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Acceptability of Lower Glycemic Index Foods in the Diabetes Camp Setting

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Abstract

Objective—To determine the acceptability of lower glycemic index (GI) foods served at diabetes camp.

Design—Crossover design of standard and lower GI menus.

Setting—Three consecutive 5-day diabetes camp sessions.

Participants—140 youth, age 7–16, with type 1 or 2 diabetes.

Intervention—A standard camp cycle menu was reformulated to include 2½ days of standard foods and 2½ days of lower GI foods.

Main Outcome Measures—Youth provided satisfaction ratings after meals and snacks using measures designed for this study. Observations of food consumption were conducted on a random sample of youth for each meal.

Analysis—Descriptive analyses and t-tests were conducted to assess differences in satisfaction with and consumption of standard and lower GI foods.

Results—Lower GI foods served at dinner and for snacks received satisfaction ratings equal to standard foods (dinner: 3.68 lower GI versus 3.79 standard, $P = .30$; snacks: 3.74 lower GI versus 3.79 standard, $P = .60$). Lower GI foods served at breakfast and lunch received lower, though very acceptable, ratings (breakfast: 3.76 lower GI versus 4.04 standard, $P < .01$; lunch: 3.64 lower GI versus 3.88 standard, $P < .01$). Consumption of all meals was acceptable. No differences occurred in the frequency of high or low blood sugars between standard and lower GI days.

Conclusions and Implications—Higher quality carbohydrates may be provided to youth in institutional settings while maintaining sufficient levels of acceptability; specific findings are instructive for designing efforts to increase their consumption.

Keywords

glycemic index; adolescent behavior; diabetes mellitus; diet quality; dietary carbohydrates

INTRODUCTION

The promotion of healthier diets for children has been the subject of substantial research.^{1–3} To date, these studies have dealt primarily with increasing fruit and vegetable consumption and/or decreasing fat intake, and many have demonstrated modest effects on these outcomes.⁴ Current epidemiological and physiological research^{5–8} and subsequent dietary recommendations⁹ are highlighting the importance of improving the overall quality of carbohydrate in the diet. Although highly important, fruits and vegetables are not typically the primary source of carbohydrate for youth. Rather, most dietary carbohydrate is obtained from highly refined sources, such as white flour and sugar.^{10–12} Few studies conducted with youth have targeted overall carbohydrate quality. A notable exception was the Peterborough Schools Nutrition Project,¹³ which successfully increased the availability and consumption of high-fiber bread in the school.

Carbohydrate quality may be especially important for youth with diabetes. Although current American Diabetes Association recommendations emphasize the amount rather than the source of carbohydrate in the diet,¹⁴ a growing body of research is bringing this recommendation into question.^{5,7,15–17} Blood glucose response to the ingestion of carbohydrate-containing foods has been shown to vary dramatically, depending on factors including the molecular structure of the carbohydrate, fiber content, and degree of processing.¹⁸ The blood glucose response to a carbohydrate-containing food is indicated by its glycemic index (GI),¹⁹ defined as the incremental area under the glucose response curve following consumption of a food portion containing 50 grams of carbohydrate relative to that produced by a portion of a control food (either glucose or white bread) containing the same amount of carbohydrate. Higher GI values indicate a greater increase in blood glucose following consumption. Substantial differences exist in the GI of carbohydrate-containing foods. For example, eating white bread results in 2½ times the increase in blood sugar than eating the same amount of carbohydrate from barley or chickpeas.²⁰ In general, vegetables, fruits, intact whole grains, and legumes have a low GI, whereas more refined and processed foods such as bread, crackers, and cereal have a high GI.

Lowering dietary GI may be useful in the treatment of both type 1 and type 2 diabetes by lowering postprandial hyperglycemia, decreasing risk for postabsorptive hypoglycemia, and reducing insulin demand. Although the American Diabetes Association does not include its use in their recommendations, professional organizations in several other countries do recommend using the glycemic index in diabetes care.^{21–23} Findings from studies to date suggest that incorporation of GI principles into diabetes care has substantial promise for improving management of diabetes and reducing the risk for complications without evidence of adverse effects.^{15–17}

