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Cafeteria diet increase locomotor activity in wistar male rats

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Introduction: Obesity is major risk factor for the onset of metabolic disorders, and results from increased food consumption, including excess hypercaloric diet and soft drink. Soft drinks and highly palatable foods consumption is changing the eating habits and impairing food control. These foods contain poor nutritional value and high content of calories in carbohydrates and fats that contributes to the increase of the epidemic of obesity in the world. Considering other studies of our group we had observed empirically that animals exposed to cafeteria diet and caloric soda showed great locomotors activity. Aim: Thus, this study aim to analyze of the effect of cafeteria diet associated with caloric and non-caloric soft drinks intake on locomotors parameters of male Wistar rats. Methods: Sixty male Wistar rats were divided into six groups: CON- total control, CS – caloric soda, NSC- non caloric soda, CD – cafeteria diet, CD+CS- cafeteria diet plus caloric soda and CD+NCS- cafeteria diet plus non caloric soda.The locomotors activity was evaluated by open field test. Was employed the open field test for to avaluation of locomotors activity with time of latency; time of grooming; number of rearings; number of inner crossing; number of outer crossing; number of bolus fecales as open field test parameters. Statistical analysis was performed by one-way (ANOVA) followed by SNK for parametric, Kruskal-Wallis for non parametric data and considered significant at $P<0.05$. This study was approved by CEUA/HCPA (13-0482). Results: The hipercaloric diet increase the number of rearing ($F(5, 54) = 2,631$, n= 10 animals/group, $p=0.03$, one-way ANOVA) and inner crossing (Chi-square=14,892; df = 5, n= 10 animals/group, $p=0.011$, Kruskal-Wallis Test) events. Conclusions: This study showed that the that cafeteria diet exposure for twelve weeks showed significant increase in locomotor activity, corroborated by increase in rearing an inner crossing at open field test. This behavior can be associated to food preference for hipercaloric diet despite standard chow. Apoio financeiro: FIPE / HCPA, PIBIC CNPq / HCPA, FAPERGS BIC / UFRGS, CNPq, CAPES. Keywords: cafeteria diet, soft drink, locomotor activity