

## 126 - EFFECT OF ONE PROGRAM OF SWIMMING IN THE INDICES OF ADIPOSITY OF CHILDREN OF THE PARTICULAR NET OF EDUCATION OF THE CLEAR MOUNT CITY - MG

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### **INTRODUCTION**

The decurrently sedentary of this technological advance brought obtains the appearance of a group of illnesses called hypocinetic, amongst which the obesity is more prevalent (Pollock et al., 1986 and Mellerowicz & Meller, 1979).

The modifications observed more recently in the alimentary habits of the adult individuals have resulted only in more raised consumption caloric. Significant alterations in the ratio of the nutrients are also verified that currently compose the diets. The constant substitution of foods processed in house for the industrialized ones, of bigger energy density, has raised substantially the text of fats saturated in the feeding of the modern man (Frangipani, 1996).

The obesity is characterized by a greasy fabric excess, with exception of the pathological cases, the excess of corporal fat is explained by the disposal of energy in the organism for beyond what it is spends, in other words is consumed more and spends little energy, the result is the storage of this energy in the form of fat in the fabric adipose what consequently it increases the corporal weight (Garcia, 1997).

The fat excess does not have to be faced simply as an aesthetic problem, for the opposite, is a serious riot of health that reduces the life expectancy and threat its quality. Guedes and Guedes in 1998, affirm that great number of evidences exists that allow to affirm that the accumulation of fat assumes important role in the variation of the organic functions, consisting in one of the risk factors more significant associates to the tax of general and specific mortality of the population.

The incidence of the obesity de comes increasing in individuals of both the sexes, in different eateries, causing innumerable problems related to the health, as the arterial hypertension, hypo grease bands, renal illnesses, diabetes, pulmonary illnesses, psychological and social osteoarthritis, dismenorreia and psychological problems (Williams, 1992).

The obesity can have beginning in any age, unchained for some factors as it weans precocious, inadequate food introduction, riots of the alimentary behavior and the familiar relation, especially in the periods of acceleration of the growth (Fisberg, 1995). When it initiates itself in infancy can cause diverse physiological and psychological alterations (Parodi, 1993), becoming a predisponent factor for cardiovascular illnesses (Blair, 1994). The overweight and the obesity are related as more common the pediatric chronic unfunction in the industrialized countries, leading to the development of endocrinial and functional metabolic clutters with serious repercussions in the adult age (Guedes & Guedes, 1998).

The obesity in young is a multifactorial problem that can involve significant medical complications due to high tax of relapse (Must et al., 1992). Whitaker et al. (1997) and Price (1987) tells the necessity of the precocious identification of children with weight excess to diminish the risk of if becoming obsesses adults. The authors emphasize two factors that can contribute to fold the risk of the obesity in young adults : the obesity in one of the parents or its presence in infancy. Both the factors do not have to be considered separately, but in interaction. Armstrong & Welsman (1997) investigating the relation enter the physical activity of children of 5 the 7 years, of both the sexes with the standard of activity of its mothers, had gotten resulted inconclusive due to the sedentary style of life of the majority of the mothers. After to examine characteristics of the parents and associates them it alimentary the pertaining to school overweight and behavior, Cutting et al. (1999) they had concluded that the model of behavior and the inadequacies of the familiar diet are factors that can result in the precocious obesity.

Oller & Dâmasco (1986), cite that indications exist of that the obsesses children present a lesser physical activity and an energy expense 20.7% minor in relation the not obsesses children.

For Simons-Morton et al. (1988) the physical activity can play important role in the prevention, conservation and improvement of the functional capacity, and, therefore health of the young.

Klesges (1993); Nguyenl et al. (1996); Shannon (1991) corroborates citing that the programs of physical exercises can reduce the indices of morbidity and mortality by means of the positive effect in the arterial pressure, in the plasmatic levels of lippies, the profile of lipoproteins and the cardiovascular function, considering that these clinical conditions have prevalence in the individuals with overweight and obesity and, according to Romieu et al. (1988), the physical exercises contribute for the reduction of the metabolic aggressions associates to the repeated cycles of loss and profit of corporal weight and the modifications in the related alimentary habits to the lesser ingestion of fats.

