# 157 - INFLUENCE OF TRAINING WITH WEIGHT IN REDUCTION OF CORPORAL FAT AT ACADEMY OF UNIEVANGÉLICA.

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**Introduction**

The increase of the corporal fat brings diverse problems of health to the individual. It´s known that the physical activity allied to a balanced diet is universal lapsing for the weight control (BAKER and BROWNELL, 2003).

The obesity is probably the oldest metabolic riot, having reports of the occurrence of this dysfunction in sculptures Greeks and Egyptian mummies (BLUMENKRANTZ, 1997). The obesity is considered a chronic illness and comes presenting a fast increase in its prevalence in the last decades becoming an epidemic. Recently, the obesity could be considered the most important nutritional dysfunction in the developed countries, in view of the increase of its incidence: it's believed that it reaches 10 % of the population of countries (DYER, 1994) and more than a half of the North American population is above of the desirable weight (Baron, 1995). The obesity is present as much in countries developed as in developing countries (POPKIN & DOAK, 1998). The increase of its incidence is distributed in almost all the races and sexes, and reaches the population of 25 to 44 years (BLUMENKRANTZ, 1997).

The biggest mechanization of the work, the introduction of the robotics and computerization, have reduced the necessity of the modern man of to expose himself to the physical effort in the accomplishment of the daily tasks. The practical of watch television some hours per day, the diffusion of the electronic games, associates to the innumerable devices that facilitate the execution of the tasks daily, has limited to the extremity the physical activity (GUEDES & GUEDES, 1998).

With a trend of occurred nutritional transition in this century, different countries of the world converge to a diet richer in fats (particularly of animal origin), sugars and refined foods, and reduced in complex carbohydrate and fiber, also known as "occidental diet " (MONTEIRO et al., 1995).

The force training is one of the basic properties of the *motricity*, by the side of the resistance, determining the physical income (SPRING et al. 1995).

Some research had been lead involving the energy expense in the accomplishment of a session of exercises against-resistance, of a consecutive form or in circuit, and the joined results had been most diverse, varying of 64 to 534kcal. The great number of variable becomes impossible the comparison enter the observed values in the diverse research.

The Working out is a physical activity that has grown in the last years, being that the main objective of the majority of the people is the reduction of the corporal fat. This made us to put a question: the force training influences in the reduction of corporal fat, when the same is not ally to a aerobics session.

**General Objective**

To verify the influence of the training of force in the reduction of corporal fat.

Specific Objective

1. To raise the index of corporal mass of academics of the UniEvangélica who working out as physical activity, with the objective of loss of weight.
2. To verify the influence of 12 weeks of training of force in the reduction of the corporal fat.
3. To identify the amount of people who frequent the academy with the objective of loss of weight.

**Methodology**

Characterization of the Sample

The study was realized at the academy of UniEVANGÉLICA, with people with age understood between 15 and 50 years old that practised training with weight with the objective of lose weight.

The sample was initially composed for 195 people, in the age group of 15 the 50 years old matriculated in the academy of the UniEVANGÉLICA, that after valuation in the LAFE, they had authorized the use of their data to research, when minor, the authorization was signed by the parents. To the end of the study only 32 participants (14 men and 18 women) had fulfilled to all the methodologies requirements.

**INCLUSION CRITERIA.**

GENERAL CRITERION: Age understood between 15 and 50 years, to sign the authorization for use of the data, to make the physical valuation before the beginning of the practical of the force training.

SPECIFIC CRITERIA: To frequent 90% of the lessons foreseen in the 12 weeks of the study and don't do another regular physical activity in the period.

The training was realized in three weekly sessions with approach duration of 60 minutes each session, per 12 weeks. The training consisted of a heating in the mat or bicycle per 10 minutes, after this heating, was mounted a program with weight, using exercises for superior, inferior members and trunk.

**COLLECTION OF DATA**

The evaluations had occurred at the beginning and to the end when the study to reach the twelfth week of training.

The evaluations anthropometrics had been made in the LAFE - UniEVANGÉLICA, and was composed for the measures of the weight, height and cutaneous folds triciptal, sub scapular, average, thoracic, Ilium above, abdominal and medial thigh, the levy of the anthropometrics mediated followed international norms presented by LOHMAN (1989).

The adiposity (% of Corporal Fat): It was esteem from the equations proposals for Jackson & Pollock apud Heyward and Stolarczyk (2000).