To extend these preliminary findings to larger-scale studies or clinical practice, however, the implementation of a lower GI diet must be acceptable and feasible. Given the prevalence of high-GI carbohydrates in the U. S. food supply, as well as the current dietary practices of most children and adolescents,^{10–12} implementing a lower-GI diet may be a substantial challenge. Surveys of food consumption among youth consistently show lower than recommended intake of fruits and vegetables,^{10–12} and minimal intake of whole grains and legumes.^{24,25} Research on the development of food preferences suggests that a primary determinant of food preferences is experience—both personal experience consuming the food and experience observing others consume the food.^{26,27} As such, potential barriers to decreasing dietary GI include insufficient exposure to healthful, lower-GI foods, as well as other social and environment factors such as a lack of nutrition education regarding low-GI foods, the reliance of consumers on processed and convenience foods, and the frequency of meals consumed away from home. Few data exist to indicate what low-GI foods are most acceptable or how to prepare lower-GI foods to increase acceptability. Among families in a pilot study of low-GI advice provided in primary care, 2/3

reported that the child was successful in following the dietary advice, and GI scores as assessed by food frequency demonstrated a significant decrease; however, specific information regarding foods consumed was not provided.²⁸ Among a sample of children with diabetes provided with low-GI dietary advice, those consuming a lower-GI diet demonstrated increased consumption of whole-grain bread and dairy-based foods and decreased intake of white bread and potatoes.²⁹

To advance the literature on the acceptability of lower-GI foods among youth, this study investigates the acceptability of incorporating a lower-GI diet in the diabetes camp setting. Acceptability is assessed by youth satisfaction ratings, observations of consumption, and kitchen staff meal ratings. The camp setting provides adequate control of meal planning to ensure the provision of lower-GI food choices, and it also provides experiential information on the feasibility of modifying meals to be lower GI in an institutional setting.

METHODS

Setting and participants

The study was conducted at a diabetes camp in southern Maryland offering 3 consecutive 5-day summer sessions. Youth were assigned to cabins, grouped by sex and age, along with 2 or 3 counselors per cabin. They participated in typical camping recreational activities, along with diabetes-specific educational activities. Camp meals were served family-style, with cabin groups sitting together at the same table and counselors serving the youth so as to ensure that carbohydrate intake conformed to each youth's specified meal plan. Meal plans for all youth were based on carbohydrate counting and were recorded on cards kept by the counselors. Snacks were served in specified amounts between meals and before bedtime. All eligible campers were invited to participate in the study. Youth attending more than one week were invited to participate during their first week of attendance.

Procedures

Recruitment—Prior to camp, potential subjects and their parents were sent a letter describing the study and inviting them to participate. Parents and youth could return the consent and assent forms by mail or on-site during camp registration. Research staff met with each youth and parent during registration to answer any questions, verify participation or nonparticipation status for each youth, and obtain informed consent and assent. Participants received \$50 to compensate them for their time and effort participating in the study. The study protocol was approved by the National Institute of Child Health and Human Development Institutional Review Board.

Design—Youth were served standard and lower-GI menus on alternating days throughout the camp session. Each camp session ran from Sunday supper to Friday breakfast, so each menu was served for 2 full days plus one additional meal. The lower-GI menu was designed to be a minimum of 25% lower GI than the standard camp menu, consistent with the GI difference in previous studies assessing the influence of dietary GI in persons with diabetes.¹⁵ Analysis of previous years' camp menus demonstrated a GI of approximately 60 (by glucose standard). The lower-GI menu was therefore designed to have an average GI of 45 or less. Analysis of the GI of the 2 menus was conducted using published GI values obtained from standard testing procedures.²⁰

Menu—A standard one-week camp cycle menu was reformulated to include 2½ days of standard foods and 2½ days of lower-glycemic foods. The lower-glycemic foods were selected in an attempt to achieve youth-friendly choices with an emphasis on whole foods. Both standard and lower-GI meals maintained a macronutrient content typical of traditional camp meals.

Foods used included a combination of prepared and processed foods typically used in an institutional setting like camp or school. Consideration in menu planning was given to kitchen management issues, including food cost, preparation time and ease, and storage space. Food costs for the camp session were approximately \$10.00 per day per person, which did not differ from the previous camp year. However, 2 cost differences between the lower-GI and standard menus did occur. The first was owing to the selection of precooked meat for the evening meal of the first day of camp, which is typically a chaotic day. This selection was not related to the GI of the menu, but it was made to reduce preparation effort for that day. The second difference resulted from the lack of stone-ground 100% whole-grain bread from the institutional purveyor. Product evaluation was completed on 5 different types of breads, and the most acceptable product was chosen and purchased from a retail outlet. Apart from the bread, all other lower-GI foods were available from the purveyor.

