

Attitudes towards healthful, inexpensive and convenient foods in relation to multiple measures of
diet quality among Seattle-King County adults, WA

Allison Emery

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Committee:

Anju Aggarwal

Adam Drewnowski

Nathan Tefft

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University of Washington

Abstract

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Allison Emery

Chair of the Supervisory Committee:

Nathan Tefft, Ph.D.

Department of Health Services

Background/Objectives: Socioeconomic disparities in diet quality are well established. Food-related attitudes may play an important role in this relationship. The purpose of this study was to examine the role of attitude towards healthful foods, in combination with attitude towards inexpensive and convenient foods, in predicting diet quality.

Subjects/Methods: This was a secondary data analysis of the Seattle Obesity Study I (SOS I), a cross-sectional study of a representative sample of 2,001 male and female adult residents of King County, WA, conducted from 2008-2009. Detailed self-reported data on socio-demographic and attitude variables were collected via telephone survey. Dietary data was obtained using Food Frequency Questionnaires (FFQ). Diet quality outcome measures were Healthy Eating Index (HEI), as well as self-reported measure of meeting USDA recommended 5-A-Day servings of fruits and vegetables.

Results: Positive attitudes towards the importance of food health were associated with higher total HEI scores, HEI2 (non-juice fruit) scores, HEI3 (vegetable) scores and proportion meeting 5-A-Day recommendations. Positive attitudes towards the importance of healthful food were associated with higher diet quality scores when inexpensive food was important versus when it

was not. Positive attitudes towards the importance of healthful food were associated with mixed diet quality outcomes when convenient food was important versus when it was not.

Conclusion: Food-related attitudes across socioeconomic strata play a significant role in determining diet quality. However, food-related attitudes do not work in isolation. Further research is needed to fully understand the role of various attitude variables in combination with each other in explaining socioeconomic disparities in diets and health.

Introduction

There are multiple factors that affect our food buying decisions and food purchasing behaviors. This in turn affects diet quality and ultimately health. Walking into any grocery store illustrates the plethora of options one has when shopping for food. Socioeconomic disparities in food purchasing behaviors, diet quality and health are already well established.^{1,2} Lower socioeconomic status (SES), primarily measured using lower education and/ or lower income has been consistently linked with poor food purchasing behaviors and poor diet quality.³⁻⁶ These associations have been consistently observed irrespective of the measure of diet quality used, ranging from overall measures of diet quality such as Healthy Eating Index (HEI), energy density and nutrient density, to specific nutrient intakes.^{4,7,8} Poor diet quality has in turn been linked to poor health outcomes, including obesity, leading to chronic illness such as diabetes and heart disease.^{9,10} The evidence consistently supports the link from low SES to poor diet quality and health. Many past studies have delved into underlying factors or mechanisms that may explain disparities in diets and health. Poor nutrition knowledge or awareness has been studied as one of the factors.⁷ Lower SES tend to have poor nutrient knowledge and awareness, which may lead to wrong food choices and in turn poor diet quality. Economic barriers have been proposed as another factor.⁴ Nutrient rich foods such as fruits and vegetables tend to be more expensive than energy dense foods rich in added fats and sugars.^{4,11,12} The role of psychosocial factors has been proposed as another mechanism.¹³⁻¹⁵ Perceived importance of eating healthy foods has been linked with higher diet quality, while the perceived barrier of food price was established as another factor in explaining poor diets among lower SES.¹⁶

However, these attitudes do not exist in isolation; a person holds many attitudes that may change or shift priority depending on the situation. For example even if healthy food is a priority for a person there may be a barrier around cost and convenience that prevent health from being

emphasized. It is therefore important to examine how the presence of multiple attitude variables influences diet quality.²⁰ To date, the literature mostly addresses the absolute role of food-related attitudes in relation to food purchasing behaviors and diet quality.^{14,21,22} There is little research on the important dynamic interplay of attitudes that has been developed in other fields.^{3,13,15,18,19} To our knowledge, there has only been one study to date that has looked at the relative role of different attitudes in relation to diet quality and SES.²³ Most studies have looked at the effect of an attitudinal variable in isolation or the mediating effect of an attitude.^{4,16,22} Kontinnen et al. took this analysis one step further by comparing the mediation effects of both the absolute and the relative role of different attitude variables in the relationship between SES and diet quality.²³ This is a technique that has been used previously in personal values research, and translates well to this situation.²⁴ Considering the complex dynamics behind food choice, some factors and attitudes may have more emphasis in the process than others, especially for individuals of varying SES.^{19,23,24} For Kontinnen et al., the priority that individual attitudes play in food choice decision, as opposed to the absolute effects of each single attitude on its own, play an important role in explaining the existing SES disparities in diet quality.²³ This suggests that perhaps the interaction of these factors contributes to differences in diet quality.

The current analysis has important implications for understanding how and why food-purchasing decisions are made. Previous research has looked at attitudes in isolation or as mediators in the relationship between SES and diet quality. If attitudes do interact with one another, placing more importance on one attitude variable over the others may result in better diet quality, even when SES is taken into account.²¹ We will explore how the predictive ability of a single attitude variable (health) changes when other attitude variables are added to the relationship, after adjusting for SES. These results could hold implications for future research on

factors influencing diet quality. Attitudes towards food may change depending on the presence of other attitudes at the time of the decision. For example, a person may consider the health of food to be very important. However, if they are also concerned about a budget, then they must weigh the health of the food against their concerns about cost before making a decision. In this context, the balancing of these two factors may result in different diet quality outcomes than if only one attitude is taken into account. Additionally, it may implicate specific areas for public health practitioners and nutritionists to focus on when trying to change food purchasing behaviors to improve diet quality.¹⁸ In one study using tailored education on health behaviors as an intervention succeeded in changing attitudes and self-efficacy around health behaviors and resulted in increased fruit and vegetable consumption.²⁵ Other research has advocated that targeting attitudes at specific stages of change can influence barriers to fruit and vegetable consumption.²⁶ By knowing which factors hold more weight in the decision-making process, strategies to address those values can be promoted as ways to increase diet quality. Changing the priority of influential attitude variables could help change diet quality across varying levels of SES.

The overall goal is to examine the role of the three food-related attitudes in association with diet quality among adults in Seattle-King County, WA. Previous research has cited the role of three important factors in food choice decisions: health, cost and convenience.^{14,15,18} The purpose of the present study was to examine the role of attitudes towards healthy foods, in isolation as well as in combination with other attitude variables (towards inexpensive food and convenient food), in relation to diet quality.