Studies made for Damâso et al (1994) had demonstrated that the indicated physical exercises more for the combat to the obesity are the aerobics, of average or long duration, that involves great muscular groupings. Such exercises present an expense moderate caloric of the high one. Thus exercises as to walk, to trot, to pedaled and to swim are most appropriate for this purpose. For McArdle et al (1995) the intensity of the exercise at the beginning of one slimming program must be of gradual nature and it does not have to induce to one high energy great expense. It is counter-productive to include training progressions excessively fast, after all, many obsesses at the beginning show certain psychological resistant. Works of force and muscular aerobic resistance are component important for the physical aptitude of the young (American College of Sport Medicine, 2000).

As Williams (1993) the use of programs of physical exercises for obsesses children and adolescents helps to diminish the high levels of fat in the blood. The author also tells that the use of the exercises without the control of the caloric ingestion in the feeding can come to frustrate the slimming attempt.

For Bullard (1970) the swimming presents two characteristics that can be especially interesting to the program of weight control. The effect of the buoyancy in the aquatic way reduces the overload to articulate, what it provides to the individuals with bigger amount of weight and corporal fat faster progression how much to the frequency, to the intensity and the duration of the physical efforts, since the risk of suffers injuries for overload to articulate in an exercise in the water is minor who in the land. How much to the specific heat and the term raised to conduct more of water in comparison with air, what it increases the capacity

of waste of corporal heat produced by the physical exercise and offers chance to more support muscular work in raised levels than in the land.

Maglischo (1999) says that the exercise enormously affects the amount of fat that a person loads. Of this form, the corporal fat of the swimmers classified for eateries band generally is around 1% 2% below of the children in the normal population.

### MATERIALS AND METHODS

This research characterizes as experimental of the type randomized clinical assay. The participants they had been placed randomly for formation of groups of study and control (Pear tree, 1998).

**Population and sample** - The population was composed for children with ages between 07 and 10 years, of the feminine sex, students of the particular net of education of the Clear Mount city MG. As it shows is had to break of a randomized drawing the School Standard that had 145 registered pupils, of 1<sup>º</sup> the 4<sup>º</sup> series. 22 children of the feminine sex of this school had been drafted randomly. These children had age between 07 and 10 years, being randomizations in two groups: Experimental group (GE) composed for 11 children who had practiced guided physical activity, swimming. The Group Control (GC) was composed for 11 children who had not participated of the swimming program.

Criteria of exclusion of the study: For Experimental Group - GE, those children who practiced other physical activities beyond the practical one of swimming and that they lacked 20% of the considered work. For Group Control - GC, those children who participated of any systemize physical activity during the period of the study. The signature of the term of free and clarified assent for the accomplishment of the research was requested to the parents of the participants

**It collects of Data** - The collection of data was carried through two times for each child of the study (daily pay and after - test), by means of the application of the methodology used for the IMC (Bray, 1978), the to weight of the coetaneous folds, having followed the Protocol of Slaughter (1988) and delivers and to act of receiving of an authorization and an alimentary to revise (Gouveia, 1978) that they had been answered by the responsible one of the children who had participated of the study. Before the beginning of the evaluations, all the pertaining to participants of the sample to GE had presented one bill of health confirming not the impediment of the practical one of swimming.

**Experimental-Program treatment of swimming** - The guided program of swimming consisted of 08 weeks, in alternated days, with 03 weekly sessions. After the collection of data of the daily pay-test, initiated the experiment. To the GC the only carried through request was of that, they did not practice physical activity in the period of 02 months.

The Experimental Group initiated the activities of swimming in the Aquatic Nucleus of University the State Clear Mount, in a warm swimming pool with temperature around 27<sup>ºC</sup> the 29<sup>ºC</sup>, depth of 1,10m, width of 15x8m. The lessons had had the duration of 60 minutes each, that had been divided in three parts; 10 minutes of heating, 40 minutes for main part 10 for return the calm. The lesson plans had been elaborated objectifying the development of swim across the Crawl and Costas. A the end of the period of duration of the swimming program GE e the GC had passed again for the to weigh of the IMC and coetaneous folds for analyze and comparison of the daily pay and after test.

**Statistical treatment** - The analysis statistics was made using the not-parametric test of the addition of ranks of Wilcoxon for two independent samples that is equivalent to test V of Mann-Whitney that if they find in package SPSS.

