

## **Fitness-2015: Influence of the energy balance in obesity and overweight of the children and adolescents with Down syndrome of the APAE of the Ipatinga-MG, 2008: Lana Claudia Silva**

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The obesity and the overweight are highly prevalent factors of risk in individuals with Down syndrome which accent the risk of morbidity and mortality in the carriers of this syndrome. This work had as objective main to verify the influence of the energy balance in the obesity and overweight of Brazilian children and adolescents between 07 and 17 years of age Down syndrome. We evaluated 22 children and adolescents (4 girls and 18 boys). As predictors of adiposity, overweight, BMI, percentage of fat (%G) and sum of skinfolds ( $\Sigma$ DB). As for indicators of physical activity, was the calculated energy expenditure through the recall 24 hours of Bouchard and for the Basal Metabolic Rate (BMR), the equation of Schofield-HW. The method used for evaluation of the energy ingestion was the recall 24 hours. For %G, it was observed that 50% of the children and adolescents with Down syndrome are fat and inside of this group it was verified condition of obesity in 25% and 56% of the girls and boys respectively. The energy balance daily medium for the total of children and adolescents was of (-207 kcal). These results had been also found to if comparing the sorts. The calculation of the correlation between energy rocking and IMC, SDB and %G did not reveal significantly different of zero, corroborating the hypothesis of that incidence of obesity and overweight is not associated with the energy balance in children and adolescents Down syndrome. The current epidemic of human obesity implies that whilst energy balance appears to be regulated, the extent of this regulatory process is being overwhelmed in large numbers of the population by environmental changes. Clearly, the shift towards positive energy balance reflects both alterations in energy intake and decreases in physical activity. Increased energy intake and, in particular, the rising proportion of energy from fat is linked with obesity. However, on a population level reduced levels of activity probably play the predominant role. It is apparent that individual susceptibility to weight gain varies enormously. The factors underlying this susceptibility are an area of intense research interest. Variations in BMR from that predicted appear to be linked to the propensity to gain weight. The genes responsible for this variation may include uncoupling proteins-2 and -3, with a number of studies showing a link with obesity.

However, in vivo studies of these proteins have not yet demonstrated a physiological role for them that would explain the link with obesity. Non-exercise activity thermogenesis may also protect from weight gain, but the regulation of this type of thermogenesis is unclear, although the sympathetic nervous system may be important. A profusion of hormones, cytokines and neurotransmitters is involved in regulating energy intake, but whilst mutations in leptin and the melanocortin-3 receptor are responsible for rare monogenic forms of obesity, their wider role in common polygenic obesity is not known. Much current work is directed at examining the interplay between genetic background and environmental factors, in particular diet, that both lead to positive energy balance and seem to make it so hard for many obese subjects to lose weight.

**Foot Note:** This work is partly presented at event of International Conference on Weight Loss and Fitness Expo, July 13-15, 2015, at Philadelphia, USA