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Adherence to the Mediterranean diet in relation to obesity status in children: The CYKIDS study

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There is evidence regarding the association of adherence to Mediterranean diet (MD) to obesity, among adults; however there is no relevant data for any children's population. We aimed to investigate the association between adherence to MD and obesity status in children. A national cross-sectional study among 1140 children (mean age=10.7±0.98) using stratified multistage sampling design, in Cyprus was performed. Body Mass Index (BMI) was calculated according to IOTF criteria, from parental reference. Adherence to the MD was assessed by the KIDMED diet score. To test the research hypothesis logistic regression analysis was applied with dependent variable two categories of obesity status, normal weight (NW) vs. overweight/obese (OW/OB), and independent the three categories of the KIDMED score, after controlling for several potential confounders. Compared with low Mediterranean diet adherers, children with high KIDMED score were 80% less likely to be OW/OB [95%CI (0.041-0.976)], adjusted for age, gender, parental obesity status, parental educational level, as well as, dietary beliefs and behaviours. When physical activity was taken into account however, the aforementioned relationship was not significant [OR=0.20 95%CI (0.021-1.86)]. Furthermore, male gender, maternal obesity, and dietary beliefs and behaviours emerged as more significant in predicting obesity in children, compared to their KIDMED score. Adherence to the Mediterranean diet is inversely associated with obesity in children; however other behaviours, and in particular physical activity, seem to be more influential.

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Dietary Behaviors and their relationship with overweight/obesity in adolescents of Ho Chi Minh City, Vietnam¹

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Objective: To examine the relationships between dietary behaviors and overweight/obesity among adolescents in urban areas of Ho Chi Minh City, Vietnam.

Methods: A prospective cohort study starting in 2004 with follow-up assessments at 12 and 24 months after baseline was conducted. Anthropometry, parental and child factors, child dietary behaviour information were collected from 378 boys and 407 girls from 18 junior high schools using questionnaires. Body mass index was assessed and overweight/obesity was defined using IOTF cut-offs. Dietary habits of consuming fruits/vegetables, soft-drinks, and snacks were classified as frequently; not frequently or rarely/don't consume. The frequency of having breakfast was divided into three levels: daily, most days, and seldom/some days. Generalized estimating equations using a hierarchical approach were employed to assess the longitudinal relationship between overweight/obesity and the predictors.

Result: After controlling for family factors, age, gender and pubertal status, frequently consuming snacks doubled the risk of being overweight/obesity (RR = 1.7, 95%CI = 1.3, 2.2) and consuming soft-drinks increased the risk three times (RR = 2.7, 95%CI = 2.2, 3.8). In contrast frequently consuming fruit/vegetables decreased the risk of overweight/obesity by 30% (RR = 0.7, 95%CI = 0.5, 0.8) and having breakfast daily decreased it by 20% (RR = 0.8, 95%CI = 0.7, 0.9).

Conclusion: The dietary habits of frequently consuming fruits/vegetables were protective against overweight/obesity. Messages to promote consumption of fruits/vegetables as well as having breakfast and to reduce the consumption of snacks and soft drinks appear to be promising themes in future obesity prevention programs in HCMC.

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Protein intake and obesity in schoolchildren

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Background: The influence of protein on the regulation of food intake and weight control remains incompletely understood. The objective of our study was to assess the association between protein intake and obesity risk in schoolchildren.

Participants and methods: The study was performed in a convenience sample of 1962 Portuguese school children (49.8% girls), 5-10-year-old (age was 7.5 ± 1.23 years). Height and weight were measured according to international standards, and body mass index (BMI) was calculated. The definition of obesity was based on average centiles according to the International Obesity Task Force cut-offs. Children's parents completed a self-administered questionnaire, which provided information on general family background characteristics, children's dietary intake (using a semi-quantitative food frequency questionnaire), and children's physical activity. Unconditional logistic regression models were fitted to estimate the magnitude of the association between protein consumption (adjusted for energy intake) and obesity in children, adjusting for confounders (age, breastfeeding, parental education, dietary fibre, total fat and energy intake).

Results: The prevalence of obesity was 14% in boys and 11% in girls. In boys, the probability of being obese increased significantly for those who were in the highest quartile of protein consumption adjusted for energy intake (OR = 1.70, 95% CI 1.01-2.85, p = 0.046), even after adjustment for confounders (OR = 1.99, 95% CI 1.13-3.50, p = 0.017); in girls, no association was found between protein intake and obesity.

Conclusion: High protein intake was positively associated with obesity in boys.

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Sedentary behaviour as a determinant of coronary heart disease risk

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Purpose: To establish, whether decreases in time spent sedentary could reduce CHD risk.

Method: Daily activities of 49 walking delivery and 49 office postal workers were measured using the activPAL™ activity monitor for seven continuous days. Time spent sedentary, upright, standing and walking, cadence, step count and energy expenditure (MET.h) were obtained. Anthropometric measurements and resting pulse and blood pressure (BP) were taken. Cardiorespiratory (CR) fitness was assessed using the 3-min Step Test. Socioeconomic strata (SES) were assessed on the Scottish Index of Multiple Deprivation (SIMD), scaled 1 to 5. Fasting blood samples were analysed for plasma glucose, total cholesterol, triglycerides, LDL, VLDL and HDL cholesterol, adhesion molecules, CRP, IL₆ and adiponectin. Framingham risk scores for CHD mortality were calculated. Multivariate analyses were done for differences and multiple correlations for any associations.

Results: There were significant differences in PA and fitness levels between delivery postmen and office staff. Fitness level was significantly associated with PA (p < 0.02) and CHD risk factors (p < 0.04). Time spent walking (p = 0.02) and daily step count (p = 0.03) were inversely associated with the number of metabolic syndrome components present in an individual. Time spent in sedentary posture was significantly associated with waist circumference (p = 0.01), plasma triglycerides (p = 0.01), VLDL cholesterol (p = 0.01), HDL cholesterol (p < 0.001) and adiponectin (p < 0.01) levels. SES was inversely related to PA and Framingham risk score (p = 0.04).

Conclusion: The associations between deprivation and CHD can be tackled through reductions in sedentary behaviour.

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