### RESULT AND QUARREL

The results of this study will be presented in the following topics : ) The changeable weight in the groups experimental and has controlled, daily pay and after test; b)0 variable IMC - Index of Corporal Mass - for daily pay and after test, experimental group and control; c)the percentile 0 variable of fat stops the daily pay and after test, experimental group and control.

1<sup>a</sup>. Comparação of the 0 variable weights for the experimental group (daily pay) and the group has controlled (daily pay)

0 variable	Exp.	N	Wilcoxon W	Test of Mann Whitney U	Z	Value p	Significance
Weight G. E.	Daily pay	11					
Weight G. C.	Daily pay	11	125,500	59,500	-,066	,949	N. S.

2<sup>a</sup>. Comparison of the 0 variable weights for the experimental group (after) and the group has controlled (after)

Variable	Exp.	N	Wilcoxon W	Test of Mann Whitney U	Z	Value p	Significance
Weight G. E.	After	11					
Weight G. C.	After	11	110, 000	44, 000	-1,085	,300	N. S.

Compared the experimental group and the group it has controlled, and comparing the groups between itself, in the daily pay and after test, significant difference in relation to the changeable weight was not observed.

These findings also are proven by made studies Bar-Or (2000) going of meeting with Balanban & Silva (2001) that quotation that the basic principle of the programs of loss of weight will have to be the available of the negative energy balance. Being able to identify in three ways to reach the deficit caloric: for reduction in the caloric ingestion, by means of dietary training; for rise of the energy demand, by means of modifications in the levels of practical of physical activity; e for the combination of both, dietary orientation and physical activity.

3<sup>a</sup>. Comparison of 0 variable IMC in the daily pay has tested and after test for the experimental Group

Variable	Exp.	N	Wilcoxon W	Test of Mann Whitney U	Z	Value p	Significance
IMC G. E.	Daily pay	11					
IMC G. E.	After	11	109, 000	43, 000	-1,149	,270	N. S.

4<sup>a</sup>. Comparison of 0 variable IMC in the daily pay has tested and after test for the Group Control

Variable	Exp.	N	Wilcoxon W	Test of Mann Whitney U	Z	Value p	Significance
IMC G. C.	Daily pay	11					
IMC G. C.	After	11	115,000	49,000	-,756	,478	N. S.

With regard to 0 variables IMC, it did not have significant difference when compared the results of the daily pay it has tested for the one after test, as much for inside of GE how much between the GC. However, no control alimentary was carried through, what it goes in accordance with Melby and Hill (1999) that they raise the hypothesis of that the isolated exercise does not present great advantages in the slimming, therefore only associated to the diet is that the effect would be ideal.

5<sup>a</sup>. Comparison of the 0 variable %G in the daily pay has tested and after test for the experimental Group

Variable	Exp.	N	Wilcoxon W	Test of Mann Whitney U	Z	Value p	Significance
%G. G. E.	Daily pay	11					
% G G. C.	After	11	109, 000	43, 000	-1,149	, 270	N. S.

6<sup>a</sup>. Comparação of the 0 variable %G in the daily pay has tested and after test for the Group Control

Variable	Exp.	N	Wilcoxon W	Test of Mann Whitney U	Z	Value p	Significance
%G G. C.	Daily pay	11					
%G G. C.	After	11	122, 000	56, 000	-0, 295	, 797	N. S.

With relation the 0 variable of percentage of fat we do not find significance between the groups.

All the participants of our study, present average in the indices of percentage of fat in the daily pay and after test it enters 27,96 30.53% if fitting as levels of moderate the high one in the percentages of in agreement fat Lohman (1987) when present the picture for the classification of obesity in children.

It practices it to regulate of a physical activity backwards I obtain positive points according to Epstein and Goldfield (1999), Guedes and Guedes (1998), Denadai et al. (1994) and Williams (1993) as the increase of the lean mass that favors the metabolism of rest, the potential of thermometer (diet), the reduction of the arterial pressure, the improvement in the cardiovascular condition, benefit for the psychosocial health, improvement of self-steem, improvement in the autonomy and self-efficiency and finally the reduction of the percentage of corporal fat, what we do not observe in our study. We attribute to such fact not the accomplishment of an alimentary control what it seems to be indispensable according to Williams (1993) being able to frustrate the attempt of reduction of the adiposity.

