMI	22.8	20.70-27	22.76	20.45-27.85	0.212
Waist	68.5	63.75-76.75	68	61.7-75.75	0.021
Hip	95	93-100	93	91.75-99.25	0.032
WHR	0.693	0.682-0.792	0.693	0.667-0.809	0.777

Following training, the SR group presented a significant decrease in the variables of fat mass, fat percentage and waist circumference, with a substantial rise in fat-free mass. Group S showed significant fat percentage and fat mass reductions and a marked increase in fat-free mass. Body weight, WHR and BMI did not display noteworthy alterations for either group.

DISCUSSION

Definite results are achieved through the practice of CE activities such as running, cycling and walking. They improve aerobic capacity and other cardiovascular parameters, promote weight loss and increased the quality of life among practitioners. However, these exercises are not functional for general strength and muscular hypertrophy in the body and are not recommended as treatment for musculoskeletal diseases. They are frequently even dangerous to carriers of these illnesses owing to the excessive repetition required for their practice (Haskell et al, 2007).

Studies demonstrating the effects of RT confirm that its practice promotes improvements in both the musculoskeletal and cardiovascular systems, as well as quality of life (Dias et al, 2006) (Hawley et al, 2009). There is little research addressing the effects of RT on cardiovascular parameters and it remains controversial (Hawley et al, 2009) (Karavirta et al, 2009). On the other hand, investigations where resistance circuit training is used in circuits for the same objective are well-regarded (Dias et al, 2006).

There are a large number of studies into the effects of concurrent training (RT associated to running). Most agree that CE training interferes in the development of muscular hypertrophy without a negative impact on strength when compared with individuals undertaking only RT. However, participating solely in RT does not adversely affect the progression of aerobic capacity (Hawley et al, 2009) (Karavirta et al, 2009) (Santtila et al, 2009).

A study of young adult males involving three types of training, RT, CE (running on a treadmill) and concurrent resistance and CE activity, showed that RT did not lower fat mass, but did increase fat-free mass. CE exercises only resulted in significant reductions of fat mass, while mixed training alone improved both variables (Ghahramanloo et al, 2009). In separate research, subjects undertaking only RT demonstrated better strength performances than those participating in varied workouts (Gergley et al, 2009).

No significant difference was found among sedentary adult males for the development of muscular strength when submitted to RT and simultaneous mixed programs of resistance and CE, while the use of a varied workout is recommended in order to obtain other health benefits. Consequently, performing RT or CE in isolation may be an inappropriate when the goal is combined improvement of the cardiovascular and neuromuscular systems (Shaw et al, 2009).

In the present study, almost no significant difference was found between groups. Reduced fat mass (mean of 16.8% in the SR and 13% for S) and fat percentage (an average of 15.5% in the SR and 13% for S) were recorded, with a slight advantage observed in the SR. This was attributed to differences found among the women since, for cultural reasons, they have greater sedentary levels than men. This makes them more susceptible to an improvement in parameters cited above after training. An increase of the same significance was also recorded for fat-free mass in both groups (5.3% in the SR and 5.7% for S).

Corroborating our study, the results of an investigation on elderly women showed no difference in improved body composition between the group submitted to resistance workouts and those training both strength and CE (Sillanpää et al, 2009).

In relation to perimeter, both groups reduced waist circumferences, an area of substantial fat accumulation. However, only the S group achieved significantly lower hip measurements, another focal point for accumulated adipose tissue, although it also contains several muscles. The lack of hip reduction in the S group may have occurred because of better muscle hypertrophy in this region as a result of additional muscle exhaustion provoked by the run (Fleck and Kraemer, 2006). Body weight, BMI and WHR showed no significant differences in either group throughout training since the increase in muscle mass was almost equal to reduction in body fat mass for both groups.

