

EFFECTS OF OIL SUPPLEMENTATION IN TRAINED AND SEDENTARY ANIMALS

Candido, J.P., Costa, K.G., Brenzikofer, R., Macedo, D.V.

State University of Campinas-UNICAMP

EFFECTS OF OIL SUPPLEMENTATION IN TRAINED AND SEDENTARY ANIMALS Introduction Plant and animal oils have been linked to weight loss and gain of lean body mass. Rice bran oil looks interesting as an exercise supplement due to the high content of polyunsaturated fatty acids ($\omega 9$ 40%, $\omega 6$ 34.5%, $\omega 3$ 1.8%) and antioxidants. Also contains gamma oryzanol, an sterol with possible anabolic effects. Our goal was to analyze the effects of different doses of rice bran oil ingestion in sedentary (protocol A) and in rats submitted to strength training (protocol B) on body composition, food intake and serum leptin and adipokine concentrations. Methods Protocol A: Forty Wistar male rats were divided into 4 experimental groups: control (water - GW) and supplemented during 8 weeks with different doses of rice bran oil by gavage (1, 2, and 6 mL - G1, G2 and G3, respectively). Protocol B: Twenty Wistar male rats trained for eight weeks with three sessions per week, four climbing for session, and overload in grams (g) adjusted every week by a performance test were divided into 3 groups: Control trained (Tr) and trained supplemented with 0.75 and 1.5ml of oil (Tr-0.75 and Tr-1.5). Food intake and animals weight were evaluated weekly. The amount of gonadal fat and serum leptin and adipokine concentrations was also evaluated. Results Protocol A: Food intake did not change in G1 (86.19 ± 12.56) and G2 (74.32 ± 4.73) when compared to GW (85.03 ± 8.37 g). However, it was significantly lower in G3 (40.45 ± 7.77 g). The weight of animals did not change significantly in any group. However, gonadal fat in G2 (9.91 ± 1.71 g) and G3 (11.08 ± 2.53 g) significantly increased compared to GW (7.01 ± 0.98 g) and G1 (8.59 ± 1.84 g). Also serum leptin were significantly increased in G2 (1393 ± 682 pg/mL) and G3 (1977 ± 652 pg/mL) relative to GW (259.2 ± 179.7 pg/mL) and G1 (1018 ± 465 pg/mL). There were no significant changes in serum adipokine concentrations between groups. Protocol B: The performance of Tr (596.8 ± 33.53), Tr-0.75 (575.0 ± 57.7) and Tr-1.5 group (527.5 ± 54.4) significantly increased compared to non-trained group (402.5 ± 27.9). It was not observed significant differences in weight, food consumption, gonadal fat and muscle cross-sectional area of trained animals supplemented or without supplementation. Discussion Although the rice bran oil contains components with potential effect for lean mass gains, the data presented here did not confirm that. Contrarily, we have showed increased fat mass, especially when were consumed larger amounts of oil without physical activity. On the other hand, rice bran oil supplementation produced no additional ergogenic effect on strength performance and body composition of animals induced by strength training. Overall our data suggest caution when using oil as a supplement.

PHYSICAL ACTIVITY LEVELS AND NUTRITIONAL KNOWLEDGE'S AMONG CHILDREN AND ADOLESCENTS

Ribeiro, J.I, Ramos, H.I, Ferro Lebres, V.I,3, Aires, L.I, Mota, J.I, Guimarães, N.I, Esteves, R.I, Moreira, P.I,2, Marçal, G.I

1. Sports Faculty, University of Porto; 2.Faculty of Nutrition and Food Sciences, University of Porto, 3.School of Health Sciences - Polytechnic Institute of Bragança

