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Prototype Notebook

Short Questions on Dietary Intake, Knowledge, Attitudes, and Behaviors

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Abstract

This report provides a compendium of 128 survey questions used in previous research to assess dietary knowledge, attitudes, and behaviors for low-income populations over the age of 18. The short questions or sets of questions on nine topics, including fruits and vegetables; grains, legumes, and fiber; variety; fat; calcium food sources; nonalcoholic beverages; knowledge, attitudes; and behaviors, are drawn from an extensive inventory and evaluation of available questions reported in the research literature. Each question is presented using a common template including the citations, data sources, and characteristics such as question reliability, validity, sensitivity to change, availability in other languages, mode of administration, use in populations with low-income and/or low-education levels, relation to nutrition and health outcomes, and availability of comparative data. This report is part of a larger ERS research effort to develop a common core set of questions to assess the dietary behavior impact of Food Stamp Nutrition Education (FSNE) on Food Stamp Program participants.

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Prototype Notebook

Short Questions on Dietary Intake, Knowledge, Attitudes and Behaviors

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EXECUTIVE SUMMARY

Background. The Economic Research Service (ERS) contracted with Mathematica Policy Research, Inc. (MPR) to develop a prototype notebook to be used by an expert panel at an ERS workshop entitled "Developing Common Core Survey Questions to Assess Key Dietary Behavior Outcomes of FSNE: Launching the Research Process." The prototype notebook contains a selection of short questions or sets of questions on dietary intake (fruits and vegetables; grains, legumes, and fiber; variety; fat; calcium food sources; nonalcoholic beverages), knowledge, attitudes, and behaviors, drawn from an extensive inventory and evaluation of available questions. The expert panel will use the selected questions in the prototype notebook as a starting point to develop and test a core set of questions to assess key dietary behavioral outcomes with the Food Stamp Nutrition Education (FSNE) audience.

Process. The literature search focused on research publications since 1998 that included U.S. adults 18 years of age and older and/or FSNE or low-income populations. However, several older surveys were reviewed to ensure that relevant topics were fully addressed. MPR project team members reviewed questions by critically examining and interpreting the available evidence and data and including this information in an inventory. The inventory incorporated not only the questions, but also the citations, data sources, and characteristics such as question reliability, validity, sensitivity to change, availability in other languages, mode of administration, use in populations with low-income and/or low-education levels, relation to nutrition and health outcomes, and availability of comparative data. To assist in evaluating the questions for inclusion in the notebook, MPR team members assigned a preliminary ranking to each question. Two senior members of the team independently reviewed the selected questions and achieved consensus on the final selections for the notebook, using their expert judgment to select questions from the inventory for inclusion based on readability, ease and mode of administration, question sequence, question structure or style, reference period, and balance across and within topic areas.

Results. MPR team members reviewed 48 survey instruments and inventoried 459 questions, or sets of questions, from 26 of these instruments. The most questions were available for the behaviors topic area, whereas the fewest were available for the nonalcoholic beverages topic area. To expand available questions on healthy weight for the expert panel's use, 13 questions were included in the notebook at the request of ERS. These questions did not undergo the same intense review of testing and outcome criteria, and therefore were not ranked. The final prototype notebook includes 128 questions categorized by topic area.

Applications/considerations. As the expert panel selects questions for an instrument for use with the FSNE population, careful attention must be given to question format, lead-ins, response categories, and reference periods. It will also be necessary to consider whether questions can be "pulled out" from their set or module from another instrument and recombined. Finally, there were several topics or subtopics most in need of research and development based on how few useful questions were found: variety, moderation, portion size and portion control, nonalcoholic beverages, weight loss and maintenance, whole grains, and snacking related to television watching.

PROTOTYPE NOTEBOOK

A. INTRODUCTION

The primary goal of USDA's Food and Nutrition Service (FNS) Food Stamp Nutrition Education (FSNE) is to increase the likelihood of food stamp recipients making healthful food choices consistent with USDA dietary guidance. FSNE is managed and operated by a variety of implementing agencies across and sometimes within states. The specific dietary goals and educational approaches to achieve them also vary substantially. While some components are evaluated by FSNE implementing agencies or local providers, there are no common outcome measures that can be used to track changes by all FSNE providers. To address the need for common measures or indicators of dietary behavior for assessing key dietary behavioral outcomes of the FSNE program, the Economic Research Service (ERS) plans to work with FSNE stakeholders and nutrition education experts to develop a 15-minute core set of questions that are manageable, flexible, and appropriate for use in multiple settings, including local and state monitoring efforts. FSNE is actually a component of the Food Stamp Program and does not have "Program" status itself.

ERS contracted with Mathematica Policy Research, Inc. (MPR) to develop a prototype notebook to be used by an expert panel at an ERS workshop entitled "Developing Common Core Survey Questions to Assess Key Dietary Behavior Outcomes of FSNE: Launching the Research Process." The prototype notebook contains a selection of short questions or sets of questions on dietary intake, knowledge, attitudes, and behaviors, drawn from an extensive inventory and evaluation of available questions. The expert panel will use the selected questions in the prototype notebook as a starting point to develop and test a core set of questions with the FSNE audience.

B. COVERAGE OF TOPICS

Question topics reflect the major areas of emphasis of FSNE interventions, including dietary quality and healthy weight, which are consistent with the USDA Food Guide Pyramid and U.S. Dietary Guidelines. The nine main topic areas are:

- Fruits and vegetables (dark green vegetables, deep yellow/orange vegetables, fruits, 100% fruit juice)
- Grains, legumes, and fiber
- Variety (variety within a Food Guide Pyramid group)
- Fat (fat and saturated fat)
- Calcium food sources
- Nonalcoholic beverages

- Knowledge (diet and health relationships, Food Guide Pyramid servings)
- Attitudes (about diet, health, and a healthy weight)
- Other behaviors (food label reading, shopping practices, breakfast consumption, eating away from home, portion size modification/selection, snack foods, weight loss practices)

The subtopics in parentheses were created to assure the selection of questions was comprehensive. Topics considered outside the scope of this project, as agreed upon by ERS and MPR, were: dietary supplements, alcoholic beverages, awareness of diet and health, food expenditures, food security, pregnancy and folic acid, and physical activity.

C. PROCESS USED TO LOCATE AND INVENTORY QUESTIONS

There were several primary review articles or resources that were used as a starting point in the review (1-13). MPR researchers then reviewed all major national nutrition surveys and state surveillance systems, and conducted searches of the nutrition education and epidemiology literature to identify a wide selection of relevant instruments and potential questions (especially targeting cancer, cardiovascular disease, and osteoporosis). The literature search focused on research publications since 1998 that included U.S. adults 18 years of age and older and/or FSNE or low-income populations.[1] However, project team members reviewed several older surveys that were precursors to more current instruments or to ensure that relevant topics (e.g., healthy weight) were fully addressed.

After locating articles and instruments, it was often necessary to obtain original research articles on survey questionnaire development, many of which were published prior to 1999. In some instances, personal contacts were necessary to obtain a copy of the instrument or additional information on testing of the instrument. Some instruments were derived from other instruments, had the same name as other instruments, or had inconsistent names across sources, providing additional challenges during the project.

After reviewing articles and instruments, questions within the project scope were inventoried (see Appendix A for a list of instruments and coverage of topics). In general, short questions or sets of questions within the topic areas were selected as opposed to traditional dietary intake methods (dietary recalls, diet records, or food frequency questionnaires (FFQs)). Only when questions were severely limited in a topic area were FFQ questions inventoried. Several instruments and questions were reviewed, but not inventoried, as they were primarily used as screening tools or checklists (e.g., Nutrition Screening Initiative, Quick Check for Fat), too long (i.e., more than 6-8 items in a set of questions), or outdated (e.g. National Health Interview Survey Cancer Control Supplement). In addition, some questions or sets of questions

[1]One exception was the inclusion of instruments that contained questions to fill content gaps that were only used with children and adolescents, but recommended for use with adults.

could not feasibly stand on their own when separated from the larger instrument, and thus were not inventoried (See Appendix B).

Project team members reviewed questions by critically examining and interpreting the available evidence and data and including this information in the inventory. The inventory incorporated not only the questions, but also the citations, data sources, and characteristics such as question reliability, validity, sensitivity to change, availability in other languages, method of administration, use in populations with low-income and/or low-education levels, relation to nutrition and health outcomes, and availability of comparative data.[2] To maintain consistency within the project team, MPR developed a standardized set of definitions for the characteristics (See Appendix C). In many cases, information on indicators of reliability and validity was available only for entire questionnaires or subscales within questionnaires, not for individual items. When the information on reliability or validity refers to a larger group of questions, not the specific question under examination, we present the data with appropriate information on level of specificity so the reader can assess its value. Available information was captured in a user-friendly template for use by the expert panel. Due to the emphasis on healthy weight in FSNE efforts, project team members identified questions relating specifically to healthy weight and/or with outcomes related to weight or body mass index in the notes section of the template.

D. PROCESS FOR PRELIMINARY RANKING AND SELECTING RECOMMENDED QUESTIONS

To assist in evaluating the questions, MPR team members developed an approach for standardizing their preliminary ranking. The preliminary ranking is included in the template (see Table 1).

