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Nutritional status of children and adolescents with Down syndrome

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ABSTRACT: *Introduction:* Inadequate eating habits and physical inactivity directly contribute to changes in nutritional status. Patients with Down syndrome (DS) are more prone to obesity due to genetic and / or environmental factors, which favors cardiovascular diseases with the possibility of complications and reduced life expectancy. *Objective:* To describe the nutritional status of patients followed up at an outpatient referral center for Down's syndrome in a Brazilian tertiary hospital. *Methodology:* Retrospective, cross-sectional and descriptive study with analysis of 1,056 medical records of patients with DS, from 2014 to 2016. Food was considered adequate if it consisted of food from all groups in three main meals and one / two snacks and water in breaks. Sedentary lifestyle was considered if the time of physical activity was less than 300 minutes per week. Nutritional status was assessed using the World Health Organization (WHO) body mass index curves, 2007. The data were analyzed using the Excel program. The Pearson's chi-square test was used to compare data from children and adolescents. The level of significance was set at $p < 0.05$. Approved by the Human Research Ethics Committee of the service referred to under number 04542712.3.0000.0096. *Results:* 517 children (3 to 9 years, 11 months and 29 days) and 539 adolescents (10 to 20 years of age) were evaluated. Food was adequate for 395 (76.4%) children and 336 (62.3%) adolescents ($p < 0.001$). The nutritional status was adequate in 397 (76.8%) children and 371 (68.8%) adolescents, overweight was seen in 40 (8%) children and 64 (12%) adolescents ($p < 0.01$); obesity in 50 (9.7%) children and 96 (17.8%) adolescents ($p < 0.001$) and thinness in 30 (5.8%) children and 8 (1.5%) adolescents ($p < 0.001$). As for physical activity, 39 (7.5%) children and 168 (31.1%) adolescents ($p < 0.001$) were sedentary. *Discussion and Conclusion:* There was an association of increased body mass index with inadequate diet and physical inactivity with increasing age of patients. Individuals with DS, children and adults, are 30 to 50% susceptible to becoming obese in childhood. According to the classic literature, the presence of hypothyroidism, food error and physical inactivity are associated with overweight and obesity in this population. The prevalence of overweight and obesity in children with intellectual disabilities is almost twice as high as in peers without disabilities. And it is observed that people with DS are less involved in physical activities compared to their siblings. For adolescents, behavioral problems such as impulsiveness, recommendation behavior and disobedience discourage good lifestyle habits. Food inadequacy and physical inactivity were more prevalent in the adolescent population. The body mass index increases the age, therefore the consolidation according to the good practices of life habits requires continuous education of the family and the individual. Multidisciplinary monitoring is essential for the prevention of overweight and obesity.

Keywords: Down syndrome; Sedentary behavior; Feeding behavior.