

THE WIDESPREAD CONSUME OF ERGOGENIC SUPPLEMENTS IN STRENGTH TRAINING PRACTITIONERSDouglas Faria Da Silva Santos¹Elias De França²Erico Chagas Caperuto³Vinicius Barroso Hirota¹**ABSTRACT**

The aim of the study was to characterize the consumption of nutritional supplements, food and other relevant factors that may influence health and income from bodybuilding practitioner, besides highlighting their point of view about supplementation consumption. We applied a questionnaire with open and closed questions to 55 individuals (male and female, 26.81 ± 8.16 year's average) strength training practitioners in the City of Carapicuíba, São Paulo, Brazil. It can be observe a predominance in the weekly frequency of five days of training where there is widespread consume of dietary supplements and anabolic steroids and in many cases there is negligence of the power of strength training practitioners in question.

Key words: Weight training. Widespread use. Supplements.

RESUMO

O consumo indiscriminado de suplementos ergogênicos em praticantes de treinamento de força

O objetivo do estudo foi caracterizar o consumo de suplementos nutricionais, alimentos e outros fatores relevantes que podem influenciar a saúde do praticante de musculação, além de destacar seu ponto de vista sobre o fato da suplementação. Aplicamos um questionário com perguntas abertas e fechadas a 55 indivíduos (homens e mulheres, idade média de $26,81 \pm 8,16$ anos) praticantes de treinamento de força na cidade de Carapicuíba, São Paulo, Brasil. Podemos observar uma predominância na frequência semanal de cinco dias de treinamento, onde há consumo generalizado de suplementos dietéticos e esteroides anabolizantes e, em muitos casos, há negligência dos profissionais que trabalham com treinamento de força em questão.

Palavras-chave: Treinamento de força. Uso generalizado. Suplementos.

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INTRODUCTION

A proper diet is extremely important to achieve the peak of performance, so the poor diet will result in deficiency of certain nutrients that may compromise performance.

The increasing availability of nutritional supplements has been going through consumption indiscriminately, gym practitioners and athletes with aesthetic purposes looking for a better performance end up being targets of great deals supplements and have consumed a large without proper guidance, so that the results are placed as a result of consumption of these supplements and not of biological individuality (Gomes and collaborators, 2008; Goston e Toulson, 2009; Pereira and collaborators, 2003).

Romero and collaborators (2010) reports that supplement manufacturers often bring innovative compounds or new combinations of known substances in order to meet market demands.

The supplements are often used by many people engaged in physical exercise programs especially in resistance training (RT) type, who belief that nutritional (or hormonal) supplementation will enable him to a greater mental fitness, physical power, endurance and retardation of fatigue, increased muscle tissue, increased energy production and desirable aesthetic (Araújo and collaborators, 2002; Domingues and Martins, 2007; Iriart and Andrade, 2001; Iriart and collaborators, 2009; Santos and Farias, 2017; Silva and Moreau, 2003; Szuck, Salgueirosa and Venturi, 2011).

The large (supraphysiological) supplementation consumption can cause both damage and health benefits, however, the used without proper guidance can increase the risk of intoxication (e.g. organ or tissue overload) or induce nutrient deficiency, due a consumption between two or more concurrent products (Goston and Correia, 2009).

From the problematic studies of supplements and RT from different region in Brazil (Araújo and collaborators, 2002; Domingues and Martins, 2007; Iriart and Andrade, 2001; Iriart and collaborators, 2009; Santos e Farias, 2017; Silva e Moreau, 2003; Szuck, Salgueirosa and Venturi, 2011), this study was conducted in a city of São Paulo state, in order to characterize the nutritional supplementation practices of RT practitioners, such as: 1) knowledge regarding the use of

dietary supplements, 2) means for obtaining supplements, 3) evaluation of the influence of the add-on resistance exercise in the interviewee's point of view, 4) know whether there is orientation and who recommend the use of nutritional supplements, 5) consumption of water per day and 6) use of anabolic steroids.