After questions were ranked using the guidelines shown in Table 1, MPR sorted the questions by topic area (with the exception of those that were 'not ranked'), and used expert judgment to select questions for inclusion in the notebook based on readability, ease and mode of administration, question sequence, question structure or style, and reference period. It was also desired to ensure a balance of questions across and within topic areas (e.g., including questions on a variety of types of fruits and vegetables). When similar questions had a variation in wording, higher priority was given to the most recent question and the question with the most testing or that was derived from an instrument with extensive testing in the target population. Occasionally, senior project staff chose questions with lower rankings based on their judgments about superior readability and ease of administration; however, no 'low' ranked questions were included in the notebook. Two senior members of the team independently reviewed the selected questions and achieved consensus on the final selections. The target was to include about 12 questions per topic area in the notebook. For a few topics that cover a broad number of subtopics, MPR included a few additional questions for the expert panel's consideration.

[2]Initially, MPR searched for documentation regarding the reading or literacy level of the sample population. This information was not available in any of the reviewed citations; therefore, the analysis focused on the reported education level of the sample population.

E. APPLICATIONS

We reviewed 48 instruments and inventoried 459 questions or sets of questions from 26 of these instruments.[3] The final notebook includes 128 questions, including the 13 questions that were not ranked. The most questions were available for the behaviors topic area, whereas the fewest were available for the nonalcoholic beverages topic area. There were several topics or subtopics most in need of research and development based on how few useful questions were found: variety, moderation, portion size and portion control, nonalcoholic beverages,[4] weight loss and maintenance, whole grains, and snacking related to television watching.

Several issues arose during the course of this project. An individual question or set of questions from an instrument was not always worded consistently in different sources or citations. Along similar lines, response categories were not always in agreement with the question wording. For example, one question asked about the number of servings, but the response categories only included the number of times during specified time periods.

In addition, some questions or sets of questions were not designed to be used or tested independently from the instrument in which they were included. (With this in mind, questions or sets of questions in the notebook and excluded inventory are sorted by topic area, and then alphabetically by instrument within the topic area.) During the selection and field-testing process, the expert panel will need to determine if it is appropriate to include such questions or sets of questions that are taken out of context, and then develop a strategy for handling this issue. In particular, it will be necessary to consider whether questions can be 'pulled out' from their set or module from another instrument and recombined, taking into consideration flow, response categories, and rephrasing needs.

F. THE NEXT STEPS

As the expert panel selects questions for the 15-minute instrument, careful attention must be given to question format, lead-ins, response categories, and reference periods. Questions cannot be selected in isolation but must be considered in the totality of the instrument. Frequent variations in question format, response categories, and reference periods will impede the flow of the instrument and cause confusion for respondents. In some instances, wording revisions to questions will be necessary to improve the internal consistency and ease of administration. For some questions or sets of questions, the project team provided rephrasing suggestions in the "Notes" section of the template.

[3]Appendix E includes citations for questions.

[4]Regarding nonalcoholic beverages, there were no questions specifically focused on sweetened iced tea consumption, which is a common regional and seasonal sweetened beverage.

TABLE 1

GUIDELINES FOR PRELIMINARY RANKINGS BASED ON USE WITH THE FSNE POPULATION, EVIDENCE OF TESTING, AND NUTRITION OR HEALTH OUTCOMES

Preliminary Rank	Guidelines
Ideal	This question has been used in national or state surveys and/or with the food stamp population. This question has had some testing, showing either reliability or internal validity. This question is related to a nutrition or health outcome.
High	This question has been used in a national or state survey and/or with the food stamp population. This question has had some testing, showing either reliability or internal validity, OR This question is related to a nutrition or health outcome.
Medium	This question has been used in a national or state survey or with the food stamp population, with little or no testing, OR This question has been used with a local population with some testing.
Low	This question has not been used in a national or state survey or the food stamp population. This question has not had any validity or reliability testing.
Not ranked	This question was requested by the client for inclusion in the notebook to expand available questions on healthy weight. Since this question did not undergo the same intense review of testing and outcome criteria as other questions, it is not ranked.

NOTE: The instrument sources of 'not ranked' questions are provided in Appendix D. This review of testing goes beyond cognitive testing.

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ACRONYMS

AARP	American Association for Retired Persons
CAPI	Computer Assisted Personal Interview
CATI	Computer Assisted Telephone Interview
CI	Confidence Interval
DK	Don't Know
EATS	Eating at America's Table Study
F	False
FFQ	Food Frequency Questionnaire
FSP	Food Stamp Program
HEI	Healthy Eating Index
HS	High School
N	No
NA	Not Applicable
NCHS	National Center for Health Statistics
NHLBI	National Heart, Lung, and Blood Institute
NIH	National Institutes of Health
NS	Not Significant
OR	Odds Ratio
RDD	Random Digit Dialing
T	True
WIC	Special Supplemental Nutrition Program for Women, Infants, and Children
Y	Yes

NOTE : Acronyms for instruments reviewed, inventoried, and/or not ranked are included in Appendices A, B, and D.

RECOMMENDED QUESTIONS

FRUITS AND VEGETABLES

Not counting juice, how often do you eat fruit? (# per day, week, month, year; never)

Preliminary Rank High **Instrument** BRFSS (2003)

Administration

Population	National, state, local
Subgroup	Wisconsin/Medicare/women; Chicago/low-income/Hispanic/non-pregant/WIC/women; Arizona/adults/45+, Augusta, GA; Adults 30-74 in Cancer Prevention Study in MN; Low-income parents.
Sample Size(s)	n=507 in WI, n=97 in Chicago, n=93 in AZ, n=193 in Augusta, GA Serdula M et al. 1993; n=201 Smith-Warner SA, et al. 1997; n=1465 Weaver M et al. 1999.
Mode	Self:Paper/pencil; Interviewer:CAPI and CATI (18%).

	Documented	**Description**
Other Languages	**X**	Spanish
Low-Income	**X**	Study population in Chicago had low incomes. Used with WIC and food stamp participants.
Low Education Level	**X**	Most of study population in Chicago had limited education.

Evidence

Reliability	**X**	Test-retest with control population at baseline and 3 months. Correlation coefficient = .57. Internal consistency alpha coefficient was .77.
Internal Validity	**X**	Criterion correlation coefficients: .56, .54, .35, and .58 FFQ; .66 and .33 dietary records; -.04 dietary recall; .70 diet recall and .68 FFQ.
External Validity		
Sensitive to Change		
Related to Outcome(s)		
Other	**X**	Cognitive testing.

Notes: The BRFSS estimates of fruits and vegetable consumption were lower than the FFQ, but similar to the food records or recalls.

Citations: Serdula M et al. 1993; Smith-Warner SA et al. 1997; Weaver M et al. 1999; CDC 2003.

How often do you eat carrots? (# per day, week, month, year; never)

Preliminary Rank High **Instrument** BRFSS (2003)

Administration

Population	National, state, local
Subgroup	Wisconsin/Medicare/women; Chicago/low-income/Hispanic/non-pregant/WIC/women; Arizona/adults/45+, Augusta, GA; Adults 30-74 in Cancer Prevention Study in MN; Low-income parents.
Sample Size(s)	n=507 in WI, n=97 in Chicago, n=93 in AZ, n=193 in Augusta, GA Serdula M et al. 1993; n=201 Smith-Warner SA, et al. 1997; n=1465 Weaver M et al. 1999.
Mode	Self:Paper/pencil; Interviewer:CAPI and CATI (18%).

	Documented	**Description**
Other Languages	**X**	Spanish
Low-Income	**X**	Study population in Chicago had low incomes. Used with WIC and food stamp participants.
Low Education Level	**X**	Most of study population in Chicago had limited education.

Evidence

Reliability	**X**	Test-retest with control population at baseline and 3 months. Correlation coefficient = .49. Internal consistency alpha coefficient was .77.
Internal Validity	**X**	Criterion correlation coefficients: .40, .57, .41, and .51 FFQ; 23 and .31 dietary records; .34 dietary recall; .45 diet recall and .63 FFQ.
External Validity		
Sensitive to Change		
Related to Outcome(s)		
Other	**X**	Cognitive testing.

Notes: The BRFSS estimates of fruits and vegetable consumption were lower than the FFQ, but similar to the food records or recalls.

Citations: Serdula M et al. 1993; Smith-Warner SA et al. 1997; Weaver M et al. 1999; CDC 2003.

How often do you eat green salad? (# per day, week, month, year; never)

Preliminary Rank High **Instrument** BRFSS (2003)

Administration

Population	National, state, local
Subgroup	Wisconsin/Medicare/women; Chicago/low-income/Hispanic/non-pregant/WIC/women; Arizona/adults/45+, Augusta, GA; Adults 30-74 in Cancer Prevention Study in MN; Low-income parents.
Sample Size(s)	n=507 in WI, n=97 in Chicago, n=93 in AZ, n=193 in Augusta, GA Serdula M et al. 1993; n=201 Smith-Warner SA, et al. 1997; n=1465 Weaver M et al. 1999.
Mode	Self:Paper/pencil; Interviewer:CAPI and CATI (18%).

	Documented	**Description**
Other Languages	**X**	Spanish
Low-Income	**X**	Study population in Chicago had low incomes. Used with WIC and food stamp participants.
Low Education Level	**X**	Most of study population in Chicago had limited education.