Food preparation—The meals were prepared by 2 full-time kitchen staff who had been employed by the camp for 10 years, supplemented by rotating kitchen assistants, resulting in 3 staff members on production at most times. Kitchen staff were trained and monitored to ensure adherence to recipe specification. Because highly-processed foods such as those designed for institutional food service typically have greater ease of preparation and shorter cooking times than lower GI whole foods, preparation time was taken into consideration during menu formulation. As such, the amount of preparation and cook time for the lower GI meals did not place a burden upon the kitchen staff compared to the standard meals. For example, both tater tots (high GI) and sweet potato fries (low GI) came fully prepared and required only baking. Pizza muffins (high GI) and whole grain quesadillas (low GI) could both be assembled and baked quickly.

Measures

Satisfaction ratings—Youth completed self-report ratings of their satisfaction with each meal and snack using a 1–5 rating scale. Response options were illustrated with 1–5 stars, and included “I didn’t like it at all,” “It was so-so,” “It was okay,” “It was pretty good,” and “I liked it a whole lot.” (The option “I didn’t eat any” was also provided.) Satisfaction ratings were completed immediately after each meal; participants rated selected individual foods including the primary carbohydrate-containing foods, as well as the meal as a whole. Snack ratings for each day were completed after the evening snack.

Meal observations—Participants were observed for randomly selected meals during the course of the camp session. Each participant was observed for a minimum of 1 lower GI and 1 standard meal, matched for meal time (breakfast, lunch, or dinner). Research assistants observed and recorded food selected, consumed, given away, and wasted following a standard protocol. Food selection and consumption was recorded using a 1-page tick sheet³⁰ indicating foods served, portion size, number of portions taken (initial serving and seconds), and amount consumed, recorded as a percentage of the amount taken in increments of 0%, “took a taste,” 25%, 75%, 100%. The number of servings consumed was calculated by multiplying the number of portions taken by the percent consumed. Each of 4–5 research assistant observed 3 youth per meal. Youth did not know who was being observed for any given meal. In previous studies involving meal observations such as these, children have paid little attention to observers.³¹ Research assistants received standard training on the observation process, serving size, and recording method. Inter-observer reliabilities were assessed on a subset of study observations using a highly trained observer who co-observed with one research assistant per meal. The kappa coefficient for report of portions taken was 0.69 ($p < .001$); for amount consumed was 0.73 ($p < .001$), indicating good inter-observer agreement.³² When using the two values to calculate servings consumed, the kappa coefficient was 0.68 ($p < .001$), with a 0.76 correlation between the two values.

Kitchen staff perceptions and records—For each meal, kitchen staff completed a brief self-report measure rating their satisfaction with the meal or snack on a 1–10 scale in terms of ease of preparation, perceived healthfulness, and perceived acceptance by youth (response options specific to each dimension). A research assistant worked closely with kitchen staff to maintain a record of food costs, sources of ingredients, and preparation time/effort required for meals. Systematic observations of meal preparations were conducted to ensure fidelity and assess for problems encountered.

Blood glucose monitoring—Data from routine camp blood glucose monitoring were obtained. Routine checks occurred five times daily – prior to each meal, at bedtime, and at midnight.

Analyses

Descriptive analyses were conducted to describe the sample and to determine the percent of youth eating each primary carbohydrate food and the mean satisfaction rating of that food. Mean satisfaction ratings were calculated for standard and lower GI meals (breakfast, lunch, dinner) and snacks, and t-tests were conducted to assess for differences in these overall satisfaction ratings. T-tests were conducted both for overall rating of the meal and for ratings of the primary carbohydrates in the meal. From the observational data, percent of youth eating each carbohydrate, as well as mean portion taken and eaten were calculated. An overall mean portion taken, and percent eaten were calculated for each subject for both standard and lower-GI meals, and paired samples t-test was used to assess for differences. Because there were only 2 kitchen staff, meal was treated as the unit of analysis for kitchen staff acceptability, and t-tests were conducted to assess for differences in kitchen staff ratings between standard and lower-GI meals. To test for changes in perceptions as a function of experience with the menu across the 3 consecutive sessions, correlations between each dimension of acceptability and time were conducted separately for standard and lower-GI meals. To assess for differences in out-of-range blood sugars, scheduled blood sugar check (conducted 5 times daily) was treated as the unit of analysis, the frequency of low and high blood sugar readings for each scheduled check was calculated, and t-tests were conducted to assess for differences in the frequency of out-of-range blood sugar readings. A *P* value of .05 was used for assessing statistical significance.