CONCLUSION

The size and non-random nature of the sample were limiting factors in this study. Nevertheless, our findings indicate that a 15- minute run at an intensity of 75% of HRR in addition to RT, would not provide additional benefits to BC than those supplied by only practicing RT, nor would it interfere with muscular hypertrophy. Further study should address this relationship in order to clarify the effects of each type of training, as well as determine their impact on cardiovascular parameters.

REFERENCES:

Achten J, Jeukendrup AE. Heart rate monitoring: applications and limitations. Sports Med 33:517-38, 2003.

Dias, R, Prestes, J, Manzatto, R, and Ferreira, CKO. Efeitos de diferentes programas de exercício nos quadros clínico e funcional de mulheres com excesso de peso. Revista Brasileira de Cineantropometria & Desempenho Humano 8: 58-65, 2006.

Fleck SJ and Kraemer WJ. Fundamentos doTreinamento de Força Muscular. 3th edition. Artmed, Porto Alegre, 2006.

Gergley JC. Comparison of two lower-body modes of endurance training on lower-body strength development while concurrently training. Journal of Strength and Conditioning Research 23, 979-987, 2009.

Ghahramanloo E, Midgley AW, Bentley DJ. The effect of concurrent training on blood lipid profile and anthropometrical characteristics of previously untrained men. Journal of Physical Activity and Health 6, 760-766, 2009.

Haskell WL, Lee I, Pate, RR et al. Physical Activity and Public Health: Updated Recommendation for Adults from the American College of Sports Medicine and the American Heart Association. Med Sci Sports Exerc 39:1423-34, 2007. in number 8.

Hawley JA. Molecular responses to strength and endurance training: are they incompatible? Appl Physiol Nutr Metab. 34:355-61, 2009. In number 9

Karavirta L, Häkkinen A, Sillanpää E, García E. –Effects of combined endurance and strength training on muscle strength, power and hypertrophy in 4067-year-old men. Escandinavian Journal of Medicine & Science in Sports 20, 60-66, 2009.

Karvonen M, Kental E, Mustala O. The effects of on heart rate a longitudinal study. Ann. Med. Exp Biol Fenn 35:307-315, 1957.

Levinger I, Goodman C, Hare D et al. The reliability of the 1RM strength test for untrained middle-aged individuals. Journal of Science and Medicine in Sport 12, 310-316, 2009.

Marfell-Jones M, Olds T, Stewart AD and Carter JEL. International Standards for Anthropometric Assessment.International Society for the Advancement of Kinanthropometry, Potchesfstroom. South Africa. 2006. pp.145.

Santtila M, Kvrolainen H, Hakkinem K. Changes in Maximal and Explosive Strength, Electromyography, and Muscle Thickness of Lower and Upper Extremities Induced by Combined Strength and Endurance Training in Soldiers. Journal of Strength and Conditioning Research 23, 1300–1308, 2009.

Shaw BS, Shaw I, Brown GA. Comparison of resistance and concurrent resistance and endurance training regimes in the development of strength. Journal of Strength Conditioning Research 23, 2507-2514, 2009.

Sillanpää E, Laaksonen DE, Häkkinen A et al. Body composition, fitness, and metabolic health during strength and endurance training and their combination in middle-aged and older women. European Journal of Applied Physiology 106, 285-96, 2009.

Sounis E. Bioestatística: princípios fundamentais, metodologia estatística, aplicação às ciências biológicas. 2th edition. McGraw-Hill, São Paulo, 1975.

CARLOS ERNANI DE ARAUJO TINOCO CABRAL
84-88016611. Av. Amintas Barros 3675,
ed. Jardim Portugal ap. 1601, Lagoa Nova,
Natal, RN Brasil.
Carlinhosr5@yahoo.com.br

INTERFERENCE OF RUNNING ON BODY COMPOSITION OF INDIVIDUALS SUBMITTED TO RESISTANCE TRAINING.