Specific Aims

The specific aims were as follows:

1. To test the absolute role of attitude towards healthy foods in relation to multiple measures of diet quality, before and after taking key socioeconomic (income and education) and demographic variables (age, gender, race/ethnicity, household size) into account.
2. To examine whether the observed associations between attitudes towards healthy foods and diet quality differ among those with positive attitudes towards inexpensive foods versus those who did not.
3. To examine whether the observed associations between attitudes towards healthy foods and diet quality differ among those with positive attitudes towards convenience foods versus those who did not.

Materials and Methods

The present study involves secondary data analyses of the Seattle Obesity Study I (SOS I). SOS I was a population based study based on a representative sample of 2,001 male and female adult residents of King County, WA. A stratified random sampling scheme was used to ensure adequate representation of lower income and minorities. Detailed information on study protocols and methods has already been published.^{4,27} The following section will describe the methods, relevant to this study.

A pre-notification letter was mailed out to every potential respondent in the sampling frame to alert them about the study. Each household was contacted over the telephone and an adult member of the household was randomly selected. After screening for eligibility, a 20-minute telephone survey was administered. The purpose of this survey was to collect self-

reported data on food shopping and eating behaviors, food-related attitudes, socio-demographic variables and health outcomes.

An additional dietary tool, Food Frequency Questionnaire (FFQ) by Fred Hutchinson Cancer Research Center (FHCRC) was also administered to every respondent to collect data on usual dietary intakes. Participants were asked to record the frequency of consumption along with portion size for 152 foods and beverages. Completed and quality checked FFQs were sent to FHCRC for nutrient composition analyses.^{8,28,29} The majority of the respondents agreed to complete the FFQ (95% agreement rate) and completed FFQs were obtained for 69% (n = 1318) of the sample. Of these, questionnaires with missing data and those with extreme energy intakes (<500 or >5000kca/d) were excluded, leaving a sample of 1266 respondents (804 women and 462 men) for analysis. No significant differences were observed across persons who completed the FFQ completes versus those who did not complete. All the study protocols were approved by the IRB at the University of Washington. The present study utilized data from both the telephone survey and FFQ for analyses. The final analytical sample consisted of 1291 respondents (821 women and 470 men).

Measures of diet quality

The main outcome variable in the present study was the Healthy Eating Index (HEI), a federal measure of overall diet quality.³⁰ HEI consists of ten components measuring different aspects of dietary intake. A total is derived from this detailed food intake and nutrient information, resulting in a score from 0-100 that measures diet quality in conforming to federal dietary guides. The higher the HEI score, the better the diet quality. This variable has been used as the primary outcome variable in similar studies in the past.^{7,31,32} Due to the use of fruit and vegetable intake as a common indicator of healthy diet quality, we used two components of HEI

as additional individual outcome variables of interest. HEI 2 indicating total non-juice fruit intake and HEI 3 indicating total vegetable intake. In addition, proportion of respondents conforming to 5-A-Day (five servings per day) was used as binary outcome variable of interest. The USDA (United States Department of Agriculture) recommends the consumption of at least 5 servings of fruits and vegetables per day.³³ This measure has been used in previous research as an indicator of meeting healthy diet suggestions, and may be influenced by attitudes.^{7,34} This was scored by self-reported data on a binary scale where participants either reported at least meeting the minimum five servings a day of fruits and vegetables (FVAday) or failing to meet this minimum recommendation.

Demographic and Socioeconomic Factors

Demographic information was collected on all participants during the telephone survey. Self-reported sex, age, race/ethnicity and household size were obtained. Socioeconomic status was measured by income and education. For the purpose of analyses, self-reported education level was divided into two categories based on distribution (*some college or below, and college graduate*). Household income was measured from less than \$10,000/year to over \$100,000/year, then divided into three income levels for analyses (<\$50,000, \$50-99,999, \$100,000+).

Attitude Variables

The exposure variables of interest for the present study were three attitudinal measures, with a primary focus on attitudes towards the health of food. Participants were asked to rate the importance of different food-related attitude variables on a 5-point likert scale from (1) strongly agree to (5) strongly disagree. The three attitude questions were: “It is important to me that foods I usually eat are healthy”, “It is important to me that foods I usually eat are inexpensive”,

“It is important to me that foods I usually eat are easy to purchase, cook and clean up”. These three attitudes were chosen based on previous research on attitudes about food.

For the purpose of analyses, the attitude variables were dichotomized into “strongly agree” versus the rest of responses (“other”), based on dichotomizing the distribution of the primary attitude, health into an approximately even number of responses. The cost (“cheap”) and convenience (“quick”) variables were then dichotomized into the same categories for the sake of consistency.

Statistical Analyses

A series of bivariate and multivariate regression analyses were performed to examine associations among diet quality measures, attitudes and socio-demographic variables. First, bivariate analyses were used to examine the socio-demographic profile of respondents who strongly agree versus did not strongly agree with the importance of three food-related attitude variables. Second, distribution of each diet quality measure by each attitude variable and key socio-demographic variables was examined. The diet quality measures were total HEI score, the two HEI component outcome scores (HEI2 – total non-juice fruit intake and HEI3- total vegetable intake), as well as proportion meeting 5-A-Day recommendation. The attitude variables were those who strongly agreed with the statement that it is important that food is healthy, versus those who answered with any other response below that. The same distinctions were made for the cost attitude and the convenience attitude. Third, multivariate linear and logistic regression analyses were used to examine the association of each of the diet quality measures with the two different attitudes about the health of food. Linear regression was used for continuous outcome variables: total HEI score and the two components. Logistic regression was used for the binary outcome variable: 5-A-Day. Each model was adjusted for key SES and

demographic variables (income and education, age, sex, race/ethnicity and household size). Robust regression was used to limit the influence of potential outliers. Finally, multivariate linear and logistic regressions were used to examine the differences in the multiple diet quality outcomes for a positive attitude toward the importance of healthy food, by agreement with the importance of cost and agreement with the importance of convenience. A significance level of $\alpha = .05$ was used for all statistical tests. All statistical analyses were conducted in STATA version IC 11.³⁵

Results

Participant characteristics

The sample distribution is presented in **Table 1**. Mean age of the sample was 56.7 (14.5) years, with over half reporting as female (63.6%) and about 85% self-reporting race/ethnicity as “White” (**Table 1b**). Income was evenly distributed among the three categories. More than half of the sample (62%) reported an annual household income of \geq \$50,000, close to the median annual income in WA State from 2007 to 2011.³⁶ Over 57% of participants were college graduates, compared to the 41% of Washington State residents who were college graduates as of 2010.³⁷ Over half (61.4%) of respondents replied that they strongly agreed that it is important to them that food is healthy (**Table 1b**). To be consistent, the other two attitude variables were dichotomized into strongly agree versus all other responses, resulting in an uneven distribution. About 13.9% of respondents strongly agreed that food being cheap was important while 23.2% strongly agreed that convenient food was important (**Table 1b**).