RESULTS

Participants

A total of 157 youth aged 7–16 attended one or more of the three camp sessions. Of these youth, 141 consented to participate, 12 declined, and 4 were ineligible, resulting in a consent rate of 92% of those eligible. Reasons for ineligibility included dietary restrictions that precluded consumption of the camp menu (*n* = 1), no parent available to provide consent (*n* = 2), and not diagnosed with diabetes (*n* = 1). One participant left camp prior to data collection, resulting in a total sample size of 140. The participants ranged in age from 7–16, with a mean age of 11.8; 69% were female. Participant race/ethnicity was 71% white, 18% black, 6% Hispanic, and 5% other. Seventy-five percent reported having at least one parent with a college degree. The majority of participants (97%, *n* = 136) had type 1 diabetes and 3% (*n* = 4) had type 2 diabetes, with a mean age at diagnosis of 6.97. Insulin administration was by injection for 58% (*n* = 81) and pump for 40% (*n* = 56) (2%, *n* = 3, took oral medication).

Satisfaction and consumption

Given the difficulties inherent in providing acceptable institutionally-prepared food to children and adolescents, our goal was to achieve a minimum mean satisfaction rating of 3.00 for each meal. Satisfaction ratings on individual foods indicated adequate acceptability of most primary

carbohydrates (Table 1), with mean ratings ranging from 2.99 to 4.26 for standard foods and 2.70 to 4.34 for lower-GI foods. Overall, satisfaction ratings for meals ranged from 3.83 to 4.14 for standard meals and from 3.42 to 3.71 for lower-GI meals (Table 2). For breakfasts and lunches, standard meals received significantly higher satisfaction ratings than lower-GI meals (see Table 2 for t-test results); however, satisfaction ratings for all meals were acceptable. Satisfaction ratings between standard and lower-GI dinners or snacks were equivalent. No differences in consumption between standard and lower-GI foods were observed. Participants took a mean of 1.25 portions of standard carbohydrate foods and consumed a mean of 92%, compared to a mean of 1.22 portions of lower-GI carbohydrate foods and 89% consumed ($P = .64$ and $.08$, respectively). They took a mean of 1 or more portions of all foods except chili and sweet potato fries, which averaged $.83$ and $.84$ portions respectively, and consumed a minimum of 80% of the food taken (Table 3).

Perceptions of staff

No differences were observed in kitchen staff ratings of standard versus lower-GI meals in terms of preparation effort, healthfulness, or perceived youth appeal. For the lower-GI meals, camp session (time) was negatively correlated with preparation effort ($r = -0.38$; $P < .05$) and positively correlated with overall meal rating ($r = 0.36$; $P < .05$), indicating that perceived effort decreased across sessions, whereas overall meal rating increased. Ratings were not related to time for the standard meals. Kitchen staff reported that both standard and lower-GI meals required somewhat more preparation than menus from previous years, owing to increased use of fresh and unprocessed foods.

Safety

No differences occurred in the number of youth experiencing low or high blood sugar readings on standard versus lower-GI camp days. A mean of 12% low blood sugar readings occurred at each blood glucose check on standard menu days versus 11% on lower-GI menu days ($P = .47$). A mean of 38% high blood sugar readings occurred at each blood glucose check on standard menu days compared to 43% on lower-GI menu days ($P = .33$).

DISCUSSION

Findings from this study support the viability of serving lower-GI meals in the diabetes camp setting. The lower-GI meals were acceptable to children and adolescents attending the camp, while remaining feasible in terms of both cost and preparation effort. Lower-GI dinners and snacks received satisfaction ratings equal to those of standard camp foods. Stone-ground 100% whole-grain bread and whole-wheat tortillas, served as cinnamon toast, French toast, and quesadillas, were well received. Several foods that were new to many of the youth, including chili and sweet potato fries, were accepted by a majority of participants. Several lower-GI snack foods, including granola bars, yogurt, and sugar-free pudding, received particularly high ratings. Trail mix also was well received.