MATERIALS AND METHODS

Through a descriptive study (Thomas and Nelson, 2002), we developed a questionnaire in order to achieve the goal of the study, with open and closed questions and was applied to 55 regulars and practitioners of weight training (average age of 26.81 \pm 8.16 years, coefficient of variation=30.43%) gym academies of City Carapicuíba-SP, Brazil; in the sample we had 80% (n = 44) male subjects with a mean age of 27.5 years, and 20% (n= 11) of the total sample was composed by females, with a mean age of 22.8 years. The data collection procedures followed to Info Card Subject to the Research and signing of the Consent Terms and informed, following the ethics of care in research set by the Declaration of Helsinki, 1964, Resolution no. 466 2012 (WHO, 2001).

Data collection was carried in which individuals were asked randomly and/ or voluntarily respond to the questionnaire individually, where the researcher only accompanied the clarification of doubts about possible character corresponding to the questionnaire (Mattos and collaborators, 2008), and the criterion for choosing the subject was that they could only respond to the instrument if they do Resistance Training (RT). Data were descriptive and percentage statistics.

RESULTS

Among the total sample, 55% or 30 subjects consume nutritional supplements, and only 10% (n: 03) thereof are properly guided by skilled professionals in nutrition or follow indication and medical advice. The consumption varied between 10% (n: 03) by the subjects consumed a pre-training, 27% (n: 08) consume post workout and 63% (n: 19) respondents used nutritional supplements in both periods, that is, pre and after RT session.

90% of all practitioners use nutritional supplements without guidance and medical supervision; of the total, 10% makes use of nutritional supplements with doctor or nutritionist monitoring.

The average time of RT experience was: 30.9% (n: 17) are between 1 and 6 months of RT practice's; 12.7% (n: 07) between 7 and 12 months; 1.8% (n: 01) 13 and 18 months; 16.4% (n: 09) between 19 and 24 months and 38.2% (n: 21) in a period greater than 25 months of RT practice's.

The consumption of nutritional supplements is present in 23.5% (n: 04) of the RT practitioners with experience practices between one to six months, increasing to 71.4% (n: 05) among practitioners of seven to 12 months of practices.

Supplementation consumption from individuals with practice between 13 to 18 months is remarkable lower, this decrease in this period is due to a characteristic of our sample (only 1.8% from 55 participants). However, among the practitioners with practice time between 19 to 24 months, the consumption of dietary supplements was 77.8% (n: 07) and 66.7% (n: 14) for practitioners from 25 months or more. Apparently, there is a positive correlation between food supplements and RT practice time.

When asked about the weekly frequency of training among practitioners found that 43.6% practice five times a week, 25.5% practice three times, 21.8% practice four times only 5.5% and 3.6% practice six and seven times, respectively. Domingues and Marins (2007) showed similar results in which most RT practitioners attending the academies 5 times a week. This physical activity frequency is closer to the ideal that has been claim to improved health or physical fitness (Garber and collaborators, 2011).

Most of RT practitioners accomplishes three daily meals often, i.e., breakfast, lunch and dinner; an afternoon snack is experienced eventually as snack between lunch and dinner and the evening supper.

In relation to the acquisition of nutritional supplements we had the following results: 40% (n: 12) purchase in pharmacy, 7% (n: 02) between research specialty shops and pharmacies to purchase, 10% (n: 03) buy online at websites that offer these products, 20% (n: 06) acquire in stores specializing in

nutritional supplements, 3% (n: 01) acquire from specialty shops and gym, 3% (n: 01) in academia, 3% (n: 01) research price before the acquisition and 3% (n: 01) did not specify the form of acquisition. And among consumers, 76.7% (n: 23) read package leaflet and/ or label of the supplement before consuming.

Answers from belief that the consumption of nutritional supplements may or may not influence on the improvement in performance only 9.1% (n: 05) of respondents believe not, 85.5% (n: 47) believe that yes (food supplements help in improving performance) and 5.5% (n: 03) did not answer (and these also were positioned on your point of view of consumption of nutritional supplements).

Among those who think it is important the use of supplements, only 5.5% (n: 03) were not justified and among those who do not believe in the positive aspect of food supplements only 3.6% (n: 02) did not report why. Most of the answers were formulated simplistically as "the body needs protein" or "complete supplement to train".

On the question about supplementation and its importance for training practitioners, we use a Likert scale range from zero to ten (0-10). Data has shown in the Fig 1.

In figure 01 most of the practitioners believe that five is the best value to express the importance of supplements use, 17% believe it is extremely important. Among the respondents, 90% use of dietary supplements without recommendations or guidance of an expert, thus, only 10% use prescription and guidance of an expert.