In **Table 2**, the differences in attitude responses by socio-demographic variables are listed. Females tended to strongly agree more than men on the importance of health (69.3% strongly agreed versus 54.4% other) and cost (71.4% strongly agreed versus 62.3% other), while

attitudes towards convenience were evenly distributed. The attitudinal responses were fairly evenly distributed between the two racial/ethnic categories. There were differences in the cost attitude variable among the three income categories, with those who make <\$50,000 annually making up 69.5% of those who strongly agree that it is important that food is cheap and while only making up 33.1% of the other responses. On the other end, those who make \$100,000+ annually make up only 7.8% of the respondents who strongly agree with the importance of food being cheap, but are 29.4% of all other responses. The biggest differences in attitude responses between college graduates and lower education levels were for attitudes about convenience with a greater proportion of non-college graduates strongly agreeing with the importance of the convenience of food (54.4%) than any other response (39.4%)

Distribution of each diet quality measure by key socio-demographic variables is presented in **Table 3a**. The mean HEI total score for all participants was 68.1 (SD=10.0). This score differed significantly by various socio-demographic variables. The mean HEI score was significantly higher among women (71.6 vs. 66.3, for women and men respectively), among higher income (70.5 for highest income vs. 69.0 for lowest income) and higher education (71.0 for college graduates vs. 68.2 for less than college grads). Similar associations were observed with other diet quality measures. The average total non-juice fruit intake (HEI2) score in the sample was 4.2 (SD=1.4), or about a 0.34 cup equivalent of non-juice fruit per 1000 kcal, out of a maximum recommended ≥ 0.40 cups per kcal. It was significantly higher among women, higher income and higher education groups. The total vegetable intake (HEI3) score in the sample was 4.3 (SD=1.0), or a 0.95 cup equivalent per 1000 kcal out of a maximum recommended ≥ 1.1 cups per 1000 kcal. It differed significantly by gender, income and education. In terms of 5-A-Day, only 30% of the sample met this recommendation. Similar to

other diet quality measures, this proportion was significantly higher among women (35% vs. 24% among men) and higher education (35% for college grads vs. 25% for less than college grads).

Table 3b also shows the distribution of diet quality measures by each of the redefined attitudinal measures. Strongly agreeing with the importance of healthful foods was significantly associated with a higher diet quality than those who did not strongly agree on this attitude for total HEI score (71.9 versus 66.4), as well as HEI2 score (4.4 versus 3.8), HEI3 score (4.5 versus 4.0) and proportion meeting 5-A-Day fruit and vegetable consumption (38.6% versus 19.0%). Strongly agreeing on the importance of inexpensive foods did not differ significantly in mean scores of total HEI, HEI2, HEI3 or the proportion meeting 5-A-Day fruit and vegetable consumption. Those who strongly agreed on the importance of food being convenient had significantly lower diet quality scores compared to those who answered anything else for total HEI score (67.3 versus 70.5), HEI2 score (3.9 versus 4.3) and HEI3 score (4.1 versus 4.4). The same pattern was true for proportion meeting 5-A-Day fruit and vegetable consumption, with 21.9% of those who strongly agree meeting the recommendation versus 33.8% who did not strongly agree with the importance of food being quick and convenient.

Multivariate Analyses of Attitude Variables and Diet Quality

Table 4 shows the association between attitudes about the health of food in relation to the four different diet quality outcomes (mean total HEI score, mean HEI2 score, mean HEI3 score and odds of meeting the recommended five servings a day of fruits and vegetables). For each dietary quality outcome there are two models listed. Model 1 is the regression of the diet quality outcome on attitude towards healthful foods as well as the regressions of the diet quality outcomes on key SES factors (income and education) adjusted for age, gender, race/ethnicity and

household size. Model 2 is the regression of the diet quality outcomes on both attitude towards health and the SES factors, adjusted for the same key covariates. In **Table 4a**, strongly agreeing that healthful food is important was significantly associated with an increased total HEI dietary quality score in both models ($\beta=4.97$, $p<0.001$; $\beta =4.62$, $p<0.001$). The same is true for all three other dietary quality indicators in **Tables 4b-d**. Being a college graduate was also significantly associated with an increased total HEI score in both models ($\beta =2.57$, $p<0.001$; $\beta =2.19$, $p<0.001$), as well as for HEI2, HEI3 and odds of meeting 5-A-Day intake (**Tables 4a-d**). Income level was associated with a significantly higher score for the fully adjusted highest income category for total HEI ($\beta =1.56$, $p<0.05$) for both income categories for HEI2 ($\beta =.21$, $p<0.05$; $\beta =.33$, $p<0.05$) and for the middle income category for HEI3 ($\beta =.17$, $p<0.05$) (**Tables 4a-c**). For the odds of meeting 5-A-Day recommendations, there was actually a significantly lower proportion among those with an annual income of \$100,000+ ($OR=.56$, $p<0.05$) (**Table 4d**).

Table 5 shows the same two models as above, looking only at positive attitudes towards the importance of healthful food. Each table contains the regression of the diet quality outcome on health attitude and key SES factors separately in Model 1 and combined in Model 2, for both those who strongly agree that inexpensive food is important and those who do not strongly agree that inexpensive food is important (all other responses). In **Table 5a**, when respondents strongly agreed on the importance of healthful food, but not on the importance of inexpensive food there was an associated significant increase in HEI score ($\beta =4.02$, $p<0.001$), after adjusting for SES. When respondents strongly agreed on the importance of both health and cost, there was an even higher increase in total HEI score ($\beta =9.37$, $p<0.001$). The same is true for HEI2 (strongly agree $\beta =.95$, $p<.05$, other $\beta =.54$, $p<0.001$; **Table 5b**), HEI3 (strongly agree $\beta=.53$, $p<0.05$, $\beta =.32$,

p<0.001; **Table 5c**) and 5-A-Day scores (strongly agree OR=3.06, p<0.05, OR=2.24, p<0.001; **Table 5d**).

