The objective of this study was to compare ad libitum consumption of common CHO dishes consumed with meat on meal-time food intake and post-meal satiety, BG, insulin and gut hormones in 11- to 13-year-old normal weight children. Two randomized crossover studies were conducted. At weekly intervals, children (experiment 1: 12 males (M), 8 females (F); experiment 2: 6M, 6 F) received in random order 1 of 5 CHO side dishes of rice, pasta, BMP, fried French fries (FFF) or baked French fries (BFF) eaten freely together with a fixed amount of lean beef (100 g). In experiment-1, food intake over 30 min and subjective appetite were measured for 120 min. In experiment-2, the same outcomes were measured along with BG, plasma insulin and gut hormones. The results for boys and girls were pooled as sex was not a factor. In both experiments, children consumed 30-40% less calories at meals with BMP (P<0.0001) compared with all other treatments, which were similar. BMP increased satiety, expressed as a change in appetite per kilocalorie, more than all other treatments (P<0.0001). FFF resulted in the lowest (P<0.0001) glucose and insulin at meal end and post-meal and peptide YY (PYY) post-meal. Blood measures were similar among all other treatments. The physiological functions of CHO foods consumed ad libitum at meal time on food intake, appetite, BG, insulin and gut hormone responses in children is not predicted by the GI. 


This study examined the effects of a dietary prescription for energy intake modification, GI, and potato consumption on weight loss, dietary prescription adherence, body composition, and glucose control in a free-living, self-selecting overweight population. Ninety overweight (body mass index [BMI] 29.6 ± 3.9) men and women were randomly assigned to one of 3 groups for 12 weeks. Two groups were counseled to reduce their energy intake by 500 kcal/day and consume diets that were predominantly composed of either low- or high-GI foods (low glycemic index energy reduced [LGI-ER] or high glycemic index energy reduced [HGI-ER] diet, respectively). The third group received no energy restriction, GI provision, or nutritional counseling. All groups were instructed to consume 5-7 servings of potatoes per week. Changes in weight, body composition, glucose tolerance, and triglycerides were determined at baseline and 12 weeks. There were no significant differences in weight loss or changes in body composition between the groups; however, modest weight loss and body composition changes were seen from week 0 to week 12 for all groups (p < 0.05). Difficulty achieving the prescribed GI diets was evident in this free-living setting. There were no significant changes within or among treatments for fasting concentrations of triglycerides, glucose tolerance, insulin, or insulin sensitivity. The results indicate that in a free-living population of men and women, weight loss is associated with energy intake reduction. Potato intake did not cause weight gain and following either a high- or low-GI dietary prescription was difficult for free-living subjects, emphasizing the complex nature of changing dietary patterns. Link: http://www.ncbi.nlm.nih.gov/pubmed/?term=Randolph+and+potatoes.


This study investigated satiation and satiety following intake of starch-rich side dishes representing a range of glycemic indices (GIs). Twelve normal-weight (BMI = 22.4 ± SD 2.0) participants (6 male, 6
female, 22-30 years) received one of four side dishes or white bread (GI reference) in randomized order on five mornings, followed by an ad libitum lunch. Blood draws prior to test meal and during the 2 h before lunch measured plasma glucose and insulin concentrations. GI was calculated from glucose incremental area under the curve (AUC). Hunger, fullness, desire to eat and prospective consumption were rated just before blood draws. No significant difference was found in hunger or fullness AUCs between test meals. Both potato meals yielded lower desire to eat compared to pasta throughout the 2-hour period (p = 0.002). Total lunch energy intake did not differ. No significant correlations were found between test meal GI and ratings of hunger, fullness or energy intake at lunch meal. GI of energy-equivalent test meals did not predict satiety or lunch meal intake. There was evidence of reduced appetite following both potato meals relative to the other carbohydrate side dishes but no differences in subsequent intake. Link: http://www.ncbi.nlm.nih.gov/pubmed/23221259.


The aim of this study was to produce a validated satiety index of common foods. Isoenergetic 1000 kJ (240 kcal) servings of 38 foods separated into six food categories (fruits, bakery products, snack foods, carbohydrate-rich foods, protein-rich foods, breakfast cereals) were fed to groups of 11-13 subjects. Satiety ratings were obtained every 15 min over 120 min after which subjects were free to eat ad libitum from a standard range of foods and drinks. A satiety index (SI) score was calculated by dividing the area under the satiety response curve (AUC) for the test food by the group mean satiety AUC for white bread and multiplying by 100. Thus, white bread had an SI score of 100% and the SI scores of the other foods were expressed as a percentage of white bread. There were significant differences in satiety both within and between the six food categories. The highest SI score was produced by boiled potatoes (323 +/- 51%) which was seven-fold higher than the lowest SI score of the croissant (47 +/- 17%). Most foods (76%) had an SI score greater than or equal to white bread. The amount of energy eaten immediately after 120 min correlated negatively with the mean satiety AUC responses (r = -0.37, P < 0.05, n = 43) thereby supporting the subjective satiety ratings. SI scores correlated positively with the serving weight of the foods (r = 0.66, P < 0.001, n = 38) and negatively with palatability ratings (r = -0.64, P < 0.001, n = 38). Protein, fibre, and water contents of the test foods correlated positively with SI scores (r = 0.37, P < 0.05, n = 38; r = 0.46, P < 0.01; and r = 0.64, P < 0.001; respectively) whereas fat content was negatively associated (r = -0.43, P < 0.01). The results show that isoenergetic servings of different foods differ greatly in their satiating capacities. This is relevant to the treatment and prevention of overweight and obesity. Link: https://www.ncbi.nlm.nih.gov/pubmed/7498104.