Evidence

Reliability	**X**	Test-retest with control population at baseline and 3 months. Correlation coefficient = .66. Internal consistency alpha coefficient was .77.
Internal Validity	**X**	Criterion correlation coefficients: .55, .63, .13, and .37 FFQ; .50 and .16 dietary records; .11 dietary recall; .59 diet recall and .66 FFQ.
External Validity		
Sensitive to Change		
Related to Outcome(s)		
Other	**X**	Cognitive testing.

Notes: The BRFSS estimates of fruits and vegetable consumption were lower than the FFQ, but similar to the food records or recalls.

Citations: Serdula M et al. 1993; Smith-Warner SA et al. 1997; Weaver M et al. 1999; CDC 2003.

During the past week did you have citrus fruit or citrus juice? (Y, N)

Preliminary Rank Ideal **Instrument** Food Behavior Checklist (1997)

Administration

Population	Local
Subgroup	African American and White FSP participants from 7 counties in CA. 8 California counties among women eligible for food stamps. 9 counties in California of women receiving food stamps.
Sample Size(s)	n=95, n=100, n=132.
Mode	Interviewer:Telephone and in-person among a group.

	Documented	Description
Other Languages	X	Spanish
Low-Income	X	
Low Education Level		

Evidence

Reliability	X	Test-retest correlation coefficient = .58.
Internal Validity	X	Correlation coefficient to servings of fruit from 24 hour recall = .29. Coefficient to average of fruit =.27.
External Validity		
Sensitive to Change		Not significant.
Related to Outcome(s)	X	Correlation to serum carotenoid level =.35.
Other	X	A Flesch Reading Ease score of 96 and a Flesch Kincaid score of 2.8 indicates less than fourth grade reading level.

Notes:

Citations: Murphy SP et al. 1998; Murphy SP et al. 2001; Townsend MS et al. 2003.

How many servings of vegetables do you eat each day? (#)

Preliminary Rank Ideal **Instrument** Food Behavior Checklist (1997)

Administration

Population	Local
Subgroup	African American and White FSP participants from 7 counties in CA. 8 California counties among women eligible for food stamps. 9 counties in California of women receiving food stamps.
Sample Size(s)	n=95, n=100, n=132.
Mode	Interviewer:Telephone and in-person among a group.

	Documented	Description
Other Languages	X	Spanish
Low-Income	X	
Low Education Level		

Evidence

Reliability	X	Test-retest correlation coefficient = .58.
Internal Validity	X	Correlation coefficient to servings of vegetables from 24 hour recall = .38. Coefficient to average of vegetables =.32 and fiber = .35.
External Validity		
Sensitive to Change		
Related to Outcome(s)	X	Correlation to serum carotenoid level =.33.
Other	X	A Flesch Reading Ease score of 96 and a Flesch Kincaid score of 2.8 indicates less than fourth grade reading level.

Notes:

Citations: Murphy SP et al. 1998; Murphy SP et al. 2001; Townsend MS et al. 2003.

Think about how you usually do things now. Do you eat two or more servings of vegetables at your main meal? (usually/always, often, sometimes, rarely, never)

Preliminary Rank Ideal **Instrument** Food Behavior Checklist (1997)

Administration

Population	Local
Subgroup	African American and White FSP participants from 7 counties in CA. 8 California counties among women eligible for food stamps. 9 counties in California of women receiving food stamps.
Sample Size(s)	n=95, n=100, n=132.
Mode	Interviewer:Telephone and in-person among a group.

	Documented	**Description**
Other Languages	**X**	Spanish
Low-Income	**X**	
Low Education Level		

Evidence

Reliability	**X**	Test-retest correlation coefficient = .55.
Internal Validity	**X**	Correlation coefficient to servings of vegetables from 24 hour recall = .26. Coefficient to average of vegetables =.28 and fiber = .27.
External Validity		
Sensitive to Change		
Related to Outcome(s)	**X**	Correlation to serum carotenoid level =.35.
Other	**X**	A Flesch Reading Ease score of 96 and a Flesch Kincaid score of 2.8 indicates less than fourth grade reading level.

Notes:

Citations: Murphy SP et al. 1998; Murphy SP et al. 2001; Townsend MS et al. 2003.

How many servings of fruit do you eat each day? (#)

Preliminary Rank Ideal **Instrument** Food Behavior Checklist (1997)

Administration

Population	Local
Subgroup	African American and White FSP participants from 7 counties in CA. 8 California counties among women eligible for food stamps. 9 counties in California of women receiving food stamps.
Sample Size(s)	n=95, n=100, n=132.
Mode	Interviewer:Telephone and in-person among a group.

	Documented	**Description**
Other Languages	**X**	Spanish
Low-Income	**X**	
Low Education Level		

Evidence

Reliability	**X**	Test-retest correlation coefficient = .42.
Internal Validity	**X**	Correlation coefficient to servings of fruit from 24 hour recall = .39. Coefficient to average of fruit =.39 and fiber = .32.
External Validity		
Sensitive to Change	**X**	p value = <.01
Related to Outcome(s)	**X**	Correlation to serum carotenoid level =.31.
Other	**X**	A Flesch Reading Ease score of 96 and a Flesch Kincaid score of 2.8 indicates less than fourth grade reading level.

Notes:

Citations: Murphy SP et al. 1998; Murphy SP et al. 2001; Townsend MS et al. 2003.

During the past week did you have raw vegetables? (Y, N)

Preliminary Rank High **Instrument** Food Behavior Checklist (1997)

Administration

Population	Local
Subgroup	African American and White FSP participants from 7 counties in CA. 8 California counties among women eligible for food stamps. 9 counties in California of women receiving food stamps.
Sample Size(s)	n=95, n=100, n=132.
Mode	Interviewer:Telephone and in-person among a group.

	Documented	Description
Other Languages	X	Spanish
Low-Income	X	
Low Education Level		

Evidence

Reliability	X	Test-retest correlation coefficient = .78.
Internal Validity	X	Correlation coefficient to cholesterol from 24 hour recall =-.23. Coefficient to HEI =.22.
External Validity		
Sensitive to Change		
Related to Outcome(s)		No significant correlation to serum carotenoid level.
Other	X	A Flesch Reading Ease score of 96 and a Flesch Kincaid score of 2.8 indicates less than fourth grade reading level.

Notes:

Citations: Murphy SP et al. 1998; Murphy SP et al. 2001; Townsend MS et al. 2003.

During the past week did you have cooked vegetables? (Y, N)

Preliminary Rank Medium **Instrument** Food Behavior Checklist (1997)

Administration

Population	Local
Subgroup	African American and White FSP participants from 7 counties in CA. 8 California counties among women eligible for food stamps. 9 counties in California of women receiving food stamps.
Sample Size(s)	n=95, n=100, n=132.
Mode	Interviewer:Telephone and in-person among a group.

	Documented	Description
Other Languages	X	Spanish
Low-Income	X	
Low Education Level		

Evidence

Reliability		Control group reliability test not significant.
Internal Validity		No significant correlations.
External Validity		
Sensitive to Change		
Related to Outcome(s)		No significant correlation to serum carotenoid level.
Other	X	A Flesch Reading Ease score of 96 and a Flesch Kincaid score of 2.8 indicates less than fourth grade reading level.

Notes:

Citations: Murphy SP et al. 1998; Murphy SP et al. 2001; Townsend MS et al. 2003.

In the past month, about how often did you: Drink 100% orange juice or grapefruit juice? Drink other 100% fruit juices, not counting fruit drinks? Eat green salad (with or without other vegetables)? Eat French fries or fried potatoes? Eat baked, boiled, or mashed potatoes? (never, 1-3 times per month, 1-2 times per week, 3-4 times per week, 5-6 times per week, 1 time per day, 2 times per day, 3 times per day, 4 times per day, 5 or more times per day) About how many servings of vegetables, overall, do you eat per day or per week, not counting salad or potatoes? (number of servings per day, week, month, year) About how many servings of fruit do you eat per day or per week, not counting juices? (number of servings per day, week, month, year) (7-item set)

Preliminary Rank Ideal **Instrument** National 5 A Day Survey, local NCI 5 A Day projects (1997)

Administration

Population National, local (5 adult NCI 5 A Day projects)

Subgroup Nationally representative survey (random digit dialing, 18+ years old, oversampled African-Americans and Latinos, 17% and 15% below 130% poverty at baseline and followup), Massachusetts' TreatWell 5 A Day Program (22 community health centers, 23% Hispanic, 18% African-American, 20% had 12th grade education or less), Seattle's 5 A Day program (28 worksites with cafeterias), North Carolina's Black Churches United for Better Health (50 churches in 10 randomized counties, 72% female, 98% African American, mean age 53.8), Maryland WIC 5 A Day Promotion Program (16 WIC sites in Baltimore City and six Maryland counties, 55% African-American, 41% White, 100% female, mean age 27).

Sample Size(s) National 5 A Day survey n=2,837 baseline and n=2,602 followup, TreatWell study n=1,359 (only women's responses included in analysis n=1,096), North Carolina's Black Churches United for Better Health n=3,737 baseline and n=2,519 follow-up, Maryland WIC 5 A Day Promotion Program n=3,122, Warneke et al. study n=146.

Mode Self:Paper/pencil; Interviewer:In-person interview.

	Documented	**Description**
Other Languages		
Low-Income	**X**	WIC participants
Low Education Level		21.1% of baseline and 19.8% of final sample had less than a HS degree. Range of education levels in 5 A Day studies and projects with 10-30% having less than a HS degree.

