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BOOK OF ABSTRACTS

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Introduction In adolescents, both total energy intake (EI) and macronutrients seem to have an important role to ensure a good bone development (Vicente-Rodriguez et al., 2008). Adolescent swimmers are required to consume a high amount of calories due to their high energy expenditure (Slattery KM et al., 2012). Therefore, we aimed to evaluate whether energy intake of adolescent swimmers is adequate in relation to their physical activity levels and to describe the distribution of macronutrients in their diet. Methods Twenty adolescent swimmers (11 females, 14.68 ± 1.73 y) participated in the study. A 24 h dietary recall was performed by using the Helena-DIAT (Dietary Assessment Tool). CESNID table of food composition was used to calculate EI, carbohydrates, proteins and lipids. Total energy expenditure was estimated as resting energy expenditure plus the physical activity level of each participant expressed by the metabolic equivalent value plus the thermogenic effect of food. Spanish recommendations of macronutrients for the general population (50-55% of the total energy of the diet should be carbohydrates, 30-35% fats and 10-15% proteins) were taken into account to compare with the diet of adolescent swimmers. Results Forty five percentage of swimmers were over and 55% under EI. 95%, 77% and 82% of the participants did not comply with carbohydrates, proteins and lipids recommendations, respectively. Conclusion Adolescent swimmers did not follow the recommended calorie intake in terms of total energy expenditure. Macronutrients intake of adolescent swimmers diet is not well-distributed according to dietary recommendations for the overall Spanish population. Further studies should be focused on consequences of a poor diet intake in performance and health of adolescent swimmers and the design of interventions to achieve dietary guidelines. References Vicente-Rodriguez G, Ezquerro J, Mesana MI, Fernández-Alvira JM, Rey-López JP, Casajús JA, Moreno LA. (2008). J Bone Miner Metab, 26, 416-424. Slattery KM, Coutts AJ, Wallace LK. (2012). J Sports Med Phys Fitness, 52, S01-5.

DO I TRAIN TO LOSE BODY WEIGHT IF I AM ALREADY FOLLOWING A DIET?
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Introduction Most studies have described how the weight loss is when different treatments are compared (1-3), showing that there are no statistical differences between them when the diet is included. The aim of this study was to compare the effect of training added to a diet with different energy intakes of adolescent swimmers. Methods: 50 young soccer players were divided into five groups, group 1: 9 central defenders (age 15.2 ± 0.4; body mass 73.4 ± 7.8; height 1.82 ± 0.0); group 2: 8 external defenders (age 15.5 ± 0.5; body mass 73.4 ± 7.8; height 1.77 ± 0.0); group 3: 17 midfielders (age 15.2 ± 0.4; body mass 66.3 ± 6.8; height 1.75 ± 0.0); group 4: 12 forwards (age 15.3 ± 0.4; body mass 68.7 ± 12; height 1.75 ± 0.0) and group 5: 4 goalkeepers (age 15.0 ± 0.0; body mass 80.5 ± 7.7; height 1.84 ± 0.0). They were analyzed skinfold thickness, which were subjected to analysis of skinfold calf, thigh, suprailiac, abdominal, subscapular and triceps for subsequent calculation of fat weight, lean weight and fat percentage, using the equation of Faulkner (1968). Statistical analysis was performed using the Shapiro-Wilk normality and for analysis of variance (ANOVA) with extension to the Post Hoc Tukey test for multiple comparisons. In all cases the level of significance was pre-set for P <0.05. SSPS 17.0 was used. Results: The main differences were related to % fat and fat weight (FW) between goalkeepers (G5) and external defenders (p= 0.04) and defenders x external defenders (p= 0.01). Discussion: The group 5 (G5) showed more differences for% fat and fat weight (FW) between groups, ie in this case the goalkeeper have more fat, especially that side (G2) and midfielders (G3). Group 1 similarly showed differences in% fat and FW, but only 2 differences between G1 (central defenders) and G2 (external defenders), in this case the quarterbacks have more fat than the external defenders. As explanation, the study LAGO-PENAS et al (2011) in a study of young footballers aged similar study that goalkeepers and defenders showed higher fat percentage as well as in absolute (FW), which corroborates with this study. In the search Gil et al (2007) only in the goalkeepers% fat and were superior differently from the present study it was observed compared to forwards. References FAULKNER, J. A. Physiology, swimming and diving, In: Faulkner, J. A. (Ed.), Exercise Physiology. Baltimore: Academic Press, 1968. p. 415-46. Gil S M, Gil J, RUIZ F, IRAZUSTA A, J. Physiological and anthropometric characteristics of young soccer players according to their playing position: relevance for the selection process. Journal of Strength and Conditioning Research, v.12, n.2, p.438-445, 2007. LAGO-PENAS C, CASAS L, DELLAL A, REY E, DOMINGUEZ E, Anthropometric and physiological characteristics of young soccer players according to their playing positions: relevance for competition success. Journal of Strength and Conditioning Research, v.28, n.7, p.689-698, may, 2011.