Masculine - ((4.95/(1.112-0.00043499*(Thoracic Fold + Average Axillary's Fold + Triciptal Fold + Sub scapular Fold + Abdominal Fold + Ilium above Fold + Medial Fold of Thigh)+0.00000055*(Thoracic Fold + Average Axillary's Fold + Triciptal Fold + Sub scapular Fold + Abdominal Fold + Ilium above Fold + Medial Fold of Thigh)^2-0.0002882 * Age))-4.50)*100

Feminine - ((4.95/(1.0970-0.00046971*(Thoracic Fold + Abdominal Fold + Medial Fold of Thigh + Triciptal Fold + Sub scapular Fold + Ilium above Fold + Average Axillary's Fold)+0.00000056*(Thoracic Fold + Abdominal Fold + Medial Fold of Thigh + Triciptal Fold + Sub scapular Fold + Ilium above Fold + Average Axillary's Fold)^2-0.00012828 * Age))-4.5)*100

The analyses had been realized using statistical package SPSS 10.0, the used level of significance was $p<0.05$.

It was esteemed the average pattern deflection by variable;

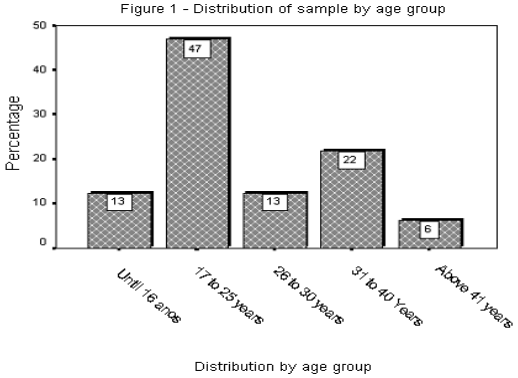
It was applied a test t between the initial and final weight, between the IMC the initial and end and between the percentage of the initial and final fat.

**RESULT and DISCUSSION**

We had a great loss in elapsing of the study, in function of the evasion and also for the not keep to the methodologies patterns, initially we had 195 participants and to the end remained only 32 participants.

The distribution of the studied sample meets in figure 1.

Figure 1 - Distribution of sample by age group

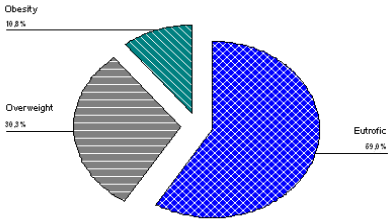



Distribution by age group

We observe a prevalence in the age group of 17 the 26 years as it was waited, in function of the universitarian public who frequents the academy.

The initial adiposity of the sample for IMC follows the national pattern, 30% of overweight and 11% of obesity, 59% of eutrofics. These indices represent a reality of Brazil, according to data Epidemiologists of the Obesity in Brazil (ABESO, 2002). Observes figure 2

Figure 2 - Initial Adiposity of Sample - IMC




The corporal weight of the practitioners modified in the period, according the table 1

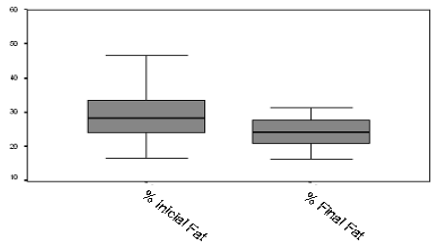
Table 1 - Weight Initial and final of the sample for sex

| | SEX | N | Average | Pattern Deflection | P |
|---|---|---|---|---|---|
| Initial Weight | Masculine | 14 | 85,4214 | 14,7538 | |
| | Feminine | 18 | 71,2111 | 12,1574 | |
| Final Weight | Masculine | 14 | 84,8357 | 13,8985 | 0,02 |
| | Feminine | 18 | 69,4333 | 10,8314 | 0,01 |

We observe what happen with the general average of weight of the sample, where we verify that the force training acts in the process of weight reduction.

What more called us the attention was the corporal composition, initially was of 29,3 ± 7,5 and the end 25,3 ± 6,2, figure 4.

Figure 4 - Evolution of the percentage of corporal Fat of the Sample




**P < 0,01**

Baker and Brownell (2003), tell that to increase the lean mass is one of the factors that must have been observed in the training, being thus the training against the resistance is basic.

With these data we verify that the training of force gave resulted effect in corporal composition of the practitioners who had as objective the loss of weight, p<0,01. We observe that the practice of force training showed itself efficient in the reduction of the percentage of corporal fat. This fact had already been verified for other authors, SILVA (2003) in work realized with judo person verified that judo, a modality that gives much emphasis in force, revealed efficient in the control of the corporal weight of children. The physical activity is responsible for approximately 25% of the daily energy expense, exists an inverse relation between habitual level of physical activity and profit of weight (HALPERN and MANCINE, 2002).