## CONCLUSION

The present study it concludes that: one isolated program of swimming, without alimentary control, in a period of 08 weeks, does not promote alterations, statistical significant, in the reduction of the corporeal weight of children of 07 the 10 years; one isolated program of swimming, without alimentary control, in a period of 08 weeks, does not promote alterations, statistical significant, in the reduction of the IMC of children of 07 the 10 years; one isolated program of swimming, without alimentary control, in a period of 08 weeks, does not promote alterations, statistical significant, in the reduction of the percentage of fat of children of 07 the 10anos.

**WORDS KEYS:** Obesity, child, swimming

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**EFFECT OF ONE PROGRAM OF SWIMMING IN THE INDICES OF ADIPOSITY OF CHILDREN OF THE PARTICULAR NET OF EDUCATION OF THE CLEAR MOUNT CITY MG**  
**SUMMARY**

The decurrently sedentary of the technological advance brought obtains the appearance of a group of called illnesses hypocinetic, amongst which the obesity is the most prevalent (Pollock et al., 1986; Mellerowicz & Meller, 1979), bringing I obtain some illness . In this context the intention of this study was to evaluate the effect of swimming in the reduction of the weight, the IMC and the percentage of fat in children. The sample consisted of 22 children of the feminine sex, with age of 07 the 10 years. They had been divided in two randomizations groups, being experimental group I (GE), 11 practicing children of swimming; e group II has controlled (GC), 11 not practicing children of swimming. The experimental group participated of lessons of swimming with frequency of 03 times per week, with the time of 60 minutes of lesson, with monitored cardiac frequency with 60%, during 08 weeks. The corporal composition was evaluated using the IMC and the Protocol of Slaughter, in the daily pay and after test, in the two groups. The analysis statistics was made using the not-parametric test of the addition of ranks of Wilcoxon for two independent samples that is equivalent to test V of Mann-Whitney that if they find in package SPSS. After 08 weeks groups I and II had been compared between itself, not having significance in the corporeal weight, IMC and percentage of fat. The results suggest that swimming in the period of 08 weeks is not enough to promote the reduction of the IMC, corporeal and percentile weight of fat in children of 07 the 10 years of age, of the feminine sex. The physical activity (swimming) associate to one has controlled dietary seems to be method of choice for the reduction of the percentage of fat.

WORDS KEYS: Obesity, child, swimming

**EFFECTO DE UN PROGRAMA DE NADAR EN LOS ÍNDICES DE ADIPOSITY DE NIÑOS DE LA RED PARTICULAR DE LA EDUCACIÓN DE LA CIUDAD CLARA DEL MONTAJE - MAGNESIO**

**EL RESUMEN**

El sedentarismo recurrente del avance tecnológico traído obtiene el aspecto de un grupo de los hipocinéticas llamados de las enfermedades, entre los cuales el obesidad es el más frecuente (Pollock y otros., 1986; Mellerowicz y Meller, 1979), trayendo obtengo algunos conobirdades. En este contexto la intención de este estudio era evaluar el efecto de nadar en la reducción del peso, del IMC y del porcentaje de la grasa en niños. La muestra consistió en 22 niños del sexo femenino, con la edad de 07 los 10 años. Habían sido divididos en dos grupos de los randomizados, siendo grupo experimental I (GE), 11 niños practicantes de natación; el grupo de e II ha controlado (CROMATOGRAFÍA GASEOSA), 11 niños no practicantes de natación. El grupo experimental participó con frecuencia de lecciones de la natación de 03 veces por semana, con la época de 60 minutos de la lección, con frecuencia cardíaco supervisado con el 60%, durante 08 semanas. La composición corporal fue evaluada usando el IMC y el protocolo de la matanza, en el pago diario y después de la prueba, en los dos grupos. La estadística del análisis fue hecha usando la prueba no-paramétrica de la adición de filas de Wilcoxon para dos muestras independientes que es equivalente a la prueba V de Mann-Whitney que si encuentran en el paquete SPSS. Después de 08 semanas agrupa I e II había sido comparado entre sí mismo, no teniendo la significación en el peso corpóreo, IMC y porcentaje de la grasa. Los resultados peso sugieren que el nadar en el período de 08 semanas no sea bastante para promover la reducción de el IMC, corpóreo y del porcentaje de grasa en niños de 07 los 10 años de la edad, del sexo femenino. El asociado físico de la actividad (natación) a uno ha controlado dietético se parece ser método de opción para la reducción del porcentaje de la grasa.