Table 6 again shows the same two models as above, focusing on positive attitudes towards the importance of healthful food. Each table contains the regression of the diet quality outcome on health attitude and key SES factors separately in Model 1 and combined in Model 2, for those who strongly agree that the convenience of food is important (quick) and then those who do not strongly agree that the convenience of food is important (all other responses). In **Table 6a** when respondents did not strongly agree with the importance of the convenience of food, strongly agreeing with the importance of health still significantly increased total HEI ($\beta = 4.56$, p<0.001). When strongly agreeing with the importance of both health and convenience, there was still a significant increase in total HEI score, but slightly less so ($\beta = 4.18$, p<0.05). The same pattern was true for HEI2 scores ($\beta = .58$, p<0.001; $\beta = .55$, p<0.05) and HEI3 scores ($\beta = .30$, p<0.001; $\beta = .32$, p<0.05), where the differing attitudes on convenience did not greatly impact diet quality (**Table 6b and 6c**). For the 5-A-Day outcome, strongly agreeing on both attitudinal factors resulted in a higher proportion meeting fruit and vegetable intake (OR=3.71, p<0.05) than strongly agreeing on the importance of health alone (OR=2.04, p<0.001) (**Table 6d**).

Discussion

In this analysis, we explored whether attitudes towards the importance of healthful food, had an absolute effect on diet quality, after accounting for differences in SES among Seattle-King County, WA adults. Our results show that among this population, having a strong positive attitude toward the importance of healthful food was associated with an absolute increase in diet

quality, across all four measured outcomes. Furthermore, we aimed to see if that relationship with diet quality changed when other food-related attitudes about the importance of inexpensive foods and the importance of convenient foods were included in the decision. Our results showed that there were changes in the relationship between attitudes about healthful food and diet quality when additional attitudes were accounted for. Among the population that strongly agreed on the importance of healthful food, also strongly agreeing on the importance of inexpensive foods was associated with an increased diet quality outcome compared to those who did not care as much about food cost. Alternatively, among those who strongly agreed on the importance of healthful food, having strong positive attitudes about the importance of convenient foods was associated with a lower overall total diet quality score (total HEI score), while higher on a different measure than those who did not as strongly agree with the importance of food convenience.

Previous studies have found a link between attitudes towards food and food selection.¹³⁻¹⁵ Other research has linked SES factors and diet quality outcomes.³⁻⁵ To date, only one other study we are aware of has looked at the relative role of attitude factors in mediating this established relationship between SES and diet quality.²³ This present study is unique in looking at the potential ways in which attitudes about food can be weighed against one another, resulting in varying diet quality outcomes, after accounting for SES. By first establishing the absolute role that attitudes towards food health play in predicting diet quality outcomes, we have replicated what has been shown in previous studies.^{14,23} By then introducing a second attitude variable into the relationship, the present study examined how the initial relationship changed when these two attitudes were considered together. From our analysis, it appears that adding a second food-related attitude into the relationship does result in different diet quality outcomes.

The results regarding the absolute role that attitudes towards healthy food play in diet quality outcomes are unsurprising. Greater care about the health of food was associated with higher diet qualities. In general, higher income and education were also associated with higher diet quality outcomes. When attitudes about convenience were also considered, overall diet quality was better when convenience was not as important. Consumption of non-juice fruits and vegetable consumption was about the same, regardless of attitudes about convenience. The 5-A-Day measure of fruit and vegetable intake differed, indicating a need for more research into these conflicting results.

One surprising result was how adding attitudes about the importance of inexpensive food changed the relationship between attitudes towards food health and diet quality. When there was a strong, positive attitude about the importance that food is healthy as well as a strong, positive attitude towards the importance that food is inexpensive, diet quality outcomes were higher than for those who felt strongly about health but not price. One potential explanation is that the people who have very strong attitudes about food in general are thinking more about what they purchase, resulting in higher diet quality due to more care and consideration. If this result can be replicated, this group of positive deviants would be important to examine in greater depth, as further details could provide more insight into how these results came about. If it is possible to have a better diet quality outcome while caring strongly about food health and price at the same time, there is an implication that diet quality can be improved across levels of SES. An in-depth look at their nutritional intake, shopping habits, food knowledge, etc. would be crucial to addressing the health disparities raised in the introduction. Unfortunately, this study no longer has access to the respondents, but future research could address this level of detail.

The two secondary attitude variables examined, the importance of inexpensive food and the importance of convenient food, can be seen as two different types of costs. In economics, when the term cost is used, it can refer to more than price, including time spent on an activity.³⁸ In this context, attitudes towards convenience can also be considered attitudes about the cost of time spent purchasing and preparing food. In this population, it appears that attitudes about price cost played a different role than attitudes about the cost of a person's time, or convenience. Helping people to understand the price of convenience could change its relationship with diet quality. This may be one area to focus attitude change, to better model it after the relationship seen with monetary price in our results. Ideally, reframing attitudes in this way could lead to an increase in diet quality for both secondary attitudes.

This study had some potential limitations. First, this analysis was performed using cross-sectional data, so the causation of any associations found cannot be assumed. Secondly, this sample was not demographically representative of the general population of Seattle- King County, WA. This sample, in general, had a higher income, was older and more educated than the general population, with a greater proportion of female respondents than the county's true population. Additionally, as this was a secondary data analysis the attitude variable questions were used as reported. The order of the three questions asked was never varied, meaning the participants were always asked to first think about the importance of cost, then the importance of health then the importance of convenience. This could lead to biases due to the order of presentation. This type of research question could also lead to a social desirability bias in answering, which could possibly explain the distribution of people responding positively toward the importance of food health. Most people know that they should consider the health of food, but this may not truly be their attitude. A more nuanced line of questioning could lead to a more

accurate picture of people's true attitudes. Despite this potential limitation, we still found significant results. With a greater distinction among attitudes, the results would only be stronger. Additionally, much of the research on attitudes around food choice suggest many more than the three attitude variables that were chosen for this data collection.^{13,14,18} Future studies using other attitudes may provide different outcomes in terms of diet quality.