Introduction Childhood obesity is a consequence of environments that disrupt the balance of energy intake and energy expenditure. Obesogenic environments consist of social norms and environmental factors that facilitate unhealthy behaviors around diet and physical activity. Nutritional knowledge and physical activity are cornerstones of every obesity treatment. The aims are to understand and compare how nutritional knowledge and physical activity patterns occur in children and adolescents, and if there's any differences by gender. **Methods** Sample comprised 467 children and adolescents, 237 boys. PA was measured using Actigraph accelerometers (GT3Xs). Participants were instructed to use the accelerometer, according to standard procedures, and data analyzed using the recommended guidelines (Evenson et al, 2008). Nutritional Knowledge (NK) was assessed using the General Nutrition Questionnaire for Portuguese Adolescents, and results presented as a Final Nutritional Score, in accordance with standard procedures (Ferro-Lebres, V, Ribeiro, J, Moreira, P, 2014). Height, weight, body mass index were also assessed. Univariate Analysis of Variance-GLM was used to compare genders adjusted to different school levels of the students, using SPSS. **Results** Our results present higher ($p < 0.05$) nutritional scores for girls (67,1) than boys (63,6 score). Opposed to these results boys (as expected) significantly present higher amounts of moderate to vigorous PA compared to girls (71,6 min./day vs 42,3 min./day; $p < 0.01$). Additionally, we have 14,7% overweight/obese girls and 17,4% overweight/obese boys. **Discussion** Other studies have observed similar results regarding MVPA in boys and girls, but the NK about diet and nutrition is also crucial for the treatment and prevention of obesity in children. Therefore it's important to understand if higher scores in NK would lead to better nutritional practices; would it be possible that increasing student's NK about food contents regarding different nutrients could improve their daily practices. Do children and adolescents that have better NK behave differently regarding PA practices? **References:** Evenson, K. R., et al (2008). *Journal of Sports Sciences*, 26(14), 1557-1565. Ferro-Lebres, Ribeiro, JC, Moreira, P. (2014): *Ecology of Food and Nutrition* (accepted). Grants: Project supported by: PTDC/DTP-DES/1328/2012 (FCOMP-01-0124-FEDER-028619); and Research Center supported by: PEst-OE/SAU/UI0617/2011. Contact: jrbeiro@fade.up.pt

EFFECTS OF ISOLATED AND COMBINED CARBOHYDRATE AND CAFFEINE SUPPLEMENTATION DURING A SHORT-PERIOD RECOVERY ON SOCCER PERFORMANCE

Andrade Souza, V.I, Bertuzzi, R.2, Bishop, D.3, Lima Silva, A.I

1: UFPE (Vitoria Sto Antao, Brazil), 2: USP (Sao Paulo, Brazil), 3: ISEAL (Melbourne, Australia)

Introduction Considering the lack of published data around the isolated and combined effects of CHO and CAF supplementation on physical and technical performance of soccer players, this study was drafted to investigate whether isolated and combined CHO and CAF supplementation administrated during a 4-h recovery period would have effect on subsequent soccer performance parameters. **Methods** In the morning, participants performed a 90-min Loughborough Intermittent Shuttle Test (LIST). Then, participants ingested: 1) 1.2 g • kg⁻¹ body mass (BM) • h⁻¹ CHO of a 20% CHO solution immediately after and 1, 2, and 3 h post LIST; 2) a dose of CAF (6 mg • kg⁻¹ BM) 3 h post LIST; 3) the same amount of CHO combined with CAF (CHO + CAF); 4) distilled water combined with cellulose capsule (PLA). After a 4-h recovery period the participants performed in sequence (5 min between each test) a countermovement jump test (CMJ), an agility test, a Loughborough Soccer Passing test (LSPT) and a repeated sprint test (5 x 30 m). **Results** CAF tended to improve CMJ height compared to baseline (34.9 ± 4.4 vs. 32.9 ± 3.5 cm, $p = .07$), and significantly improved LSPT performance (40.9 ± 13.0 vs. baseline 45.8 ± 11.6 s, $p = .05$). Both CHO and CHO + CAF ingestion promoted negative effects on RPE and pleasure-displeasure. **Discussion** The main finding of this study was that the isolated ingestion of a moderate dose of CAF (6 mg • kg⁻¹ BM), but not when associated with CHO, improved CMJ height and passing accuracy on subsequent training session. These results are consistent with Foskett et al. (2009), who reported using similar dose of CAF an improvement on CMJ and passing performance after a LIST protocol. However, in the present study, the co-ingestion of CHO and CAF did not promote positive effects on passing skills, corroborating with Gant et al. (2010) who also observed that