The areas in which lower-GI foods were less satisfactory than standard camp foods are instructive. The least satisfactory lower-GI meals were the 2 lunches, during which legumes were served. Though a highly nutritious food, legumes are infrequently consumed in the standard American diet. Thus, children are likely to require repeated exposure to these foods for optimal acceptability, with 5 to 10 exposures often required for acceptance of a novel food.³³ Although the lower-GI breakfasts were acceptable, their ratings remained lower than the standard breakfasts. This finding reflects the reality of the familiarity and appeal of highly refined carbohydrates, such as pancakes and waffles. Nonetheless, we are encouraged by the extent to which whole-grain and other lower-GI foods were accepted, especially given that several foods were clearly less familiar than standard menu items.

Lower-GI meals were not associated with a reduction in the number of youth experiencing high blood sugar readings on standard versus lower-GI camp days. However, the effect of GI on blood sugar is primarily during the postprandial phase, and it was not possible to obtain postprandial blood sugar readings because of the camp schedule and routine. Thus, this study cannot address the potential effect of a lower-GI diet on blood sugar. It is important to note, however, that the lower-GI diet did not result in an increase in hypoglycemia, an important safety concern.

This study was conducted at a single diabetes camp; thus, participants were from a limited geographic range. Although the camp served urban, suburban, and rural areas, and included youth from a broad range of socioeconomic status, this study does not address cultural, geographical, and socioeconomic differences in acceptability of lower-GI foods. Acceptability may be influenced by race, ethnicity, and cultural factors; however, this study did not involve sufficient participants of varying race or ethnicity to analyze by these factors.

IMPLICATIONS FOR RESEARCH AND PRACTICE

Shifting the diet toward more healthful, lower-GI foods will require achieving acceptance of novel or less familiar foods. Strategies to promote acceptance include repeated exposure across settings, modeling by significant others (eg, peers, parents), and positive parenting practices surrounding food, as well as food-specific strategies such as adding sweetness to the food or pairing the food with another familiar flavor.^{27,33,34} We attempted to enhance acceptability of several of the lower-GI foods by serving them in familiar and appealing ways, such as whole-grain cinnamon toast, whole-grain quesadillas, sweet potato fries, and yogurt/fruit/granola parfaits. Findings from this study also suggest that flexibility may also be an important component of an acceptable lower-GI menu. Considerable variance existed in the satisfaction ratings of both standard and lower-GI foods, and less familiar foods tended to show higher variance. Research staff noted substantial differences in the response of children to some of the less familiar lower-GI foods served. For example, some children would not even taste the chili, whereas others ate heartily and gave it top ratings. Traditionally, menus for children (eg, in camps, schools, and restaurants) attempt to include only foods that are acceptable to the majority of children. However, a lower-GI, whole-foods-based menu may include several less familiar foods. Thus, successful introduction of lower-GI foods may require providing a wider range of selections at each meal to allow children to discover those foods most acceptable to them.

Achieving a positive response to the introduction of new or less familiar foods may be more difficult in the camp setting than at home. Institutional food generally has a reputation of being less tasty than home-prepared or restaurant food, and youth are likely to be especially cautious about trying unfamiliar foods in this setting. In addition, previous research has shown that children have decreased willingness to try unfamiliar foods in novel environments³⁵ or higher arousal conditions (higher levels of activity, noise, and presence of strangers).³⁶ As such, the introduction of novel foods in the camp setting is likely to be more difficult.

Although this study addressed dietary modification in the diabetes camp setting, findings may have relevance to general populations of youth and to other institutional settings such as schools. Dietary intake may be of greater concern for youth with diabetes than for other youth; however, acceptability of healthful foods is probably more similar than different. Moreover, dietary guidelines for youth with diabetes are more closely approximating general dietary guidelines, with youth matching their insulin to intake rather than adhering strictly to a consistent set of exchanges. Although dietary modification to improve carbohydrate quality is challenging, findings from this study add to the body of literature^{28,29} indicating that

movement toward more healthful, lower-GI choices can be achieved, even within the limitations inherent in an institutional setting.