However, the present findings still have implications for future research. Knowing that while most people considered the health of food to be important, this relationship may change when other food-related attitudes, such as cost and convenience are included, has importance for public health promotion and public health practitioners.^{25,26} This finding remains after accounting for SES, indicating that there may be certain attitudes that can be shaped to improve diet quality, across different levels of SES. Attitudes may impact more than just diet quality, but other factors such as the stores where people shop and how they are shopping.¹⁷ Appendix A has a distribution of food purchasing attitudes by primary grocery store, as a potential area of interest for future research regarding attitudes and diet quality.

By understanding how different food-related attitudes together impact diet quality, there is the opportunity to focus education and promotion on encouraging those attitudes that together improve diet quality. At the same time, it is important to recognize those attitudes that, when combined, are associated with a decrease in diet quality in order to mitigate that negative relationship. When making food-purchasing decisions, people are faced with weighing all of their attitudes about food; knowing which are most important regardless of the presence of other attitudes will have the greatest impact on increasing diet quality outcomes interventions around food shopping.³⁹ Poor diet quality and the resulting poor health outcomes continue to be a widespread problem in the United States.⁴⁰ Further investigation looking at how to balance the

myriad of other attitudes that exist when making food purchasing decisions will contribute to the knowledge base.¹⁴ By creating strategies that work around these attitudinal barriers to healthy eating, diet quality and health outcomes can be improved across the population.

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Table 1a. Sample distribution of key socio-demographic and attitude variables

	n	%
All (1291)		
Age	1,274	
Mean (SD), range	56.7 (14.5)	
Sex		
Male	470	36.4
Female	821	63.6
Race/Ethnicity		
White	1,085	84.9
All Others	193	15.1
Income		
<\$50,000	433	38.1
\$50,000-99,999	406	35.7
\$100,000+	299	26.3
Education		
Some college or below	551	42.9
College graduate	734	57.1
Attitudes		
It is important to me that foods I eat are <i>healthy</i>...		
Strongly Disagree	5	0.4
Disagree	29	2.3
Neutral	33	2.6
Agree	431	33.4
Strongly Agree	792	61.4
It is important to me that foods I eat are <i>inexpensive</i>...		
Strongly Disagree	123	9.6
Disagree	298	23.3
Neutral	210	16.4
Agree	472	36.9
Strongly Agree	178	13.9
It is important to me that foods I eat are <i>convenient</i> to prepare...		
Strongly Disagree	121	9.4
Disagree	240	18.7
Neutral	202	15.7
Agree	422	32.9
Strongly Agree	298	23.2

Table 1b. Distribution of redefined attitude variables

Attitude variables redefined into “Strongly Agree” versus “All Other Responses”

	<u>n</u>	<u>%</u>
It is important to me that foods I eat are <i>healthy</i>...		
Other	498	38.6
Strongly Agree	792	61.4
It is important to me that foods I eat are <i>inexpensive</i>...		
Other	1103	86.1
Strongly Agree	178	13.9
It is important to me that foods I eat are <i>convenient</i>...		
Other	985	76.8
Strongly Agree	298	23.2

Table 2: Socio-demographic profile of respondents who do or do not strongly agree with each attitude variable

	HEALTHY				INEXPENSIVE				CONVENIENT			
	Strongly Agree		Other		Strongly Agree		Other		Strongly Agree		Other	
	n	%	n	%	n	%	n	%	n	%	n	%
All	792		498		178		1103		298		985	
Sex												
Male	243	(30.7)	227	(45.6)	51	(28.7)	416	(37.7)	100	(33.6)	369	(37.5)
Female	549	(69.3)	271	(54.4)	127	(71.4)	687	(62.3)	198	(66.4)	616	(62.5)
Race/Ethnicity												
White	669	(85.2)	415	(84.3)	138	(78.0)	942	(86.3)	241	(81.4)	839	(86.1)
All Others	116	(14.8)	77	(15.7)	39	(22.0)	150	(13.7)	55	(18.6)	136	(13.9)
Income												
<\$50,000	273	(39.1)	160	(36.5)	107	(69.5)	323	(33.1)	136	(51.7)	294	(33.8)
\$50,000-99,999	249	(35.6)	157	(35.8)	35	(22.7)	367	(37.6)	82	(31.2)	322	(37.0)
\$100,000+	177	(25.3)	121	(27.6)	12	(7.8)	286	(29.4)	45	(17.1)	254	(29.2)
Education												
Some college or below	318	(40.3)	233	(47.2)	94	(52.8)	453	(41.3)	162	(54.4)	386	(39.4)
College graduate	472	(59.7)	261	(52.8)	84	(47.2)	645	(58.7)	136	(45.6)	594	(60.6)

Table 3a: Bivariate analyses to examine the association of each of the diet quality outcome variables with key socio-demographic variables

	Mean HEI total (SD)	Mean total non- juice fruit intake (SD)	Mean total vegetable intake (SD)meeting	Proportion 5 fruits& vegetables/day
All (1291)	69.8 (10.0)	4.2 (1.4)	4.3 (1.0)	31.0%
Sex				
Male	66.3 (10.5)	3.8 (1.5)	4.1 (1.1)	24.3%
Female	71.6 (9.3)**	4.4 (1.2)**	4.4 (.9)**	35.0% **
Race/Ethnicity				
White	69.7 (10.1)	4.2 (1.3)	4.3 (1.0)	30.8%
All Others	70.1 (9.5)	4.1 (1.3)	4.2 (1.0)	31.0%
Income				
<\$50,000	69.0 (10.5)	4.0 (1.5)	4.2 (1.1)	33.6%
\$50,000-99,999	69.8 (10.2)	4.2 (1.3)**	4.4 (.9)*	32.8%
\$100,000+	70.5 (8.8)*	4.4 (1.2)*	4.3 (.9)	25.5% *
Education				
Some college or below	68.2 (10.8)	3.9 (1.5)	4.1 (1.1)	25.2%
College graduate	71.0 (9.2)**	4.8 (.6)**	4.4 (.9)**	35.3% **

*indicates a p-value of <0.05, **indicates a p-value of <0.001

Table 3b: Bivariate analyses to examine the association of each of the diet quality outcome variables with attitudinal measures

	Mean HEI total (SD)	Mean total non-juice fruit intake (SD)	Mean total vegetable intake (SD)	Proportion meeting 5 fruits & vegetables/day
ATTITUDES				
Healthy				
Other	66.4 (10.2)	3.8 (1.5)	4.0 (1.1)	19.0%
Strongly Agree	71.9 (9.3)**	4.4 (1.2)**	4.5 (.9)**	38.6% **
Inexpensive				
Other	69.8 (9.8)	4.2 (1.3)	4.3 (1.0)	30.4%
Strongly Agree	69.7 (11.3)	4.1 (1.5)	4.2 (1.1)	34.9%
Convenient				
Other	70.5 (9.5)	4.3 (1.3)	4.4 (0.9)	33.8%
Strongly Agree	67.3 (11.2)**	3.9 (1.5)**	4.1 (1.1)**	21.9% **