Evidence

Reliability	**X**	Test-retest two weeks apart indicates poor reliability (corrected fruit juice r=0.40 vs r=0.67, fruit excluding juice r=0.18 vs r=0.68, fruit and fruit juice r=0.41 vs r=0.77, vegetables r=0.69 vs 0.69, total r=0.72 vs 0.70).

Internal Validity	**X**	r=0.52 (95% confidence limits=0.46 to 0.57) between screener and Willett's 61-item FFQ; r=0.52 between screener and 3-day food records; r=0.77 for fruit juice, r=0.58 for fruit excluding juice, r=0.68 for fruit and fruit juice, r=0.34 for vegetables, r=0.53 for total between screener and 31-item FFQ (Warneke et al. 2001); r=0.33 to 0.57 for fruit and 0.24 to 0.32 for vegetables compared to dietary recalls, 100- and 122- item FFQ, and serum carotenoids (Kristal et al. 2000); r=0.52 for men and 0.50 for women compared to dietary recall (underestimated intake compared to FFQ) (Thompson et al. 2000).
External Validity		
Sensitive to Change	**X**	Fruit and vegetable intake increased in the intervention groups.
Related to Outcome(s)	**X**	All 5 A Day sites used the same survey as a pretest and post test. Intervention effects: Arizona's 5 A Day for the Overlooked Worker Program 0.46 servings ($p<0.002$), Massachusetts' TreatWell 5 A Day Program 0.55 servings for worksite-plus-family intervention group ($p=0.05$), Seattle's 5 A Day program 0.3 serving ($p=0.06$), Black Churches United for Better Health 0.85 servings ($p<0.0001$), Maryland WIC 5 A Day Promotion Program 0.43 servings ($p=0.002$); r=0.27 for fruit and serum carotenoids, r=0.15 for vegetables and serum carotenoids, r=0.58 for total fruit and vegetable intake and serum carotenoids
Other		Based on the national 5 A Day surveys and other fruit and vegetable screeners (i.e. BRFSS).

Notes: Simple to administer and analyze, well suited for population level surveillance and intervention evaluation.

Citations: Havas S et al. 1994; Hunt MK et al. 1998; Sorensen G et al. 1999.

Over the last month, how often did you eat tomato sauce? Include tomato sauce on pasta or macaroni, rice, pizza and other dishes. (never, 1-3 times last month, 1-2 times per week, 3-4 times per week, 1 time per day, 2 times per day, 3 times per day, 4 times per day, 5 or more times per day)

Preliminary Rank High **Instrument** NCI All-Day Screener

Administration

Population	National
Subgroup	RDD of adults 20-70 years old who were part of the NCI Eating at America's Table Study; Random sample of members from the Calibration Study of the NIH-AARP Diet and Health Study (50-69 years of age).
Sample Size(s)	n=202 men and n=260 women from EATS; n=874 from NIH-AARP.
Mode	Self:Paper/pencil.

	Documented	**Description**
Other Languages		
Low-Income		
Low Education Level		79% had received more than a HS degree in Thompson FE et al. 2002b.

Evidence

Reliability		
Internal Validity	**X**	r=0.66 for men and 0.51 for women between complete All Day screener and four nonconsecutive 24-hour recalls; r=0.54 for men and 0.59 for women for All Day screener compared to dietary recall (underestimated intake compared to FFQ).
External Validity		
Sensitive to Change		
Related to Outcome(s)		
Other	**X**	Cognitive, think-aloud interviews with 30 men and women.

Notes:

Citations: Thompson FE et al. 2002a; Thompson FE et al. 2002b.

During the past 12 months, how often per day, per week, per month or per year did you eat dark green vegetables, such as the food listed on this card? (# OF TIMES PER DAY, WEEK, MONTH OR YEAR; NEVER IN THE PAST 12 MONTHS) (See notes)

Preliminary Rank High **Instrument** NHANES Diet Behavior and Nutrition Sample Person Questionnaire 2001-2002

Administration

Population	National
Subgroup	Nationally representative; Question for 60+ years of age only; Survey oversamples older persons (60 years and over), African Americans, Mexican Americans, low income persons (less than 130 percent of poverty), and adolescents 12-19 years old.
Sample Size(s)	n=approximately 7,000 interviewed annually (all ages).
Mode	Interviewer:In-person interview; trained interviewer using CAPI; individual setting at respondent's home.

	Documented	**Description**
Other Languages	**X**	Spanish
Low-Income	**X**	
Low Education Level		

Evidence

Reliability	**X**	Some items underwent reliability testing.
Internal Validity		
External Validity		
Sensitive to Change		
Related to Outcome(s)		
Other	**X**	New questions were added or modified based on recommendations from survey collaborators, NCHS staff, and other interagency work groups, and through large-scale field testing of English-Spanish speaking participants.

Notes: The following examples of dark green vegetables are given to the respondent on the DBQ1 hand card: broccoli; spinach; romaine and other dark green lettuce; turnip, beet and mustard greens; collards; kale; chard.

Citations: NCHS/NHANES 2004; An C et al. 2003.

GRAINS, LEGUMES, AND FIBER

How many servings of whole grain breads/whole wheat tortillas did you have yesterday? A serving is one slice of bread, one tortilla, 1/2 an English muffin, or a small dinner roll.(#)

Preliminary Rank Medium **Instrument** California Dietary Practices Survey (2001)

Administration

Population State

Subgroup Adults in California, oversampling of low-income, African American, and Latino participants.

Sample Size(s) n=1,500-1,700 adults biennially.

Mode Interviewer:Telephone (RDD).

	Documented	Description
Other Languages	X	Spanish
Low-Income	X	
Low Education Level		

Evidence

Reliability

Internal Validity

External Validity

Sensitive to Change

Related to Outcome(s)

Other

Notes:

Citations: Oppen M et al. 2002.

Yesterday did you eat any whole-grain bread such as 100% whole wheat, wheatberry, bran bread, rye, pumpernickel, or whole wheat tortillas? [INTERVIEWER: DO NOT INCLUDE FLOUR OR CORN TORTILLAS] (Y, N)

Preliminary Rank Medium **Instrument** California Dietary Practices Survey (2001)

Administration

Population	State
Subgroup	Adults in California, oversampling of low-income, African American, and Latino participants.
Sample Size(s)	n=1,500-1,700 adults biennially.
Mode	Interviewer:Telephone (RDD).

	Documented	Description
Other Languages	X	Spanish
Low-Income	X	
Low Education Level		

Evidence

Reliability
Internal Validity
External Validity
Sensitive to Change
Related to Outcome(s)
Other

Notes:

Citations: Oppen M et al. 2002.

Yesterday did you eat any beans such as kidney beans, refried beans, chili beans, bean soup, bean salad, or lentils? (Y, N)

Preliminary Rank Medium **Instrument** California Dietary Practices Survey (2001)

Administration

Population	State
Subgroup	Adults in California, oversampling of low-income, African American, and Latino participants.
Sample Size(s)	n=1,500-1,700 adults biennially.
Mode	Interviewer:Telephone (RDD).

	Documented	**Description**
Other Languages	**X**	Spanish
Low-Income	**X**	
Low Education Level		

Evidence

Reliability
Internal Validity
External Validity
Sensitive to Change
Related to Outcome(s)
Other

Notes:

Citations: Oppen M et al. 2002.

How many bowls of cereal did you have yesterday? (#)

Preliminary Rank Medium **Instrument** California Dietary Practices Survey (2001)

Administration

Population State

Subgroup Adults in California, oversampling of low-income, African American, and Latino participants.

Sample Size(s) n=1,500-1,700 adults biennially.

Mode Interviewer:Telephone (RDD).

	Documented	Description
Other Languages	X	Spanish
Low-Income	X	
Low Education Level		

Evidence

Reliability
Internal Validity
External Validity
Sensitive to Change
Related to Outcome(s)
Other

Notes:

Citations: Oppen M et al. 2002.

When you eat fresh fruits with peels that can be eaten, do you eat the peel always, sometimes, rarely, or never? (ALWAYS, SOMETIMES, RARELY, NEVER)

Preliminary Rank Medium **Instrument** Diet and Health Knowledge Survey (DHKS) 1994-1996 (conducted as follow-up to CSFII)

Administration

Population	National
Subgroup	Nationally representative; Adults 20+ years of age; Oversampling of low-income.
Sample Size(s)	n=5,649 in national study; n=1,196 for Obayashi S et al 2003 analysis.
Mode	Interviewer:Telephone interview; Trained interviewer.

	Documented	Description
Other Languages		
Low-Income	X	
Low Education Level		10.8% had less than a HS degree in Obayashi S et al. 2003.

Evidence

Reliability		
Internal Validity		
External Validity		
Sensitive to Change		
Related to Outcome(s)		
Other	X	Other tests for reliability and validity were conducted on the DHKS 1989-1991 instrument.

Notes: DHKS data indicate that many low-income adults do not know specific facts related to the health consequences or benefits of certain dietary practices, lack confidence that their diets comply with healthful dietary practices (especially among FSP participants), do not engage in dietary habits to lower fat and cholesterol, do not meet the Food Guide Pyramid or Dietary Guidelines recommendations, and have inadequate usual intakes of several micronutrients; DHKS data provide little evidence of differences in dietary intake between FSP participants and other low-income nonparticipants. DHKS 1994-1996 results cannot be compared to DHKS 1989-1991 results.