When we analyzed the data collected about the use of anabolic steroids, we had 10.9% (n: 6) who answered yes (make use) and 89.1% (n: 49) answered "no" (i.e., do not use or never used steroids). Among those who have made use of anabolic steroids, names presented were: Deca 21, Oxandrolone and Durateston. Two participant report to use m-drol as a steroid androgenic (m-drol is a supplement containing vitamins and minerals), and other two participants did not describe the name of substance utilized. The anabolic steroids are used without medical recommendations.

Araújo and collaborators (2002) reported a higher nutritional and anabolic steroid supplementation used by Goiania gyms (RT practitioners) such as creatine, amino acids, Deca Durabolin and Hemogenin.

Moreover, according to Iriart and Andrade (2001) such use is associated to the results of immediacy looking for the "perfect body". In the study by Silva and Moreau (2003) studying gyms of São Paulo, of the 209 interviewees, 19% had used or use some type of steroid

anabolic. The use of anabolic rather was restricted to bodybuilders and athletes, and today has become popular with the aesthetic purpose (Iriart and collaborators, 2009).

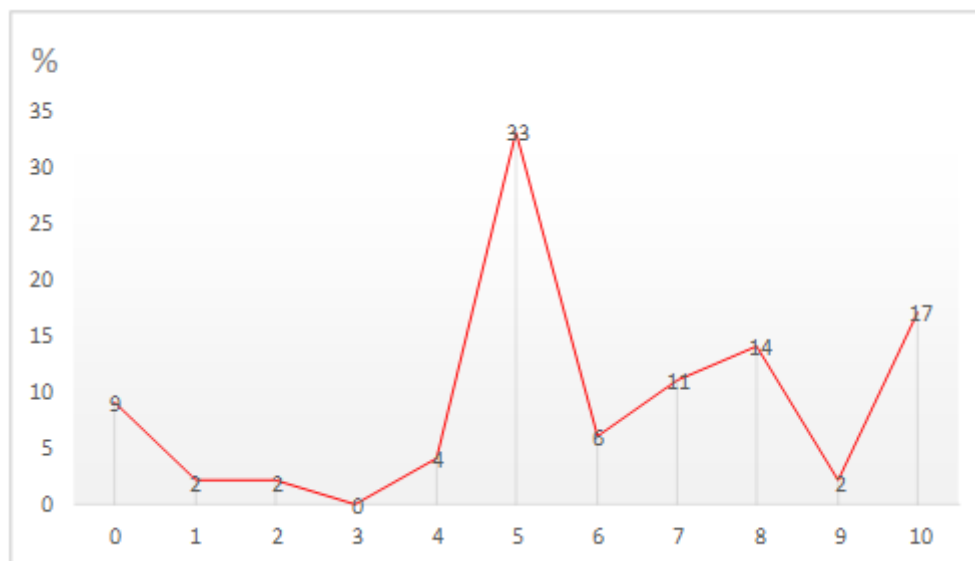


Figure 1 - Evaluation about importance of nutritional supplements consumption, in view of RT practitioner

Finally analyzed about the water consumption (value expressed in liters), the largest number of liters ingested daily is two liters (38.9% of respondents), followed by one liter (25.9%) and 35 surprisingly, 2% of total respondents consumes between three and five liters of water daily. therefore, most practitioners are concerned about hydration.

We can consider that this preliminary study on the indiscriminate use of dietary supplements from RT, most subjects who practice physical activity make use of dietary supplements, train up to five days a week and try to keep informed about what they are consuming, reading package leaflet or the labeling of the products, however do not follow the instructions of a specialist in the area, i.e., a sport nutritionist.

Clearly the overuse of dietary supplements, may apparently have a commercial appeal, but the guidance of a specialist is key to monitoring of performance, so for physical activity one physical education professional should guide and monitor the training, and a nutritionist guide and monitor

the power of individuals, thus showing that there is the necessity of using any dietary supplement. Another factor that directly influences the consumption of dietary supplements is food, where we believe that consumers tend to consume supplements to meet their needs caused by the deficit in feeds.

The use of anabolic steroids is still present in the RT practice, and the sale of these drugs seem to be indiscriminate, so we must be aware of the possible public health problems, because there seems to be a clandestine trade, however, will consume for aesthetic purposes, it is clear the need to make awareness campaigns and/ or establish guidelines for the use of targeted manner in order to minimize the risks brought about by it, concluding be necessary to orientation of nutritionists and trainers for both the physical consumption of dietary supplements as for sports training.

