

Abstract

Nutrition. 2007 May;23(5):392-7.

Association of serum concentrations of retinol and carotenoids with overweight in children and adolescents.

de Souza Valente da Silva L, Valeria da Veiga G, Ramalho RA.

Instituto de Nutrição Josué de Castro, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Rio de Janeiro, Brazil.

OBJECTIVE: A study was conducted to verify the association between serum concentrations of retinol and carotenoids with overweight in children and adolescents.

METHODS: In total 471 children (7-9.9 y of age) and adolescents (10-17 y of age), living in a poor region of the city of Rio de Janeiro, Brazil, were assessed. Serum concentrations of retinol and carotenoids were assessed by high-performance liquid chromatography, and cutoffs for inadequacy of retinol and carotenoids were <30 and <40 microg/dL, respectively. Overweight was defined by the sex- and age-specific body mass index cutoffs recommended by World Health Organization. The logistic regression model was used to test the association of overweight, gender, and age range with low serum concentrations of retinol and carotenoids.

RESULTS: Prevalences were 10% for low serum concentration of retinol, 55.8% for carotenoids, and 15.3% for overweight. Retinol inadequacy was significantly higher in adolescents (12.6%) than in children (6.8%). The average of carotenoids was significantly lower in overweight subjects (30.40 +/- 16.74 versus 43.06 +/- 25.26 microg/dL, P = 0.001). Overweight children and adolescents presented a greater chance of a decrease in serum concentrations of carotenoids (odds ratio 2.51, 95% confidence interval 1.43-4.39) when compared with non-overweight subjects.

CONCLUSION: An important prevalence of vitamin A deficiency was found. Overweight children, as much as adolescents, may have a greater chance of presenting low concentrations of carotenoids and, hence, a lower antioxidant defense.

PMID: 17433621