CONCLUSION - From the demonstrated results above, we verify that:

· The force training revealed efficient in the reduction of corporal fat for practitioners of training with weights in the academy of the UniEVANGÉLICA;

· The average of IMC of the practitioners with the objective of loss of weight is of 26,05 ± 3,10;

· The amount of people who had frequented the academy with the objective of loss of weight was of 195 people what is equivalent to 42% of the total of practitioners.

· More studies need to be developed in order to verify the real impact of the physical activity with weights, in the corporal composition of the people.

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**INFLUENCE OF TRAINING WITH WEIGHT IN REDUCTION OF CORPORAL FAT AT ACADEMY OF UNIEVANGÉLICA.**

Abstrac
The force training is one of the basics properties of the motricity, by the side of the resistance, determining the physical profit(SPRING et al. 1995). The Working Out is a physical activity that has grown in the last years, being that the main objective of the majority of the people is the reduction of the corporal fat. This made us to raise a question: the force training influences in the reduction of corporal fat, when the same he is not allied to a aerobics session. The general objective of this study was to verify the influence of the training of force in reduction of the corporal fat, specific, to raise the index of corporal mass of academics of the UniEvangélica who working out as physical activity, with the objective of loss of weight. Methodology, the study was realized in the academy of the UniEVANGÉLICA, with people with age understood between 15 and 50 years that practised training with weight with the objective to lose weight, the sample was composed for 32 people. The evaluations had occurred at the beginning and after of 12 weeks of training. The evaluations anthropometrical had been made in the LAFE - UniEVANGÉLICA, and was composed for the measures of the weight, height and cutaneous folds, the percentage of Corporal Fat was esteem from the equations proposals for Jackson & Pollock. The training was carried through in three weekly sessions with approach duration of 60 minutes, per 12 weeks. The training consisted of a heating in the mat or bicycle per 10 minutes, after this heating, was mounted a program with weight, using exercises for superior, inferior members and trunk. RESULT There was prevalence in the age group of 17 to 26 years as it was waited, in function of the universitarian public who frequents the academy. The initial adiposity of the sample for IMC follows the national gauge, 30% of overweight and 11% of obesity, 59% eutrophics. These indices represent a reality of Brazil. What more called us the attention was the corporal composition, initially was 29,3 ± 7,5 and to the end 25,3 ± 6,2. CONCLUSION - The force training revealed it self efficient in the reduction of corporal fat for practitioners of training with weights in the academy of the UniEVANGÉLICA; The average of IMC of the practitioners with the objective of loss of weight is 26,05 ± 3,10; The amount of people who had frequented the academy with the objective of loss of weight was of 195 people whose equivalent 42% of the total of practitioners.

Keys Words Working out, corporal composition, obesity.

**L´INFFLUENCE DE L´ENTRAÎNEMENT AVEC POIDS DANS LA RÉDUCTION DE LA GRAISSE CORPORELLE CHEZ L´ACADEMIE UNIEVANGELICA**

Resumé:
L´entraînement de force musculaire est une des propriétés basiques de la motricité, à
l´aide de la résistance, ce qui determine un avantage physique. L´objectif général de cet étude a été de vérifier l´inffluence de l´entraînement de force musculaire dans la réduction de graisse corporelle spécifique, à fin d` observer la proportion de masse corporelle des étudiants de UniEvangélica qui font des exercices musculaires comme activité physique et avec l´objectif de perdre le poids. La méthodologie a été réalisée dans l´académie de UniEvangélica avec des étudiants entre 15 et 50 ans qui pratiquaient de l´entraînement avec poids avec l´objectif de perdre le poids. L´épreuve a compris 32 personnes. Les évaluations se sont passés au début et après 12 semaines d´entraînement.
L´évaluation anthropometrique a été composé par les mesures de poids, hauteur et plis cutanés, le pourcentaje de Graisse Corporelle a été estimé à partir des équations proposés par Jackson & PollocK. L´entraînement a été réalisé en trois séances hebdomadaires et à peu près, pendant 60 minutes. Résultat: Il y eut une prévalence entre 17 et 26 ans, comme on pensait. L`adiposité initiale des évaluations par IMC suit le modèle national. 30% de surpoids et 11% d´obésité, 59% eutrophiques. Ce qui nous a attiré l´attention a été la composition corporelle. Au début elle était 29,3 ± 7,5 pour en finir en 25 ± 6,2. Conclusion: L´entraînement a été efficace dans la réduction de graisse corporelle dans l´évaluation de l´académie UniEvangélica. La moyenne du IMC des pratiquants avec l´objectif de disminution de poids est de 25,05 ± 3,10.