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Table 1
Satisfaction with Standard and Lower-GI Primary Carbohydrate Foods at Meals and Snacks*

Food Item	STANDARD		Food Item	LOWER-GI	
	GI [†]	Percent Eating Mean Satisfaction Rating [‡] (SD)		GI [†]	Percent Eating Mean Satisfaction Rating [‡] (SD)
Breakfasts			Breakfasts		
Waffles	76	98%	Cinnamon toast (100% stone- round whole grain)	51	92%
Pancakes	67	97%	French toast (100% stone- ground whole grain)	51	92%
English muffin/egg sandwich	77	77%	Oatmeal (old-fashioned)	58	25% [§]
			Cream of wheat (slow-cook)	66	37% [§]
Lunches			Lunches		
Tater tots (served with chicken nuggets)	75	94%	Chili (kidney, pinto, black beans)	32	68%
Sandwiches (white bread)	70	94%	Corn chips	63	91%
			Bean burrito (100% whole- wheat tortillas)	28	84%
Dinners			Dinners		
Stuffing (served with turkey)	74	77%	Beef stroganoff with egg noodles	40	97%
Rice pilaf (served with chicken)	75	90%	Sweet potato fries	61	87%
			Pasta with tomato sauce & meatballs	44	93%
Snacks			Snacks		
Chex mix	83	54%	Granola bars	62	62%
Goldfish	72	57%	Corn nuts	40	37%
Graham crackers	74	53%	Trail mix (dried fruit & nuts)	43	50%
Pretzels	83	42%	Sugar-free pudding	27	63%
Cheese sandwiches	70	57%	Yogurt with fruit and granola	37	82%
English muffin "pizza"	77	87%	Quesadillas (100% whole- wheat tortillas)	30	76%

* Fruit was also served at all meals and snacks; salad bar at all lunches and dinners; and vegetables with all dinners.

[†] GI values based on the glucose standard²⁰ available at www.glycemicindex.com.

[‡] Scale ranged from 1–5, with 1 indicating "I didn't like it at all," 5 indicating "I liked it a whole lot."

[§] Both hot cereals were offered on the same day, along with an assortment of lower-GI, whole-grain cold cereals (not rated).

Table 2
Comparison of Satisfaction Ratings Between Standard and Lower-GI Meals

	Satisfaction Ratings*		T	Sig.
	Standard	Low-GI		
Breakfast				
Primary carbohydrate foods	4.04	3.76	2.78	< .01
Entire meal	4.14	3.46	8.52	< .01
Lunch				
Primary carbohydrate foods	3.88	3.64	2.59	.01
Entire meal	4.03	3.42	6.53	< .01
Dinner				
Primary carbohydrate foods	3.79	3.68	1.05	.30
Entire meal	3.83	3.71	1.49	.14
Snacks	3.79	3.74	0.53	.60

* Scale ranged from 1–5, with 1 indicating “I didn’t like it at all,” 5 indicating “I liked it a whole lot.”

Table 3

Consumption of Standard and Lower-GI Primary Carbohydrate Foods at Meals

Food Item	n	STANDARD			Food Item	n	LOWER GI		
		Percent Eating	Mean Portion Taken	Mean Percent Eaten			Percent Eating	Mean Portion Taken	Mean Percent Eaten
Breakfasts					Breakfasts				
Waffles	41	98	1.02	99.4	Cinnamon toast (100% stone-ground whole-grain)	39	95	1.50	87
Pancakes	36	97	1.51	97.5	French toast (100% stone-ground whole-grain)	22	100	1.09	95
English muffin/egg sandwich	21	95	1.08	85.7	Lower-GI hot/cold cereal	12	100	1.83	93
Lunches					Lunches	41	68	0.83	84
Tater tots (served with chicken nuggets)	37	100	1.34	97.3	Chili with beans				
Sandwiches (white bread)	38	97	1.18	85.1	Corn chips	41	91	1.37	92
Dinners					Bean burrito (100% whole-wheat tortillas)	35	86	1.14	82
Stuffing (served with turkey)	41	81	1.07	85.5	Dinners	39	100	1.18	94
Rice pilaf (served with chicken)	34	94	1.21	85.5	Egg noodles (served w/beef stroganoff)	34	79	0.84	80
					Sweet potato fries	36	97	1.32	87
					Pasta with tomato sauce & meatballs				