*indicates a p-value of <0.05, ** indicates a p-value of <0.001

Table 4a. Multivariate linear regression to examine the association of total HEI 2005 score with attitudes towards healthful food and key socioeconomic variables

	Model 1^a β (95% CI)	Model 2^b β (95% CI)
Healthy		
Other	Ref.	Ref.
Strongly Agree	4.97 (3.87, 6.07) **	4.62 (3.46, 5.79)**
Income		
<\$50,000	Ref.	Ref.
\$50,000-99,999	.83 (-.58, 2.25)	.90 (-.46, 2.26)
\$100,000+	1.35 (-.13, 2.84)	1.56 (.12, 3.01)*
Education		
Some college or below	Ref.	Ref.
College graduate	2.57 (1.33, 4.80)**	2.19 (.98, 3.40)**

^aModel 1: multivariate regression of HEI2005 on attitudes towards health and SES separately

^bModel 2: multivariate regression of HEI2005 on attitudes towards health, with SES included

all analyses adjusted for age, sex, race/ethnicity, household size

*indicates a p-value of <0.05, ** indicates a p-value of <0.001

Table 4b. Multivariate linear regression to examine the association of non-juice fruit intake (HEI2 score) with attitudes towards healthful food and key socioeconomic variables

	Model 1^a β (95% CI)	Model 2^b β (95% CI)
Healthy		
Other	Ref.	Ref.
Strongly Agree	.59 (.43, .74)**	.58 (.41, .74)**
Income		
<\$50,000	Ref.	Ref.
\$50,000-99,999	.20 (.01, .39)*	.21 (.02, .39)*
\$100,000+	.31 (.10, .52)*	.33 (.13, .39)*
Education		
Some college or below	Ref.	Ref.
College graduate	.33 (.16, .49)**	.28 (.12, .54)*

^aModel 1: multivariate regression of HEI2 on attitudes towards health and SES separately

^bModel 2: multivariate regression of HEI2 on attitudes towards health, with SES included

all analyses adjusted for age, sex, race/ethnicity, household size

*indicates a p-value of <0.05, ** indicates a p-value of <0.001

Table 4c. Multivariate linear regression to examine the association of vegetable intake (HEI3 score) with attitudes towards healthful food and key socioeconomic variables

	Model 1^a β (95% CI)	Model 2^b β (95% CI)
Healthy		
Other	Ref.	Ref.
Strongly Agree	.40 (.29, .52)**	.33 (.21, .45)**
Income		
<\$50,000	Ref.	Ref.
\$50,000-99,999	.17 (.03, .31)*	.17 (.04, .31)*
\$100,000+	.03 (-.12, .19)	.05 (-.10, .20)
Education		
Some college or below	Ref.	Ref.
College graduate	.27 (.15, .40)**	.25 (.13, .37)**

^aModel 1: multivariate regression of HEI3 on attitudes towards health and SES separately

^bModel 2: multivariate regression of HEI3 on attitudes towards health, with SES included

all analyses adjusted for age, sex, race/ethnicity, household size

*indicates a p-value of <0.05, ** indicates a p-value of <0.001

Table 4d. Multivariate logistic regression to examine the association of proportion meeting 5 fruits & vegetables/day with attitudes towards healthful food and key socioeconomic variables

	Model 1^a β (95% CI)	Model 2^b β (95% CI)
Healthy		
Other	Ref.	Ref.
Strongly Agree	2.58 (1.95, 3.40)**	2.33 (1.73, 3.12)**
Income		
<\$50,000	Ref.	Ref.
\$50,000-99,999	.88 (.64, 1.20)	.89 (.65, 1.21)
\$100,000+	.55 (.38, .81)*	.56 (.37, .82)*
Education		
Some college or below	Ref.	Ref.
College graduate	1.94 (1.45, 2.60)**	1.86 (1.38, 2.49)**

^aModel 1: multivariate regression of five-a-day intake on attitudes towards health and SES separately

^bModel 2: multivariate regression of five-a-day intake on attitudes towards health, with SES included

all analyses adjusted for age, sex, race/ethnicity, household size

*indicates a p-value of <0.05, ** indicates a p-value of <0.001

Table 5a. Multivariate linear regressions to examine the association of total HEI 2005 score with attitudes towards healthful food and key socioeconomic variables by attitudes towards inexpensive food

	Model 1^a β (95% CI)	Model 2^b β (95% CI)
<u>Do not strongly agree with the importance of inexpensive food</u>		
Healthy		
Other	Ref.	Ref.
Strongly Agree	4.50 (3.35, 5.65)**	4.02 (2.80, 5.24)**
Income		
<\$50,000	Ref.	Ref.
\$50,000-99,999	.32 (-1.20, 1.84)	.29 (-1.19, 1.76)
\$100,000+	.85 (-.74, 2.43)	.93 (-.62, 2.48)
Education		
Some college or below	Ref.	Ref.
College graduate	2.28 (.97, 3.60)*	1.94 (.64, 3.25)*
<u>Strongly agree with the importance of inexpensive food</u>		
Healthy		
Other	Ref.	Ref.
Strongly Agree	8.49 (4.65, 12.32)**	9.37 (5.29, 13.44)**
Income		
<\$50,000	Ref.	Ref.
\$50,000-99,999	3.75 (-.45, 7.96)	3.76 (.13, 7.40)*
\$100,000+	5.93 (1.37, 10.50)*	5.88 (1.07, 10.70)*
Education		
Some college or below	Ref.	Ref.
College graduate	3.89 (.21, 7.57)*	3.73 (.50, 6.97)*

^aModel 1: multivariate regression of HEI2005 on attitudes towards health and SES separately

^bModel 2: multivariate regression of HEI2005 on attitudes towards health, with SES included

all analyses adjusted for age, sex, race/ethnicity, household size

*indicates a p-value of <0.05, ** indicates a p-value of <0.001

Table 5b. Multivariate linear regressions to examine the association of non-juice fruit intake (HEI2 score) with attitudes towards healthful food and key socioeconomic variables by attitudes towards inexpensive food