Mots clés : Musculation, composition corporelle, obesité.

**INFLUENCIA DEL ENTRENAMIENTO CON PESAS EN LA REDUCCION DE LA GRASA CORPORAL EN LA ACADEMIA DE LA UNIEVANGELICA.**

Resumen:
El entrenamiento de la fuerza muscular es una de las propiedades básicas de la motricidad que conjuntamente con la resistencia determina el rendimiento fisico (SPRING et al. 1995). El principal objetivo de este estudio fue evaluar la influencia del entrenamiento de la fuerza muscular con pesas en la reducción de la grasa corporal, especificamente, observando el índice de masa corporal de estudiantes de la UniEvangélica que practican musculación con la finalidad de

perder peso. Metodologia: se llevó a cabo en la academia de la UniEvangélica con 32 estudiantes de 15 a 50 años que practicaban entrenamiento con pesas con el objetivo de perder peso. Las evaluaciones fueron realizadas al inicio y luego de 12 semanas de entrenamiento La evaluación antropométrica incluyó: peso, altura y medición del panículo adiposo. El porcentaje de grasa corporal se calculó según las ecuaciones de Jackson y Pollock. El entrenamiento fue realizado con una frecuencia de 3 veces por semana con una duración aproximada de 60 minutos por sesión. Resultado: como se esperaba, prevalecieron las edades entre 17 y 26 años. La adiposidad inicial de la muestra estudiada, a través del IMC, sigue los padrones nacionales: 30% de sobrepeso, 11% de obesidad y 59% de eutróficos. Lo que mas nos llamó la atención fue la composición corporal que inicialmente era de 29,3± 7,5 e al finalizar el estudio era de 25,3 ± 6,2 Conclusión: el entrenamiento con pesas fue eficaz en reduzir la grasa corporal en la muestra de la academia de la UniEvangélica. El promédio del IMC de los participantes fue de 26,05 ± 3,10

Palabras clave: Musculación, composición corporal, obesidad.

**INFLUÊNCIA DO TREINAMENTO COM PESO NA REDUÇÃO DE GORDURA CORPORAL NA ACADEMIA DA UNIEVANGÉLICA.**

Resumo

O treinamento de força é uma das propriedades básicas da motricidade, ao lado da resistência, determinando o rendimento físico (SPRING et al. 1995). A Musculação é uma atividade física que tem crescido nos últimos anos, sendo que o principal objetivo da maioria das pessoas é a redução da gordura corporal. Isto nos fez levantar uma questão: o treinamento de força influencia na diminuição de gordura corporal, quando o mesmo não é aliado a uma sessão aeróbica. O objetivo geral deste estudo foi verificar a influência do treinamento de força na redução de gordura corporal, específico, levantar o índice de massa corporal de acadêmicos da UniEvangélica que fazem musculação como atividade física, com o objetivo de perda de peso. Metodologia, o estudo foi realizado na academia da UniEVANGÉLICA, com pessoas com idade compreendida entre 15 e 50 anos que praticavam treinamento com peso com o objetivo de perder peso, a amostra foi composta por 32 pessoas. As avaliações ocorreram no início e depois de 12 semana de treinamento. As avaliações antropométrica foram feitas no LAFE - UniEVANGÉLICA, e foi composta pelas medidas do peso, altura e dobras cutâneas, o percentual de Gordura Corporal foi estimada a partir das equações propostas por Jackson & Pollock. O treinamento foi realizado em três sessões semanais com duração aproximada de 60 minutos, por 12 semanas. O treinamento consistia em um aquecimento na esteira ou bicicleta por 10 minutos, após este aquecimento, foi montado um programa com peso, utilizando exercícios para membros superiores, inferiores e tronco. RESULTADO houve uma prevalência na faixa etária de 17 a 26 anos como era esperado, em função do público universitário que freqüenta a academia. A adiposidade inicial da amostra por IMC segue o padrão nacional, 30% de sobrepeso e 11% de obesidade, 59% eutróficos. Estes índices representam uma realidade do Brasil. O que mais nos chamou a atenção foi a composição corporal, inicialmente era de 29,3 7,5 e ao final 25,3 6,2. CONCLUSÃO - O treinamento de força mostrou-se eficaz na redução de gordura corporal para praticantes de treinamento com pesos na academia da UniEVANGÉLICA; A média de IMC dos praticantes com o objetivo de perda de peso é de 26,05 3,10; A quantidade de pessoas que freqüentaram a academia com o objetivo de perda de peso foi de 195 pessoas o que equivale a 42% do total de praticantes.

Palavras chaves Musculação, composição corporal, obesidade.