REFERENCES

- 1-Araújo, L. R.; Andreolo, J.; Silva, M. S. Use of dietary supplement and anabolic by body builders in the academies of Goiania-GO. Brazilian Journal of Science and Movement. Vol. 10. Num. 3. 2002.
- 2-Domingues, S. F.; Marins, J. C. B. Use of ergogenic resources and food supplements for practitioners of weight training in Belo Horizonte-MG. Fitness & Performance. Vol. 6. Num. 4. 2007.
- 3-Garber, C. E.; Blissmer, B.; Deschenes, M.R.; Franklin, B. A.; Lamonte, M. J.; Lee, I. M.; Nieman, D. C.; Swain, D. P. ACSM. American College of Sports Medicine position stand. Quantity and quality of exercise for developing and maintaining cardiorespiratory, musculoskeletal, and neuromotor fitness in apparently healthy adults: guidance for prescribing exercise. Med Sci Sports Exerc. Vol. 43. Num. 7. p. 1334-1359. 2011.
- 4-Gomes, G. S.; Degiovanni, G. C.; Garlipp, M. R.; Chiarello, P. G.; Junior, A. A. J. Caracterização Do Consumo De Suplementos Nutricionais Em Praticantes De Atividade Física Em Academias. Medicina (Ribeirão Preto). Vol. 41. Num. 3. p. 327-331. 2008.
- 5-Goston, J. L.; Correia, M. I. T. D. Suplementos nutricionais: Historia, classificação, legislação e uso em ambiente esportivo. Revista nutrição em pauta: Nutrição e esporte. 2009.
- 6-Iriart, J. A. B.; Andrade, T. M. Bodybuilding, steroid use, and risk perception among young bodybuilders of a popular neighborhood of Salvador, Bahia, Brazil. Reports in Public Health. Vol. 18. Num. 5. p. 1379-1387. 2001.
- 7-Iriart, J. A. B.; Chaves, J. C.; Orleans, R. G. Body cult and use of anabolic steroids by bodybuilders. Reports in Public Health. Vol. 25. Num. 4. p. 773-782. 2009.
- 8-Mattos, M. G.; Junior, A. J. R.; Blecher, A. Metodologia da pesquisa em educação física: Construindo sua monografia, artigos e projetos. Phorte editora. São Paulo, 2008.
- 9-Pereira, R. F.; Lajolo, F. M.; Hirschbruch, M. D. consumo de suplementos por alunos de academias de ginástica em São Paulo. Revista de Nutrição, Vol. 16. Num. 3. p. 265-272. 2003.
- 10-Romero, F. G.; Lira, F. S.; Marques, F. A.; Muzy, P. C.; Peres, R. A.; Caperuto, E. C. PAKs supplement improves immune status and body composition but not muscle strength in resistance trained individuals. Journal of the International Society of Sports Nutrition. Vol. 7. Num. 36. 2010.
- 11-Santos, A. V.; Farias, F. O. Consumo de suplementos nutricionais por praticantes de atividades físicas em duas academias de Salvador-BA. Revista Brasileira de Nutrição Esportiva. Vol. 11. Num. 64. p. 454-461. 2017. Disponível em: <<http://www.rbne.com.br/index.php/rbne/article/view/831/650>>
- 12-Silva, L. S. M. F.; Moreau, R. L. M. Uso de esteróides anabólicos androgênicos por praticantes de musculação de grandes academias da cidade de São Paulo. Rev. Bras. Cienc. Farm. Vol. 39. Num. 3. p. 327-333. 2003.
- 13-Szuck, P.; Salgueirosa, F.; Venturi, I.; Características do consumo de suplementos proteicos e aminoácidos por praticante de exercícios contra resistidos das academias da cidade de Canoinhas, SC - Brasil. Revista Saber Científico. Vol. 3. Num. 1. p. 1-11. 2011.
- 14-Thomas, J. R.; Nelson, J. K. Research methods in physical activity. Porto Alegre: Artmed, 2002.
- 15-World Health Organization, World Medical Association Declaration of Helsinki, Ethical Principles for Medical Research Involving Human Subjects. Bulletin of the World Health Organization. Vol. 79. Num. 4. 2001.

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