ABSTRACT

The present study aimed to determine the effect of a 15- minute run on body composition (BC) and muscular hypertrophy in individuals submitted to resistance training (RT). The sample was composed of 60 sedentary adults of both sexes, aged between 18 and 40 years. Subjects were divided into two groups of 30 individuals. Controls (S) performed only RT and the experimental group (SR) undertook RT associated with a 15-minute run. Each intervention was applied for a period of 10 weeks. Before and after this period, waist circumference (WC), waist to hip ratio (WHR), body mass index (BMI), height and body mass were measured. Following training, neither group showed significant differences in BMI, body mass and WHR. However, both groups substantially increased their fat-free mass on median, from 47.43 Kg to 50.15 Kg ($p<0,001$) in the SR and from 53.37 Kg to 55.37 ($p<0,001$) Kg for the S, exhibiting lower fat mass, median reduction from 13.18 Kg to 11.39 Kg ($p<0,001$) in the SR and 16.79 Kg to 14.82 Kg in the S ($p<0,001$), body fat percentage an average decrease from 22.97±6.24 to 19.49±4.84 ($p<0,001$) within the SR and 25.36±4.21 to 22.07±3.43 ($p<0,001$) for the S). Findings in this research suggest that a 15-minute run at an intensity of 75% of heart rate reserve (HRR), in addition to RT would not provide additional benefits to WC, other than those supplied by solely participating in RT, or interfere with muscular hypertrophy.

KEYWORDS: Body Fat, Skinfold Thickness, Muscular hypertrophy.

INTERFÉRENCES DE LA COURSE SUR LA COMPOSITION CORPORELLE DANS LE PERSONNES SOUMISES À L'ENTRAÎNEMENT DE FORCE

RÉSUMÉ

Le but de cette étude était d'étudier l'effet d'une course de 15 minutes dans la composition corporelle (CC) et dans l'hypertrophie musculaire des personnes soumises à l'entraînement de force (EF). L'échantillon a était composé de 60 adultes des deux sexes, âgés entre 18 et 40, touse sédentaires. Divisé en deux groupes de 30 sujets contrôle (S), qui a été réalisée uniquement EF et expérimental (SR), nous avons effectué le TF associés à La course de 15 minutes, appliquant chaque intervention pour une période de 10 semaines. Nous avons évalué le CC, rapport taille-hanche (RTH), l'indice de massecorporelle (IMC), la hauteur et la masse du corps avant et après la période de 10 semaines de chaque préparation (p>0,05). Mais les groupes significativement augmenté la masse maigre de SR àune médiane de 47.43 kg à 50,15 kg (p <0,001) et S de 55.37 kg à 53.37 kg (p <0,001), et de la même façon il a eu une diminution de la masse grasse, dans SR la médiane des 13.18 kg à 11.39 kg (p <0,001) et S de 16.79 kg à 14,82 kg (p <0,001),pourcentage de graisse corporelle SR dans une moyenne de 22,97 ±6,24 à 19,49 ± 4,84 (p <0,001) et S de 25,36 ± 4,21 à 22,07 ± 3,43. Dans les deux groupes après la période de formation, il n'y avait aucune différence significative de l'IMC, le poids et le RTH (p <0,001). Les résultats de cette recherche nous amènent à croire que le parcours de 15 minutes avec une intensité de 75% de la fréquence cardiaquemaximale (FC) de réserve (proposé par Karvonen), ajoutée de TF ne conduirait pas à des avantages supplémentaires promue par la pratique que seulement TF dans la CC, ni empêcher pas l'hypertrophie musculaire.

MOTS-CLÉS: la graisse corporelle. Du pli cutané. L'hypertrophie musculaire.