Citations: USDA/ARS 2004; Gleason P et al. 2000; Obayashi S et al. 2003; Capps O et al. 2002.

In the past 3 months, how often did you eat high fiber cereals? (usually/always, sometimes, rarely, never)

Preliminary Rank Medium **Instrument** Fat and Fiber Behavior Questionnaire (1997)

Administration

Population	Local
Subgroup	Randomized clinical trial in Puget Sound area. 68% were women, mean age = 51.
Sample Size(s)	n=1,796.
Mode	Interviewer:Telephone.

	Documented	**Description**
Other Languages		
Low-Income		
Low Education Level		Participants were well educated.

Evidence

Reliability	**X**	Within "cereals and grains" group test-retest correlation coefficient =.62, baseline internal consistency = .44.
Internal Validity	**X**	Within "cereals and grains" criterion: FFQ baseline correlation = .39.
External Validity		
Sensitive to Change		
Related to Outcome(s)		
Other		

Notes: Modified version of the Food Habits Questionnaire.

Citations: Shannon J et al. 1997.

In the past 3 months, how often did you eat brown rice instead of white rice? (usually/always, sometimes, rarely, never)

Preliminary Rank Medium **Instrument** Fat and Fiber Behavior Questionnaire (1997)

Administration

Population	Local
Subgroup	Randomized clinical trial in Puget Sound area. 68% were women, mean age = 51.
Sample Size(s)	n=1,796.
Mode	Interviewer:Telephone.

	Documented	**Description**
Other Languages		
Low-Income		
Low Education Level		Participants were well educated.

Evidence

Reliability	**X**	Within "substitute high-fiber" group test-retest correlation coefficient =.70, baseline internal consistency = .51.
Internal Validity	**X**	Within "substitute high-fiber" criterion: FFQ baseline correlation = .24.
External Validity		
Sensitive to Change		
Related to Outcome(s)		
Other		

Notes: Modified version of the Food Habits Questionnaire.

Citations: Shannon J et al. 1997.

Think about how you usually do things now. When you eat bread, do you eat whole wheat bread? (usually/always, often, sometimes, rarely, never)

Preliminary Rank Medium **Instrument** Food Behavior Checklist (1997)

Administration

Population	Local
Subgroup	African American and White FSP participants from 7 counties in CA. 8 California counties among women eligible for food stamps. 9 counties in California of women receiving food stamps.
Sample Size(s)	n=95, n=100, n=132.
Mode	Interviewer:Telephone and in-person among a group.

	Documented	**Description**
Other Languages	**X**	Spanish
Low-Income	**X**	
Low Education Level		

Evidence

Reliability	Control group reliability test not significant.
Internal Validity	No significant correlations.
External Validity	
Sensitive to Change	
Related to Outcome(s)	
Other	

Notes:

Citations: Murphy SP et al. 1998; Murphy SP et al. 2001; Townsend MS et al. 2003.

Grains, Legumes, and Fiber

Think about your eating habits over the past year or so. About how often do you eat each of the following foods? Remember breakfast, lunch, dinner, snacks, and eating out: beans such as baked beans, pinto, kidney, or lentils (not green beans)? (less than 1/week, once a week, 2-3 times a week, 4-6 times a week, once a day, 2+ a day)

Preliminary Rank Medium **Instrument** Fruit, Vegetable, and Fiber Screener (1996-2002)

Administration

Population	Local
Subgroup	Multi-ethnic group of one company's employees in the San Francisco area.
Sample Size(s)	n=208.
Mode	Self:Paper/pencil. Available online.

	Documented	**Description**
Other Languages		
Low-Income		
Low Education Level		

Evidence

Reliability		
Internal Validity	**X**	Criteria: Fruit/Vegetable score with FFQ correlation coefficients= .62 dietary fiber (includes beans and legumes).
External Validity		
Sensitive to Change		
Related to Outcome(s)		
Other		

Notes:

Citations: Block G et al. 2001; Berkeley Nutrition Services 1996-2002.

When you ate bread, how often did you eat whole-grain breads? (almost always, often sometimes, seldom, never)

Preliminary Rank Medium **Instrument** Massachusetts' TreatWell 5 A Day Program (1996)

Administration

Population Local

Subgroup Massachusetts' TreatWell 5 A Day Program (22 community health centers, 23% Hispanic, 18% African-American, 20% had 12th grade education or less, 84% female).

Sample Size(s) n=1,359 (only women's responses included in analysis n=1,096).

Mode

	Documented	Description
Other Languages		
Low-Income		
Low Education Level		

Evidence

Reliability		
Internal Validity	X	r=0.64 for whole grain bread servings and r=0.20 for fiber when compared to Willett's 61-item FFQ.
External Validity		
Sensitive to Change		
Related to Outcome(s)		
Other		

Notes:

Citations: Havas S et al. 1994; Hunt MK et al. 1998; Sorensen G et al. 1999.

Over the last month, how many times per month, week, or day did you eat cooked dried beans? Count baked beans, bean soup, refried bean, pork and beans, and other bean dishes. (never, 1-3 times last month, 1-2 times per week, 3-4 times per week, 1 time per day, 2 times per day, 3 times per day, 4 times per day, 5 or more times per day) Each time you ate these beans, how much did you usually eat? (less than 1/2 cup, 1/2 to 1 cup, 1 to 1 1/2 cups, more than 1 1/2 cups)

Preliminary Rank High **Instrument** NCI All-Day Screener

Administration

Population	National
Subgroup	RDD of adults 20-70 years old who were part of the NCI Eating at America's Table Study; Random sample of members from the Calibration Study of the NIH-AARP Diet and Health Study (50-69 years of age).
Sample Size(s)	n=202 men and n=260 women from EATS; n=874 from NIH-AARP.
Mode	Self:Paper/pencil.

	Documented	**Description**
Other Languages		
Low-Income		
Low Education Level		79% had received more than a HS degree in Thompson FE et al. 2002b.

Evidence

Reliability		
Internal Validity	**X**	r=0.66 for men and 0.51 for women between complete All Day screener and four nonconsecutive 24-hour recalls; r=0.54 for men and 0.59 for women for All Day screener compared to dietary recall (underestimated intake compared to FFQ).
External Validity		
Sensitive to Change		
Related to Outcome(s)		
Other	**X**	Cognitive, think-aloud interviews with 30 men and women.

Notes:

Citations: Thompson FE et al. 2002a; Thompson FE et al. 2002b.

On an average day, how many helpings of the following kinds of foods do you eat? Breads and other foods that are made from grains, such as cereals, spaghetti, pasta, rice, or tortillas. (# OF HELPINGS PER DAY; NONE, NEVER, OR RARELY EAT THESE FOODS)

Preliminary Rank High **Instrument** NHANES Diet Behavior and Nutrition Sample Person Questionnaire 1999-2003

Administration

Population	National
Subgroup	Nationally representative; Question for 60+ years of age only; Survey oversamples older persons (60 years and over), African Americans, Mexican Americans, low income persons (less than 130 percent of poverty), and adolescents 12-19 years old.
Sample Size(s)	n=approximately 7,000 interviewed annually (all ages).
Mode	Interviewer:In-person interview; trained interviewer using CAPI; individual setting at respondent's home.

	Documented	**Description**
Other Languages	**X**	Spanish
Low-Income	**X**	
Low Education Level		

Evidence

Reliability	**X**	Some items underwent reliability testing.
Internal Validity		
External Validity		
Sensitive to Change		
Related to Outcome(s)		
Other	**X**	New questions were added or modified based on recommendations from survey collaborators, NCHS staff, and other interagency work groups, and through large-scale field testing of English-Spanish speaking participants.

Notes: The sizes of helpings were not defined and responses represent "number of helpings" as determined by the respondent.

Citations: NCHS/NHANES 2004; An C et al. 2003.

During the past 12 months, how often per day, per week, per month or per year did you eat dried beans or peas, such as the foods listed on this card? (# OF TIMES PER DAY, WEEK, MONTH OR YEAR; NEVER IN THE PAST 12 MONTHS) (See notes)

Preliminary Rank High **Instrument** NHANES Diet Behavior and Nutrition Sample Person Questionnaire 2001-2002

Administration

Population	National
Subgroup	Nationally representative; Question for 60+ years of age only; Survey oversamples older persons (60 years and over), African Americans, Mexican Americans, low income persons (less than 130 percent of poverty), and adolescents 12-19 years old.
Sample Size(s)	n=approximately 7,000 interviewed annually (all ages).
Mode	Interviewer:In-person interview; trained interviewer using CAPI; individual setting at respondent's home.

	Documented	**Description**
Other Languages	**X**	Spanish
Low-Income	**X**	
Low Education Level		

Evidence

Reliability	**X**	Some items underwent reliability testing.
Internal Validity		
External Validity		
Sensitive to Change		
Related to Outcome(s)		
Other	**X**	New questions were added or modified based on recommendations from survey collaborators, NCHS staff, and other interagency work groups, and through large-scale field testing of English-Spanish speaking participants.

Notes: The following examples of dried beans or peas are given to the respondent on the DBQ2 hand card: refried beans; baked beans; bean, lentil and split pea soup; hummus; kidney beans; black beans; white beans; navy beans; chickpeas; lentils; split peas.

Citations: NCHS/NHANES 2004; An C et al. 2003.