MOTS CLÉS: Obesité, enfant, natation

**EFFETS D'UN PROGRAMME DE NATATION NOUS INDICES D'ADIPOSITÉ D'ENFANTS DU FILET PARTICULIER D'ENSEIGNEMENT DE LA VILLE DE BÂTIS CLAIRS - MG**

**RÉSUMÉ**

la sédentarité liée à l'avance technologique a apporté elle l'aspect d'un groupe de maladies appelées hipocinéticas, parmi lesquelles l'obésité est le plus dominant (Pollock et al., 1986 ; Mellerowicz et Meller, 1979), en apportant il plusieurs conobirdades. Dans ce contexte l'intention de cette étude a été évaluer les effets de la natation dans la réduction du poids, de l'IMC et du pourcentage de graisse dans des enfants. L'échantillon a consisté à 22 enfants du sexe féminin, avec âge de 07 à 10 ans. Ont été divisées dans deux groupes des randomizados, en étant groupe I expérimental (GE), 11 enfants pratiquants de natation ; et groupe II contrôle (GC), 11 enfants non pratiquants de natation. Le groupe expérimental a participé de leçons de natation souvent de 03 fois par semaine, avec le temps de 60 minutes de leçon, souvent cardiaque contrôlée avec 60%, pendant 08 semaines. La composition corporelle a été évaluée en utilisant l'IMC et le Protocole de Slaughter, dans la pré et ensuite l'essai, nous deux groupes. L'analyse statistique a été faite en utilisant l'essai não-paramétrico de l'addition de grades de Wilcoxon pour deux échantillons indépendants qui est équivalent à l'essai V dont de Mann-Whitney ils se trouvent à l'emballage SPSS. Après 08 semaines les groupes I et II ont été comparés entre lui, en n'ayant pas n n'ayant pas importance dans le poids corporel, IMC et pourcentage de graisse. Les résultats suggèrent que la natation dans la période de 08 semaines ne soit pas suffisante pour promouvoir la réduction de l'IMC, poids corporel et de pourcentage de graisse dans des enfants de 07 à 10 ans d'âge, du sexe féminin. L'activité physique (natation) associé à un contrôle diététique semble être méthode de choix pour la diminution du pourcentage de graisse.

LLAVES DE LAS PALABRAS: Obesidade, niño, nadando

**EFEITOS DE UM PROGRAMA DE NATAÇÃO NOS ÍNDICES DE ADIPOSIDADE DE CRIANÇAS DA REDE PARTICULAR DE ENSINO DA CIDADE DE MONTES CLAROS - MG**

**RESUMO**

O sedentarismo decorrente do avanço tecnológico trouxe consigo o aparecimento de um grupo de doenças chamadas hipocinéticas, dentre as quais a obesidade é a mais prevalente (Pollock et al., 1986; Mellerowicz & Meller, 1979), trazendo consigo várias conobirdades. Neste contexto o propósito deste estudo foi avaliar os efeitos da natação na redução do peso, do IMC e do percentual de gordura em crianças. A amostra consistiu em 22 crianças do sexo feminino, com idade de 07 a 10 anos. Foram divididas em dois grupos randomizados, sendo grupo I experimental (GE), 11 crianças praticantes de natação; e grupo II controle (GC), 11 crianças não praticantes de natação. O grupo experimental participou de aulas de natação com freqüência de 03 vezes por semana, com o tempo de 60 minutos de aula, com freqüência cardíaca monitorada com 60%, durante 08 semanas. A composição corporal foi avaliada usando o IMC e o Protocolo de Slaughter, no pré e pós teste, nos dois grupos. A análise estatística foi feita utilizando o teste não-paramétrico da soma de postos de Wilcoxon para duas amostras independentes que é equivalente ao teste V de Mann-Whitney que se encontram no pacote SPSS. Após 08 semanas os grupos I e II foram comparados entre si, não havendo significância no peso corpóreo, IMC e percentual de gordura. Os resultados sugerem que a natação no período de 08 semanas não é suficiente para promover a redução do IMC, peso corpóreo e percentual de gordura em crianças de 07 a 10 anos de idade, do sexo feminino. A atividade física (natação) associada a um controle dietético parece ser método de escolha para a diminuição do percentual de gordura.

PALAVRAS CHAVES: Obesidade, criança,natação