THE EFFECTS OF AN EXERCISE INTERVENTION ON DIETARY INTAKE DURING THE MENSTRUAL CYCLE IN WOMEN SUFFERING FROM PREMENSTRUAL SYNDROME

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Introduction Energy and carbohydrate (CHO) intake are reported to increase during the luteal phase of the menstrual cycle in women with premenstrual syndrome (PMS) (Wurtman et al., 1989). The current study investigated whether energy and macronutrient intake, particularly that of non-milk extrinsic sugars (NMES), was affected by a moderately intensive exercise regime in women with PMS, both over the entire menstrual cycle and between cycle phases. Methods Twenty-five sedentary women, suffering from moderate PMS symptoms, were recruited to a randomised control trial spanning four menstrual cycles, the first serving as a baseline followed by three cycles of intervention. Participants were randomised into either an exercise (EX) group (n=13), which included three supervised 30-minute moderate-intensity exercise sessions per week (70-80% HR max) or a control (CON) group which included a 90-minute, one-to-one meeting once per week (n=12). Dietary intake was assessed by a 24-hour dietary recall interview once per week during each cycle. Venous blood samples were collected three times per week during Cycle 1 and 4 to determine menstrual cycle phase according to plasma estradiol and progesterone concentrations. Results There was no difference in energy intake or macronutrient intake as a proportion of total energy intake (%TEI) between menstrual cycle phases at baseline (Cycle 1). Further, there was no difference in energy intake (2487 vs. 2457 kcal) or macronutrient intake (%TEI; Protein: 14.4% vs. 14.6%, Fat: 33.1% vs. 34.5%, CHO: 48.5% vs. 49.4%, NMES: 17.4% vs. 16.1%), as a result of the exercise intervention (EX vs. CON). However, over the three cycles of the intervention period, CHO intake was lower during the luteal phase in the EX group, as compared to the menstrual (45.5% vs. 50.1%, P<0.05) and follicular (45.5 vs. 49.9%, P<0.05) phases. No difference was found between menstrual cycle phases in the CON group. There was no difference in plasma estradiol or progesterone concentrations between Cycle 1 and 4, in either group. Discussion CHO intake during the luteal phase is reduced following moderately intensive exercise over three cycles. However, overall energy intake does not change. Previous evidence suggested that CHO intake may increase during the luteal phase and as such the findings of this study are unexpected and require further confirmation. References Wurtman J, Brzezinski A, Wurtman R, Laferrere B (1989). Am J Obstet Gynecol, 161, (5), 1228-1234

PHYSICAL FITNESS AND BODY COMPOSITION OF OTAGO ADOLESCENTS.

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It was recently shown that over a third of New Zealanders aged 15-18 years were overweight or obese (1). Poor physical fitness and obesity have been identified as independent risk factors for cardiovascular disease. Habits formed during adolescence continue into adulthood (2). This cross sectional study aimed to describe the relationship between fitness and body composition of adolescents aged 15-18 in Otago, New Zealand. Ethical approval was obtained from the University of Otago Human Ethics Committee. Body composition was measured using segmental bio-electrical impedance and students completed the multistage fitness test, which was used to calculate VO2max (3). Linear regression analysis was undertaken and was adjusted for age, gender and school as these have been shown to affect fitness. In total 269 students participated in both the body composition and fitness testing. Of these 79 % were classified as normal weight with the remaining students classed as overweight (16 %) or obese (4 %). The mean estimated VO2max was 46.3 (6.7) mL/kg/min, it was higher in males than females (48.9 vs. 47.0; P<0.01). There was a significant association between all of the body composition measures (BMI z-scores and fat-to-lean mass ratio) and VO2max. The females had similar VO2max values to previous studies amongst European populations; in comparison the males had lower VO2max values than their Spanish counterparts (5). BMI was slightly higher than previously reported for European adolescents (4) and a strong association was found between body composition and fitness in adolescent females, which was weaker in boys. It is not possible from this study to determine whether fitness influences body composition or vice-versa. However, the low fitness seen in the boys in combination with associations between fitness and body composition suggests initiatives to tackle weight should also focus on fitness. Funding This study was funded by the National Heart Foundation of New Zealand, Lottery Health Research New Zealand and the University of Otago.

CONTROLLED NUTRITION INTAKE AFTER WORKOUT IMPROVES LEAN BODY MASS AND MENTAL STATE OF HIGH SCHOOL BASEBALL PLAYERS IN SUMMER SEASON

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Introduction A young athlete requires sufficient energy intake, not only for the increased energy expenditure, but also for the adequate growth. A high school baseball player shows much more energy expenditure (1). It is practically known that the substantial decrease of the lean body mass occurs in the summer season because of the negative energy balance. The summer season is important for them, as growth. A high school baseball player shows much more energy expenditure (1). It is practically known that the substantial decrease of the lean body mass occurs in the summer season because of the negative energy balance. The summer season is important for them, as

Friday, June 28th, 2013
15:00 - 16:00