VARIETY

Variety

Yesterday, how many times did you eat soy products, such as soy beans, soy burgers, tofu, soy cheese, or soy milk? (#)

Preliminary Rank Medium **Instrument** California Dietary Practices Survey (2001)

Administration

Population	State
Subgroup	Adults in California, oversampling of low-income, African American, and Latino participants.
Sample Size(s)	n=1,500-1,700 adults biennially.
Mode	Interviewer:Telephone (RDD).

	Documented	Description
Other Languages	X	Spanish
Low-Income	X	
Low Education Level		

Evidence

Reliability

Internal Validity

External Validity

Sensitive to Change

Related to Outcome(s)

Other

Notes:

Citations: Oppen M et al. 2002.

Variety

Now think about the foods you eat. Would you say you always, sometimes, rarely, or never: Eat fish or poultry instead of meat? [IF NEEDED, SAY: "Meat refers to beef, pork or lamb."] (always, sometimes, rarely, never)

Preliminary Rank High **Instrument** Diet and Health Knowledge Survey (DHKS) 1994-1996 (conducted as follow-up to CSFII)

Administration

Population	National
Subgroup	Nationally representative; Adults 20+ years of age; Oversampling of low-income.
Sample Size(s)	n=5,649 in national study; n=1,196 for Obayashi S et al 2003 analysis.
Mode	Interviewer:Telephone interview; Trained interviewer.

	Documented	Description
Other Languages		
Low-Income	X	
Low Education Level		10.8% had less than a HS degree in Obayashi S et al. 2003.

Evidence

Reliability		
Internal Validity		
External Validity		
Sensitive to Change		
Related to Outcome(s)	X	Significant predictor of saturated fat intake.
Other	X	Other tests for reliability and validity were conducted on the DHKS 1989-1991 instrument.

Notes: Question is in FDA's HDS. DHKS data indicate that many low-income adults do not know specific facts related to the health consequences or benefits of certain dietary practices, lack confidence that their diets comply with healthful dietary practices (especially among FSP participants), do not engage in dietary habits to lower fat and cholesterol, do not meet the Food Guide Pyramid or Dietary Guidelines recommendations, and have inadequate usual intakes of several micronutrients; DHKS data provide little evidence of differences in dietary intake between FSP participants and other low-income nonparticipants.. DHKS 1994-1996 results cannot be compared to DHKS 1989-1991 results.

Citations: USDA/ARS 2004; Gleason P et al. 2000; Obayashi S et al. 2003; Capps O et al. 2002.

Variety

Think about how you usually do things now. Do you eat more than one kind of fruit daily? (usually/always, often, sometimes, rarely, never)

Preliminary Rank Ideal **Instrument** Food Behavior Checklist (1997)

Administration

Population	Local
Subgroup	African American and White FSP participants from 7 counties in CA. 8 California counties among women eligible for food stamps. 9 counties in California of women receiving food stamps.
Sample Size(s)	n=95, n=100, n=132.
Mode	Interviewer:Telephone and in-person among a group.

	Documented	**Description**
Other Languages	**X**	Spanish
Low-Income	**X**	
Low Education Level		

Evidence

Reliability	**X**	Test-retest correlation coefficient = .35.
Internal Validity	**X**	Correlation coefficient to servings of fruit from 24 hour recall = .38. Coefficient to average of fruit =.30.
External Validity		
Sensitive to Change	**X**	p value = <.05
Related to Outcome(s)	**X**	Correlation to serum carotenoid level =.32.
Other	**X**	A Flesch Reading Ease score of 96 and a Flesch Kincaid score of 2.8 indicates less than fourth grade reading level.

Notes:

Citations: Murphy SP et al. 1998; Murphy SP et al. 2001; Townsend MS et al. 2003.

Variety

Think about how you usually do things now. Do you eat more than one kind of vegetable a day? (usually/always, often, sometimes, rarely, never)

Preliminary Rank Ideal **Instrument** Food Behavior Checklist (1997)

Administration

Population	Local
Subgroup	African American and White FSP participants from 7 counties in CA. 8 California counties among women eligible for food stamps. 9 counties in California of women receiving food stamps.
Sample Size(s)	n=95, n=100, n=132.
Mode	Interviewer:Telephone and in-person among a group.

	Documented	**Description**
Other Languages	**X**	Spanish
Low-Income	**X**	
Low Education Level		

Evidence

Reliability	**X**	Test-retest correlation coefficient = .65.
Internal Validity	**X**	Correlation coefficient to servings of fruit from 24 hour recall = .26 and servings of vegetables from 24 hour recall = .24. Coefficient to average of vegetables =.34 and fiber = .24.
External Validity		
Sensitive to Change		
Related to Outcome(s)	**X**	Correlation to serum carotenoid level =.28.
Other	**X**	A Flesch Reading Ease score of 96 and a Flesch Kincaid score of 2.8 indicates less than fourth grade reading level.

Notes:

Citations: Murphy SP et al. 1998; Murphy SP et al. 2001; Townsend MS et al. 2003.

During the past week did you have eggs? (Y, N)

Preliminary Rank High **Instrument** Food Behavior Checklist (1997)

Administration

Population	Local
Subgroup	African American and White FSP participants from 7 counties in CA. 8 California counties among women eligible for food stamps. 9 counties in California of women receiving food stamps.
Sample Size(s)	n=95, n=100, n=132.
Mode	Interviewer:Telephone and in-person among a group.

	Documented	**Description**
Other Languages	**X**	Spanish
Low-Income	**X**	
Low Education Level		

Evidence

Reliability		Control group reliability test not significant.
Internal Validity	**X**	Correlation coefficient to fat from 24 hour recall = .22. Coefficient to fat .23.
External Validity		
Sensitive to Change	**X**	p value = <.05
Related to Outcome(s)		No significant correlation to serum carotenoid level.
Other	**X**	A Flesch Reading Ease score of 96 and a Flesch Kincaid score of 2.8 indicates less than fourth grade reading level.

Notes:

Citations: Murphy SP et al. 1998; Murphy SP et al. 2001; Townsend MS et al. 2003.

If you eat eggs, about how many eggs do you usually eat in a week? (#)

Preliminary Rank High **Instrument** Food Behavior Checklist (1997)

Administration

Population	Local
Subgroup	African American and White FSP participants from 7 counties in CA. 8 California counties among women eligible for food stamps. 9 counties in California of women receiving food stamps.
Sample Size(s)	n=95, n=100, n=132.
Mode	Interviewer:Telephone and in-person among a group.

	Documented	**Description**
Other Languages	**X**	Spanish
Low-Income	**X**	
Low Education Level		

Evidence

Reliability	**X**	Test-retest correlation coefficient = .75.
Internal Validity	**X**	Correlation coefficient to fat from 24 hour recall = .29. Coefficient to fat = .23 and saturated fat = .25.
External Validity		
Sensitive to Change	**X**	p value = <.05
Related to Outcome(s)		No significant correlation to serum carotenoid level.
Other	**X**	A Flesch Reading Ease score of 96 and a Flesch Kincaid score of 2.8 indicates less than fourth grade reading level.

Notes:

Citations: Murphy SP et al. 1998; Murphy SP et al. 2001; Townsend MS et al. 2003.

During the past week did you have fish? (Y, N)

Preliminary Rank High **Instrument** Food Behavior Checklist (1997)

Administration

Population	Local
Subgroup	African American and White FSP participants from 7 counties in CA. 8 California counties among women eligible for food stamps. 9 counties in California of women receiving food stamps.
Sample Size(s)	n=95, n=100, n=132.
Mode	Interviewer:Telephone and in-person among a group.

	Documented	Description
Other Languages	X	Spanish
Low-Income	X	
Low Education Level		

Evidence

Reliability	X	Test-retest correlation coefficient = .68.
Internal Validity	X	Correlation coefficient to servings of fruit from 24 hour recall = .21. Coefficient to % energy from fat = .23.
External Validity		
Sensitive to Change		
Related to Outcome(s)		No significant correlation to serum carotenoid level.
Other	X	A Flesch Reading Ease score of 96 and a Flesch Kincaid score of 2.8 indicates less than fourth grade reading level.

Notes:

Citations: Murphy SP et al. 1998; Murphy SP et al. 2001; Townsend MS et al. 2003.

In the past month, how often did you...When eating chicken, have it baked or broiled? (usually/always, often, sometimes, rarely, never, NA)

Preliminary Rank Medium **Instrument** Food Habits Questionnaire (1990)

Administration

Population	Local
Subgroup	Women ages 49-59 years; women ages 45-69.
Sample Size(s)	n=97; n=1,814.
Mode	Self:Paper/pencil; Interviewer:Telephone.

	Documented	Description
Other Languages		
Low-Income	X	8.8% made less than $20,000/yr.
Low Education Level		High school graduates or above.

Evidence

Reliability		Was not assigned to a group that was tested.
Internal Validity		Was not assigned to a group that was tested.
External Validity		
Sensitive to Change	X	The change between the percent of energy from fat and fat-related diet habits scale between baseline and year 1 = 0.14.
Related to Outcome(s)	X	See notes.
Other		

Notes: Spoon MP et al. 2002 also evaluates a modified FHQ. The article does not specify how questions were grouped, but for "replace with fruit" group, internal consistency=.69, test re-test=.48, and no significant relationship with total fat.

Citations: Kristal AR et al. 1990; Kristal AR et al. 1994; Spoon MP et al. 2002.

