Similar Correlation of Meat and Sugar to Global Obesity Prevalence

Authors : Wenpeng You, Maciej Henneberg

Abstract : Background: Sugar consumption has been overwhelmingly advocated as a major dietary offender to obesity prevalence. Meat intake has been hypothesized as an obesity contributor in previous publications, but a moderate amount of meat to be included in our daily diet still has been suggested in many dietary guidelines. Comparable sugar and meat exposure data were obtained to assess the difference in relationships between the two major food groups and obesity prevalence at population level. Methods: Population level estimates of obesity and overweight rates, per capita per day exposure of major food groups (meat, sugar, starch crops, fibers, fats and fruits) and total calories, per capita per year GDP, urbanization and physical inactivity prevalence rate were extracted and matched for statistical analysis. Correlation coefficient (Pearson and partial) comparisons with Fisher's r-to-z transformation and β range (β ± 2 SE) and overlapping in multiple linear regression (Enter and Stepwise) were used to examine potential differences in the relationships between obesity prevalence and sugar exposure and meat exposure respectively. Results: Pearson and partial correlations (controlled for total calories, physical inactivity prevalence, GDP and urbanization) analyses revealed that sugar and meat exposures correlated to obesity and overweight prevalence significantly. Fisher's r-to-z transformation did not show statistically significant difference in Pearson correlation coefficients (z=-0.53, p=0.5961) or partial correlation coefficients (z=-0.04, p=0.9681) between obesity prevalence and both sugar exposure and meat exposure. Both Enter and Stepwise models in multiple linear regression analysis showed that sugar and meat exposure were most significant predictors of obesity prevalence. Great β range overlapping in the Enter (0.289-0.573) and Stepwise (0.294-0.582) models indicated statistically sugar and meat exposure correlated to obesity without significant difference. Conclusion: Worldwide sugar and meat exposure correlated to obesity prevalence at the same extent. Like sugar, minimal meat exposure should also be suggested in the dietary guidelines.

Keywords : meat, sugar, obesity, energy surplus, meat protein, fats, insulin resistance
Conference Title : ICNFS 2016 : International Conference on Nutrition and Food Sciences
Conference Location : Zurich, Switzerland
Conference Dates : July 21-22, 2016