INTERFERENCIA DE LA CARRERA SOBRE LA COMPOSICIÓN CORPOREA EM INDIVIDUOS SOMETIDOS A UN ENTRENAMIENTO DE FUERZA

RESUMEN

El propósito de este estudio fue investigar el efecto de una carrera de 15 minutos en la Composición Corporal (CC) y la hipertrofia muscular en individuos sometidos a Entrenamiento de Fuerza (EF). La muestra consistió en 60 adultos de ambos sexos, con edades comprendidas entre 18 y 40 años, sedentarios y divididos en dos grupos de 30 personas. El grupo de control (S), que se llevó a cabo sólo EF y el experimental (SR), en el que se realizó EF asociado a la carrera de 15 minutos. La aplicación de cada intervención fue realizada en un período de 10 semanas. Se evaluó la CC, el Índice Cintura-Cadera (ICC), el Índice de Masa Corporea (IMC), la altura y la masa corporea antes y después del período de las 10 semanas de cada entrenamiento. En ambos los grupos después del período del entrenamiento, no hubo diferencias significativas en el IMC, en el peso corporal o en el ICC (p> 0,05). Sin embargo, los grupos presentaron acréscimo significativo de masa libre de grasa en el SR en promedio de 47,43 kg a 50,15 kg (p <0,001) y en el S de 55,37 kg a 53,37 kg (p <0,001); disminución de la masa grasa, en el SR en mediana de 13,18 kg a 11,39 kg (p <0,001), en el S de 16,79 kg a 14,82 kg (p <0,001); y porcentaje de grasa corporea en el SR en promedio de 22,97 ± 6,24 a 19,49 ± 4,84 (p <0,001) y en el S de 25,36 ± 4,21 a 22,07 ± 3,43 (p <0,001). Los resultados de esta investigación nos llevan a creer que una carrera de 15 minutos con una intensidad del 75% de la Frecuencia Cardíaca Máxima (FCM) de reserva (propuesta por Karvonen), además de EF, no llevaría a beneficios adicionales, en comparación a la práctica sólo del EF Composición Corporea, ni tampoco molestaría la hipertrofia muscular.

PALABRAS-CLAVES: grasa corporea, dobladura cutánea, hipertrofia muscular

INTERFERÊNCIA DA CORRIDA SOBRE A COMPOSIÇÃO CORPORAL EM INDIVÍDUOS SUBMETIDOS A UM TREINAMENTO DE FORÇA.

RESUMO

A proposta desse estudo foi verificar o efeito de uma corrida de 15 minutos na composição corporal (CC) e na hipertrofia muscular de indivíduos submetidos há um treinamento de força (TF). A amostra foi composta de 60 indivíduos adultos de ambos os sexos, com faixa etária entre 18 e 40 anos, sedentários. Dividiu-se em dois grupos de 30 indivíduos (controle (S), em que foi realizado apenas o TF e o experimental (SR), que foi realizado o TF associado à corrida de 15 minutos) aplicando-se cada intervenção por um período de 10 semanas. Foi avaliada a CC, Relação Cintura-quadril (RCQ), Índice de Massa Corporal (IMC), estatura e massa corporal, antes e logo após o período de 10 semanas de cada treinamento. Em ambos os grupos, após o período de treinamento, não ocorreram diferenças significativas no IMC, massa corporal e RCQ (p>0,05). Porém os grupos aumentaram de forma significativa a massa livre de gordura no SR em mediana de 47,43 Kg para 50,15 Kg (p<0,001) e no S de 53,37 Kg para 55,37 Kg (p<0,001), assim como diminuíram a massa de gordura, no SR em mediana de 13,18 Kg para 11,39 Kg (p<0,001) e no S de 16,79 Kg para 14,82 Kg (p<0,001), percentual de gordura corporal no SR em média de 22,97±6,24 para 19,49±4,84 (p<0,001) e S de 25,36±4,21 para 22,07±3,43 (p<0,001). Os achados dessa pesquisa nos levam a crer que uma corrida de 15 minutos com uma intensidade de 75% da Freqüência Cardíaca máxima (FCmáx) da reserva (proposta por Karvonen) adicionada do TF não levaria a benefícios extras aos promovidos pela prática apenas do TF na CC, como também não atrapalharia a hipertrofia muscular.