Variety

Do you ever eat poultry such as chicken and turkey? Please include foods that are made with poultry such as soups, sandwiches, stews and salads. (Y, N)

Preliminary Rank High **Instrument** NHANES Diet Behavior and Nutrition Sample Person Questionnaire 1999-2003

Administration

Population	National
Subgroup	Nationally representative; Question for 60+ years of age only; Survey oversamples older persons (60 years and over), African Americans, Mexican Americans, low income persons (less than 130 percent of poverty), and adolescents 12-19 years old.
Sample Size(s)	n=approximately 7,000 interviewed annually (all ages).
Mode	Interviewer:In-person interview; trained interviewer using CAPI; individual setting at respondent's home.

	Documented	**Description**
Other Languages	**X**	Spanish
Low-Income	**X**	
Low Education Level		

Evidence

Reliability	**X**	Some items underwent reliability testing.
Internal Validity		
External Validity		
Sensitive to Change		
Related to Outcome(s)		
Other	**X**	New questions were added or modified based on recommendations from survey collaborators, NCHS staff, and other interagency work groups, and through large-scale field testing of English-Spanish speaking participants.

Notes:

Citations: NCHS/NHANES 2004; An C et al. 2003.

Variety

Do you ever eat meat such as beef, pork, lamb and veal? Please include foods that are made with meat such as soups, stews, sandwiches, lunch meats, and casseroles. (Y, N)

Preliminary Rank High **Instrument** NHANES Diet Behavior and Nutrition Sample Person Questionnaire 1999-2003

Administration

Population	National
Subgroup	Nationally representative; Question for 60+ years of age only; Survey oversamples older persons (60 years and over), African Americans, Mexican Americans, low income persons (less than 130 percent of poverty), and adolescents 12-19 years old.
Sample Size(s)	n=approximately 7,000 interviewed annually (all ages).
Mode	Interviewer:In-person interview; trained interviewer using CAPI; individual setting at respondent's home.

	Documented	**Description**
Other Languages	**X**	Spanish
Low-Income	**X**	
Low Education Level		

Evidence

Reliability	**X**	Some items underwent reliability testing.
Internal Validity		
External Validity		
Sensitive to Change		
Related to Outcome(s)		
Other	**X**	New questions were added or modified based on recommendations from survey collaborators, NCHS staff, and other interagency work groups, and through large-scale field testing of English-Spanish speaking participants.

Notes: Consider revising to "red" meat.

Citations: NCHS/NHANES 2004; An C et al. 2003.

Variety

On an average day, how many helpings of the following kinds of foods do you eat? Protein foods, such as meat, fish, seafood, chicken, turkey, or eggs. Also include protein foods, such as peanut butter or foods that are made from dried beans, such as bean soup, baked beans, or refried beans, meat substitutes and soy protein foods such as tofu. (# OF HELPINGS PER DAY; NONE, NEVER, OR RARELY EAT THESE FOODS)

Preliminary Rank High **Instrument** NHANES Diet Behavior and Nutrition Sample Person Questionnaire 1999-2003

Administration

Population	National
Subgroup	Nationally representative; Question for 60+ years of age only; Survey oversamples older persons (60 years and over), African Americans, Mexican Americans, low income persons (less than 130 percent of poverty), and adolescents 12-19 years old.
Sample Size(s)	n=approximately 7,000 interviewed annually (all ages).
Mode	Interviewer:In-person interview; trained interviewer using CAPI; individual setting at respondent's home.

	Documented	**Description**
Other Languages	**X**	Spanish
Low-Income	**X**	
Low Education Level		

Evidence

Reliability	**X**	Some items underwent reliability testing.
Internal Validity		
External Validity		
Sensitive to Change		
Related to Outcome(s)		
Other	**X**	New questions were added or modified based on recommendations from survey collaborators, NCHS staff, and other interagency work groups, and through large-scale field testing of English-Spanish speaking participants.

Notes: Response categories are given to the respondent on the DBQ6 hand card. The sizes of helpings were not defined and responses represent "number of helpings" as determined by the respondent.

Citations: NCHS/NHANES 2004; An C et al. 2003.

FAT

Fat

How often do you use butter, margarine, or mayonnaise on your bread or tortillas? Would you say _____? (always, sometimes, rarely, never)

Preliminary Rank Medium **Instrument** California Dietary Practices Survey (2001)

Administration

Population	State
Subgroup	Adults in California, oversampling of low-income, African American, and Latino participants.
Sample Size(s)	n=1,500-1,700 adults biennially.
Mode	Interviewer:Telephone (RDD).

	Documented	**Description**
Other Languages	**X**	Spanish
Low-Income	**X**	
Low Education Level		

Evidence

Reliability
Internal Validity
External Validity
Sensitive to Change
Related to Outcome(s)
Other

Notes:

Citations: Oppen M et al. 2002.

Now think about the foods you eat. Would you say you always, sometimes, rarely, or never: Use low-calorie instead of regular salad dressing? (always, sometimes, rarely, never)

Preliminary Rank Medium **Instrument** Diet and Health Knowledge Survey (DHKS) 1994-1996 (conducted as follow-up to CSFII)

Administration

Population	National
Subgroup	Nationally representative; Adults 20+ years of age; Oversampling of low-income.
Sample Size(s)	n=5,649 in national study; n=1,196 for Obayashi S et al 2003 analysis.
Mode	Interviewer:Telephone interview; Trained interviewer.

	Documented	Description
Other Languages		
Low-Income	X	
Low Education Level		10.8% had less than a HS degree in Obayashi S et al. 2003.

Evidence

Reliability		
Internal Validity		
External Validity		
Sensitive to Change		
Related to Outcome(s)		
Other	X	Other tests for reliability and validity were conducted on the DHKS 1989-1991 instrument.

Notes: DHKS data indicate that many low-income adults do not know specific facts related to the health consequences or benefits of certain dietary practices, lack confidence that their diets comply with healthful dietary practices (especially among FSP participants), do not engage in dietary habits to lower fat and cholesterol, do not meet the Food Guide Pyramid or Dietary Guidelines recommendations, and have inadequate usual intakes of several micronutrients; DHKS data provide little evidence of differences in dietary intake between FSP participants and other low-income nonparticipants. DHKS 1994-1996 results cannot be compared to DHKS 1989-1991 results.

Citations: USDA/ARS 2004; Gleason P et al. 2000; Obayashi S et al. 2003; Capps O et al. 2002.

Now think about the foods you eat. Would you say you always, sometimes, rarely, or never: Eat ice milk, frozen yogurt, or sherbet instead of ice cream? (always, sometimes, rarely, never)

Preliminary Rank High **Instrument** Diet and Health Knowledge Survey (DHKS) 1994-1996 (conducted as follow-up to CSFII)

Administration

Population	National
Subgroup	Nationally representative; Adults 20+ years of age; Oversampling of low-income.
Sample Size(s)	n=5,649 in national study; n=1,196 for Obayashi S et al 2003 analysis.
Mode	Interviewer:Telephone interview; Trained interviewer.

	Documented	Description
Other Languages		
Low-Income	X	
Low Education Level		10.8% had less than a HS degree in Obayashi S et al. 2003.

Evidence

Reliability		
Internal Validity		
External Validity		
Sensitive to Change		
Related to Outcome(s)	X	Significant predictor of total fat intake.
Other	X	Other tests for reliability and validity were conducted on the DHKS 1989-1991 instrument.

Notes: DHKS data indicate that many low-income adults do not know specific facts related to the health consequences or benefits of certain dietary practices, lack confidence that their diets comply with healthful dietary practices (especially among FSP participants), do not engage in dietary habits to lower fat and cholesterol, do not meet the Food Guide Pyramid or Dietary Guidelines recommendations, and have inadequate usual intakes of several micronutrients; DHKS data provide little evidence of differences in dietary intake between FSP participants and other low-income nonparticipants. DHKS 1994-1996 results cannot be compared to DHKS 1989-1991 results.

Citations: USDA/ARS 2004; Gleason P et al. 2000; Obayashi S et al. 2003; Capps O et al. 2002.

Fat

Think about your eating habits over the past year or so. About how often do you eat the following foods? Remember breakfast, lunch, dinner, snacks, and eating out: bacon or breakfast sausage? (1/month or less; 2-3 times a months; 1-2, 3-4, 5+ times a week)

Preliminary Rank Medium **Instrument** Fat Screener (1996-2002)

Administration

Population Local

Subgroup Multi-ethnic group of one company's employees in the San Francisco area.

Sample Size(s) n=208.

Mode Self:Paper/pen. Available online.

	Documented	Description
Other Languages		
Low-Income		
Low Education Level		

Evidence

Reliability		
Internal Validity	**X**	Criteria: Meat/Snack score with FFQ correlation coefficients = .69 total fat, .72 saturated fat.
External Validity		
Sensitive to Change		
Related to Outcome(s)		
Other		

Notes:

Citations: Block G et al. 2000.

Fat

Think about your eating habits over the past year or so. About how often do you eat the following foods? Remember breakfast, lunch, dinner, snacks, and eating out: cold cuts, lunch meats, ham (not low fat)? (1/month or less; 2-3 times a months; 1-2, 3-4, 5+ times a week)

Preliminary Rank Medium **Instrument** Fat Screener (1996-2002)

Administration

Population	Local
Subgroup	Multi-ethnic group of one company's employees in the San Francisco area.
Sample Size(s)	n=208.
Mode	Self:Paper/pen. Available online.