	Model 1^a β (95% CI)	Model 2^b β (95% CI)
<u>Do not strongly agree with the importance of inexpensive food</u>		
Healthy		
Other	Ref.	Ref.
Strongly Agree	.58 (.42, .74)**	.54 (.37, .72)**
Income		
<\$50,000	Ref.	Ref.
\$50,000-99,999	.07 (-.13, .28)	.07 (-.13, .27)
\$100,000+	.21 (-.01, .43)	.22 (-.00, .44)
Education		
Some college or below	Ref.	Ref.
College graduate	.33 (.16, .51)**	.29 (.11, .46)*
<u>Strongly agree with the importance of inexpensive food</u>		
Healthy		
Other	Ref.	Ref.
Strongly Agree	.77 (.22, 1.29)*	.95 (.41, 1.50)*
Income		
<\$50,000	Ref.	Ref.
\$50,000-99,999	.94 (.45, 1.42)**	.94 (.47, 1.41)**
\$100,000+	.94 (.36, 1.52)*	.93 (.25, 1.61)*
Education		
Some college or below	Ref.	Ref.
College graduate	.26 (-.23, .76)	.25 (-.22, .72)

^aModel 1: multivariate regression of HEI2 on attitudes towards health and SES separately

^bModel 2: multivariate regression of HEI2 on attitudes towards health, with SES included
all analyses adjusted for age, sex, race/ethnicity, household size

*indicates a p-value of <0.05, ** indicates a p-value of <0.001

Table 5c. Multivariate linear regressions to examine the association of vegetable intake (HEI3 score) with attitudes towards healthful food and key socioeconomic variables by attitudes towards inexpensive food

	Model 1^a β (95% CI)	Model 2^b β (95% CI)
<u>Do not strongly agree with the importance of inexpensive food</u>		
Healthy		
Other	Ref.	Ref.
Strongly Agree	.40 (.27, .52)**	.32 (.19, .44)**
Income		
<\$50,000	Ref.	Ref.
\$50,000-99,999	.15 (-.00, .30)	.15 (-.00, .30)
\$100,000+	.02 (-.15, .19)	.02 (-.14, .19)
Education		
Some college or below	Ref.	Ref.
College graduate	.22 (.09, .35)*	.19 (.07, .32)*
<u>Strongly agree with the importance of inexpensive food</u>		
Healthy		
Other	Ref.	Ref.
Strongly Agree	.53 (.16, .90)*	.53 (.16, .90)*
Income		
<\$50,000	Ref.	Ref.
\$50,000-99,999	.09 (-.33, .51)	.09 (-.31, .49)
\$100,000+	.01 (-.44, .45)	.00 (-.50, .51)
Education		
Some college or below	Ref.	Ref.
College graduate	.63 (.30, .95)**	.62 (.30, .93)**

^aModel 1: multivariate regression of HEI3 on attitudes towards health and SES separately

^bModel 2: multivariate regression of HEI3 on attitudes towards health, with SES included
all analyses adjusted for age, sex, race/ethnicity, household size

*indicates a p-value of <0.05, ** indicates a p-value of <0.001

Table 5d. Multivariate logistic regressions to examine the association of proportion meeting 5 fruits & vegetables/day with attitudes towards healthful food and key socioeconomic variables by attitudes towards inexpensive food

	Model 1^a β (95% CI)	Model 2^b β (95% CI)
<u>Do not strongly agree with the importance of inexpensive food</u>		
Healthy		
Other	Ref.	Ref.
Strongly Agree	2.47 (1.84, 3.33)**	2.24 (1.63, 3.06)**
Income		
<\$50,000	Ref.	Ref.
\$50,000-99,999	.93 (.66, 1.31)	.92 (.65, 1.30)
\$100,000+	.56 (.37, .85)*	.55 (.36, .84)*
Education		
Some college or below	Ref.	Ref.
College graduate	1.90 (1.38, 2.62)**	1.81 (1.31, 2.51)**
<u>Strongly agree with the importance of inexpensive food</u>		
Healthy		
Other	Ref.	Ref.
Strongly Agree	3.30 (1.39, 7.83)*	3.06 (1.23, 7.62)*
Income		
<\$50,000	Ref.	Ref.
\$50,000-99,999	.69 (.29, 1.64)	.68 (.29, 1.63)
\$100,000+	1.05 (.28, 3.91)	1.07 (.26, 4.37)
Education		
Some college or below	Ref.	Ref.
College graduate	1.92 (.94, 3.92)	1.88 (.91, 3.87)

^aModel 1: multivariate regression of five-a-day intake on attitudes towards health and SES separately

^bModel 2: multivariate regression of five-a-day intake on attitudes towards health, with SES included
all analyses adjusted for age, sex, race/ethnicity, household size

*indicates a p-value of <0.05, ** indicates a p-value of <0.001

Table 6a. Multivariate linear regressions to examine the association of total HEI 2005 score with attitudes towards healthful food and key socioeconomic variables by attitudes towards convenient food

	Model 1^a β (95% CI)	Model 2^b β (95% CI)
<u>Do not strongly agree with the importance of convenient food</u>		
Healthy		
Other	Ref.	Ref.
Strongly Agree	4.86 (3.65, 6.08)**	4.56 (3.26, 5.85)**
Income		
<\$50,000	Ref.	Ref.
\$50,000-99,999	1.70 (.11, 3.28)*	1.47 (-.05, 3.00)
\$100,000+	1.81 (.20, 3.42)*	1.93 (.38, 3.48)*
Education		
Some college or below	Ref.	Ref.
College graduate	2.01 (.62, 3.39)*	1.66 (.30, 3.02)*
<u>Strongly agree with the importance of convenient food</u>		
Healthy		
Other	Ref.	Ref.
Strongly Agree	4.77 (2.17, 7.38)**	4.18 (1.28, 7.09)*
Income		
<\$50,000	Ref.	Ref.
\$50,000-99,999	-2.93 (-6.09, .22)	-2.11 (-5.38, 1.16)
\$100,000+	-1.33 (-5.25, 2.57)	-1.01 (-4.87, 2.86)
Education		
Some college or below	Ref.	Ref.
College graduate	3.51 (.87, 6.16)*	3.19 (.59, 5.79)*

^aModel 1: multivariate regression of HEI2005 on attitudes towards health and SES separately

^bModel 2: multivariate regression of HEI2005 on attitudes towards health, with SES included
all analyses adjusted for age, sex, race/ethnicity, household size

