

T5:PS.70

Statistical design and analysis of satiety trials comparing foods and food ingredients

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Scientific and commercial interest in comparing satiety profiles of foods and ingredients is increasing. However, inconsistent and inappropriate statistical approaches can obscure correct interpretation of results. Several issues are particularly relevant. 1) Balancing treatment order to correct for carry-over effects: A Latin Square (where possible a 'Williams' design) should be used for cross-over trials. 2) Baseline correction: In randomized designs, baseline differences are a random effect. Even if differences are small, correction by the simple subtraction ('change from baseline') introduces artifactual differences (thus potentially artifactual significance) and also inflates variance (potential loss of power). This furthermore carries an implicit, rather improbable, assumption that the baseline differences have a fixed impact at all subsequent measurement points. As with other short- and long-term randomized clinical trial designs, use of baselines as covariates as standard practice is strongly recommended, regardless of the size (or significance) of baseline differences. 3) Measurement of duration of response: Most satiety studies focus on area under the curve, which cannot distinguish differences in response profile or duration. The interpolation approach commonly used to estimate time to return to baseline (TTRTB) is not always possible, and produces only a mean with no variance estimate. We have compared several alternative approaches to define a method that allows for quantitative estimate and comparison of TTRTB amongst different foods. The Weibull distribution provided the best fit to data and ability to determine mean response time and 95% interval. Examples of these issues will be presented, with recommendations for best practice.

T5:PS.72

Sugar sweetened beverages and overweight in a sample of schoolchildren.

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Objectives: To assess the association between sugar sweetened beverages (SSB) consumption and overweight in a sample of Portuguese schoolchildren.

Material & Methods: We have enrolled 1675 Portuguese schoolchildren, aged between 5-10 years. After parental written consent, dietary habits were recorded using a semiquantitative food frequency questionnaire. Height and weight were measured according to international standards, and body mass index (BMI) was calculated. The definition of overweight was based on average centiles according to the International Obesity Task Force cut-offs. To determine the magnitude of the association between SSB consumption and overweight, odds ratios estimates including confidence intervals, were computed using unconditional logistic regression, adjusting for confounders (energy intake, TV watching, questionnaire respondent, and parental education).

Results: Prevalence of overweight (including obesity) was 38.6% for girls, and 40.3% for boys. Regarding SSB consumption (serving size/day), no differences between overweight and non overweight children were found. After statistical adjustment for confounders we found that a consumption of more than 3 serving sizes of SSB per day was positively associated with overweight in girls (OR = 2.65, 95% IC: 1.15-6.14) and boys (OR = 2.29, 95% IC: 1.06-4.97), compared to a consumption of less than 3 serving sizes/day.

Conclusion: The intake of SSB for more than 3 serving sizes/day was associated with increased risk of overweight in schoolchildren from both genders.

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TV viewing, physical activity, soft-drink consumption and overweight/obesity of adolescents in Ho Chi Minh City, Vietnam¹

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Objective: To examine influences of TV viewing, physical activity, soft-drink consumption on overweight/obesity of adolescents in Ho Chi Minh City (HCMC), Vietnam.

Methods: A prospective cohort study was conducted among 785 junior high school students over a 2-year period. Data were collected at baseline in 2004 and 12, 24 months later including anthropometry, parental factors, child's dietary behaviours, sedentary and physical activities using questionnaires and accelerometers. Body mass index (BMI) was assessed and overweight/obesity was defined using IOTF cut-offs. Soft-drink consumption was classified as frequently; not frequently or rarely/don't consume. TV viewing was divided into three levels: <2 hours, 2-3 hours, and >3 hours. Longitudinal Poisson regression analyses were applied to assess associations between dietary and physical/sedentary behaviours and adolescent overweight/obesity.

Result: After adjustment for demographics, family/parental factors, the risk of overweight/obesity was 2.5 times higher in children spending >3 hours/day watching TV (RR = 2.5, 95% CI = 1.8, 3.4) compared to <2 hours, and was 30% lower in children having ≥20 minutes/day for vigorous activities (RR = 0.7, 95%CI = 0.6, 0.9) compared to <20 minutes. Frequently consuming sweetened soft-drink increases the risk of overweight/obesity three times (RR = 3.0, 95%CI = 1.9, 4.7) compared to those with the lowest frequency of consumption of soft drinks.

Conclusion: Consumption of soft-drink, physical activity and TV viewing are related to overweight/obesity in adolescents in HCMC. Intervention strategies to promote physical activity and reduce TV viewing as well as soft-drink consumption are needed to prevent overweight/obesity among adolescents in HCMC.

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The role of metabolic syndrome duration in predicting poor health related quality of life (HRQOL) in Iranian adults: Tehran Lipid and Glucose Study (TLGS)

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Objective: To examine the relation between metabolic syndrome (Met.S) duration and HRQOL in Iranian adults.

Methods: In this population based cohort study of TLGS, a representative sample of 644 non diabetic adults (211 men, 433 women), aged ≥20 year, participating in phase III, were selected. The first phase of the TLGS began in 1997. The participants were categorized in three groups, those without and with Met.S in all three phases (group1 and 3 respectively) and those with Met.S in one or two of phases (group2). HRQOL were assessed using the Iranian version of SF-36. A score lower than the sex-specific 10th percentile of each scale defined as poor HRQOL. Met.S was assessed using ATPIII definition. ANCOVA and logistic regression were used in men and women separately and adjusted for related confounders.

Results: Mean age of participants was 49.1±14.0 years, and 67.2% were female. Compared to the first, women placed in the second and third groups had lower scores of Physical component scale (74.1±2.3 vs. 70.0±2.5, 66.3±2.4 p<0.01). In women, there was a significant reducing trend in the scores of bodily pain, general and mental health across the three groups respectively (p<0.05). Among men, however, no significant difference was observed in any of the HRQOL domains in the study groups. In women, the odds ratios of poor physical and mental HRQOL were 1.00(reference), 1.57(0.5-4.8), 4.3(1.5-12.5), (p for trend =0.03) and 1.00(reference), 1.1(0.4-3.0), 3.2(1.3-8.3), (p for trend =0.01) respectively.

Conclusion: The duration of Met.S is associated with poor HRQOL in women, not in men and mainly in physical rather than mental health.