*indicates a p-value of <0.05, ** indicates a p-value of <0.001

Table 6b. Multivariate linear regressions to examine the association of non-juice fruit intake (HEI2 score) with attitudes towards healthful food and key socioeconomic variables by attitudes towards convenient food

	Model 1^a β (95% CI)	Model 2^b β (95% CI)
<u>Do not strongly agree with the importance of convenient food</u>		
Healthy		
Other	Ref.	Ref.
Strongly Agree	.58 (.41, .76)**	.58 (.40, .76)**
Income		
<\$50,000	Ref.	Ref.
\$50,000-99,999	.19 (-.02, .40)	.16 (-.04, .37)
\$100,000+	.27 (.05, .49)*	.28 (.07, .50)*
Education		
Some college or below	Ref.	Ref.
College graduate	.23 (.05, .41)*	.19 (.01, .37)*
<u>Strongly agree with the importance of convenient food</u>		
Healthy		
Other	Ref.	Ref.
Strongly Agree	.52 (.15, .89)*	.55 (.15, .94)*
Income		
<\$50,000	Ref.	Ref.
\$50,000-99,999	.07 (-.38, .52)	.18 (-.28, .64)
\$100,000+	.27 (-.30, .84)	.31 (-.26, .88)
Education		
Some college or below	Ref.	Ref.
College graduate	.48 (.10, .86)*	.43 (0.5, .81)*

^aModel 1: multivariate regression of HEI2 on attitudes towards health and SES separately

^bModel 2: multivariate regression of HEI2 on attitudes towards health, with SES included

all analyses adjusted for age, sex, race/ethnicity, household size

*indicates a p-value of <0.05, ** indicates a p-value of <0.001

Table 6c. Multivariate linear regressions to examine the association of vegetable intake (HEI3 score) with attitudes towards healthful food and key socioeconomic variables by attitudes towards convenient food

	Model 1^a β (95% CI)	Model 2^b β (95% CI)
<u>Do not strongly agree with the importance of convenient food</u>		
Healthy		
Other	Ref.	Ref.
Strongly Agree	.38 (.25, .50)**	.30 (.17, .43)**
Income		
<\$50,000	Ref.	Ref.
\$50,000-99,999	.27 (.12, .42)**	.26 (.11, .40)*
\$100,000+	.14 (-.02, .31)	.15 (-.01, .32)
Education		
Some college or below	Ref.	Ref.
College graduate	.19 (.05, .32)*	.16 (.03, .30)*
<u>Strongly agree with the importance of convenient food</u>		
Healthy		
Other	Ref.	Ref.
Strongly Agree	.39 (.11, .66)*	.32 (.03, .60)*
Income		
<\$50,000	Ref.	Ref.
\$50,000-99,999	-.20 (-.53, .12)	-.14 (-.46, .18)
\$100,000+	-.48 (-.90, -.06)*	-.46 (-.87, -.04)*
Education		
Some college or below	Ref.	Ref.
College graduate	.46 (.21, .72)**	.44 (.18, .69)*

^aModel 1: multivariate regression of HEI3 on attitudes towards health and SES separately

^bModel 2: multivariate regression of HEI3 on attitudes towards health, with SES included
all analyses adjusted for age, sex, race/ethnicity, household size

*indicates a p-value of <0.05, ** indicates a p-value of <0.001

Table 6d. Multivariate logistic regressions to examine the association of proportion meeting 5 fruits & vegetables/day with attitudes towards healthful food and key socioeconomic variables by attitudes towards convenient food

	Model 1^a β (95% CI)	Model 2^b β (95% CI)
<u>Do not strongly agree with the importance of convenient food</u>		
Healthy		
Other	Ref.	Ref.
Strongly Agree	2.26 (1.67, 3.07)**	2.04 (1.47, 2.82)**
Income		
<\$50,000	Ref.	Ref.
\$50,000-99,999	.94 (.66, 1.33)	.90 (.63, 1.28)
\$100,000+	.49 (.32, .75)*	.48 (.31, .75)*
Education		
Some college or below	Ref.	Ref.
College graduate	1.91 (1.37, 2.67)**	1.84 (1.31, 2.57)**
<u>Strongly agree with the importance of convenient food</u>		
Healthy		
Other	Ref.	Ref.
Strongly Agree	4.10 (1.92, 8.73)**	3.71 (1.68, 8.23)*
Income		
<\$50,000	Ref.	Ref.
\$50,000-99,999	.49 (.22, 1.08)	.62 (.28, 1.38)
\$100,000+	.75 (.28, 2.02)	.83 (.30, 2.26)
Education		
Some college or below	Ref.	Ref.
College graduate	1.74 (.91, 3.35)	1.61 (.83, 3.12)

^aModel 1: multivariate regression of five-a-day intake on attitudes towards health and SES separately

^bModel 2: multivariate regression of five-a-day intake on attitudes towards health, with SES included
all analyses adjusted for age, sex, race/ethnicity, household size

*indicates a p-value of <0.05, ** indicates a p-value of <0.001

Appendix A. Attitudes and primary grocery store

Table 1. Distribution of primary grocery store by attitude

	Safeway	Fred Meyer	QFC	Costco	PCC	Albertsons	Trader Joes	Winco	Red Apple	Top Foods	Whole Foods	Madison Market	Metropolitan Market	Grocery Outlet	Other	Total
Cheap																
Low (%)	26.2	15.0	16.9	7.0	7.5	2.2	3.5	2.9	2.2	2.9	2.4	2.2	1.6	0.3	7.3	100
High (%)	31.4	15.7	14.2	6.7	3.1	5.6	4.4	4.4	1.7	1.9	0.9	0.9	0.9	1.7	6.5	100
Healthy																
Low (%)	33.3	17.7	15.9	6.3	2.0	5.9	2.0	3.9	2.4	3.3	1.2	0	0.6	0.4	5.1	100
High (%)	26.0	13.9	15.3	6.9	7.3	2.8	5.1	3.4	1.8	1.9	1.9	2.5	1.7	1.4	8.3	100
Quick																
Low (%)	25.8	13.6	15.2	8.2	7.9	2.9	5.0	2.9	1.8	2.5	2.5	2.7	1.4	0.9	6.6	100
High (%)	31.1	16.8	15.6	5.3	3.2	4.8	3.1	4.2	2.2	2.4	1.0	0.7	1.1	1.1	7.3	100