	Documented	**Description**
Other Languages		
Low-Income		
Low Education Level		

Evidence

Reliability		
Internal Validity	**X**	Criteria: Meat/Snack score with FFQ correlation coefficients = .69 total fat, .72 saturated fat.
External Validity		
Sensitive to Change		
Related to Outcome(s)		
Other		

Notes:

Citations: Block G et al. 2000.

Fat

Think about your eating habits over the past year or so. About how often do you eat the following foods? Remember breakfast, lunch, dinner, snacks, and eating out: French fries, fried potatoes? (1/month or less; 2-3 times a months; 1-2, 3-4, 5+ times a week)

Preliminary Rank Medium **Instrument** Fat Screener (1996-2002)

Administration

Population Local

Subgroup Multi-ethnic group of one company's employees in the San Francisco area.

Sample Size(s) n=208.

Mode Self:Paper/pen. Available online.

	Documented	**Description**
Other Languages		
Low-Income		
Low Education Level		

Evidence

Reliability		
Internal Validity	**X**	Criteria: Meat/Snack score with FFQ correlation coefficients = .69 total fat, .72 saturated fat.
External Validity		
Sensitive to Change		
Related to Outcome(s)		
Other		

Notes:

Citations: Block G et al. 2000.

Fat

Think about how you usually do things now. Do you eat low-fat instead of high-fat foods? (usually/always, often, sometimes, rarely, never)

Preliminary Rank Ideal **Instrument** Food Behavior Checklist (1997)

Administration

Population	Local
Subgroup	African American and White FSP participants from 7 counties in CA. 8 California counties among women eligible for food stamps. 9 counties in California of women receiving food stamps.
Sample Size(s)	n=95, n=100, n=132.
Mode	Interviewer:Telephone and in-person among a group.

	Documented	**Description**
Other Languages	**X**	Spanish
Low-Income	**X**	
Low Education Level		

Evidence

Reliability		Control group reliability test not significant. Test-retest correlation was not significant.
Internal Validity	**X**	Coefficient to carotene =.31.
External Validity		
Sensitive to Change		
Related to Outcome(s)	**X**	Correlation to serum carotenoid level =.48.
Other	**X**	A Flesch Reading Ease score of 96 and a Flesch Kincaid score of 2.8 indicates less than fourth grade reading level.

Notes:

Citations: Murphy SP et al. 1998; Murphy SP et al. 2001; Townsend MS et al. 2003.

Think about how you usually do things now. When you eat hamburger, chicken, fish, or other meat, is it fried? (usually/always, often, sometimes, rarely, never)

Preliminary Rank High **Instrument** Food Behavior Checklist (1997)

Administration

Population	Local
Subgroup	African American and White FSP participants from 7 counties in CA. 8 California counties among women eligible for food stamps. 9 counties in California of women receiving food stamps.
Sample Size(s)	n=95, n=100, n=132.
Mode	Interviewer:Telephone and in-person among a group.

	Documented	**Description**
Other Languages	**X**	Spanish
Low-Income	**X**	
Low Education Level		

Evidence

Reliability		Control group reliability test not significant.
Internal Validity	**X**	Correlation coefficient to HEI from 24 hour recall = .19.
External Validity		
Sensitive to Change		
Related to Outcome(s)		
Other		

Notes:

Citations: Murphy SP et al. 1998; Murphy SP et al. 2001; Townsend MS et al. 2003.

In the past month, how often did you…Put butter or margarine on cooked vegetables? (usually/always, often, sometimes, rarely, never, NA)

Preliminary Rank Medium **Instrument** Food Habits Questionnaire (1990)

Administration

Population	Local
Subgroup	Women ages 49-59 years; women ages 45-69.
Sample Size(s)	n=97; n=1,814.
Mode	Self:Paper/pencil; Interviewer:Telephone.

	Documented	Description
Other Languages		
Low-Income	X	8.8% made less than $20,000/yr.
Low Education Level		High school graduates or above.

Evidence

Reliability	X	Within "avoid fat as seasoning" group test-retest correlation coefficient =.90, internal consistency =.76.
Internal Validity	X	Within "avoid fat as seasoning" group diet recall and FFQ correlation coefficient =-.57.
External Validity		
Sensitive to Change	X	The change between the percent of energy from fat and fat-related diet habits scale between baseline and year 1 = 0.14.
Related to Outcome(s)	X	See notes.
Other		

Notes: Spoon MP et al. 2002 also evaluates a modified FHQ. The article does not specify how questions were grouped, but for "replace with fruit" group, internal consistency=.69, test re-test=.48, and no significant relationship with total fat.

Citations: Kristal AR et al. 1990; Kristal AR et al. 1994; Spoon MP et al. 2002.

In the past month, how often did you…Eat boiled or baked potatoes without butter or margarine? (usually/always, often, sometimes, rarely, never, NA)

Preliminary Rank Medium **Instrument** Food Habits Questionnaire (1990)

Administration

Population	Local
Subgroup	Women ages 49-59 years; women ages 45-69.
Sample Size(s)	n=97; n=1,814.
Mode	Self:Paper/pencil; Interviewer:Telephone.

	Documented	Description
Other Languages		
Low-Income	X	8.8% made less than $20,000/yr.
Low Education Level		High school graduates or above.

Evidence

Reliability	X	Within "avoid fat as seasoning" group test-retest correlation coefficient =.90, internal consistency = .76.
Internal Validity	X	Within "avoid fat as seasoning" group diet recall and FFQ correlation coefficient =-.57.
External Validity		
Sensitive to Change	X	The change between the percent of energy from fat and fat-related diet habits scale between baseline and year 1 = 0.14.
Related to Outcome(s)	X	See notes.
Other		

Notes: Spoon MP et al. 2002 also evaluates a modified FHQ. The article does not specify how questions were grouped, but for "replace with fruit" group, internal consistency=.69, test re-test=.48, and no significant relationship with total fat.

Citations: Kristal AR et al. 1990; Kristal AR et al. 1994; Spoon MP et al. 2002.

In the past month, how often did you…Put sour cream, cheese or other sauces on vegetables and potatoes? (usually/always, often, sometimes, rarely, never, NA)

Preliminary Rank Medium **Instrument** Food Habits Questionnaire (1990)

Administration

Population	Local
Subgroup	Women ages 49-59 years; women ages 45-69.
Sample Size(s)	n=97; n=1,814.
Mode	Self:Paper/pencil; Interviewer:Telephone.

	Documented	**Description**
Other Languages		
Low-Income	**X**	8.8% made less than $20,000/yr.
Low Education Level		High school graduates or above.

Evidence

Reliability	**X**	Within "avoid fat as seasoning" group test-retest correlation coefficient =.90, internal consistency =.76.
Internal Validity	**X**	Within "avoid fat as seasoning" group diet recall and FFQ correlation coefficient =-.57.
External Validity		
Sensitive to Change	**X**	The change between the percent of energy from fat and fat-related diet habits scale between baseline and year 1 = 0.14.
Related to Outcome(s)	**X**	See notes.
Other		

Notes: Spoon MP et al. 2002 also evaluates a modified FHQ. The article does not specify how questions were grouped, but for "replace with fruit" group, internal consistency=.69, test re-test=.48, and no significant relationship with total fat.

Citations: Kristal AR et al. 1990; Kristal AR et al. 1994; Spoon MP et al. 2002.

How often do you use fat or oil in cooking? For example, in frying eggs, meat, or vegetables (# per day, week, month)

Preliminary Rank High **Instrument** Health Habits and History Questionnaire (1987)

Administration

Population	State
Subgroup	Cancer Prevention Study (CPS-II) individuals ages 40-92 in CA, CT, FL, GA, IL, IA, LA, MD, MA, MI, MN, MO, NJ, NM, NY, NC, PA, UT, VA, WA, and WI.
Sample Size(s)	n=184,194.
Mode	Self:Paper/pencil; Interviewer:Computer assisted with DIETQL.

	Documented	**Description**
Other Languages	**X**	Spanish and Italian
Low-Income		
Low Education Level		6.7% have less than HS degree.

Evidence

Reliability		Only checklist (not questions) was tested.
Internal Validity	**X**	Content validity from experts.
External Validity		
Sensitive to Change		
Related to Outcome(s)		
Other		

Notes:

Citations: Calle EE et al. 2001; NCI 1997; Smucker R et al. 1989.

When you eat chicken or other types of poultry, how often do you eat the skin? Would you say _____? (never, rarely or seldom, sometimes or occasionally, often or very often, always)

Preliminary Rank High **Instrument** NHANES Diet Behavior and Nutrition Sample Person Questionnaire 1999-2003

Administration

Population	National
Subgroup	Nationally representative; Question for 60+ years of age only; Survey oversamples older persons (60 years and over), African Americans, Mexican Americans, low income persons (less than 130 percent of poverty), and adolescents 12-19 years old.
Sample Size(s)	n=approximately 7,000 interviewed annually (all ages).
Mode	Interviewer:In-person interview; trained interviewer using CAPI; individual setting at respondent's home.

	Documented	**Description**
Other Languages	**X**	Spanish
Low-Income	**X**	
Low Education Level		

Evidence

Reliability	**X**	Some items underwent reliability testing.
Internal Validity		
External Validity		
Sensitive to Change		
Related to Outcome(s)		
Other	**X**	New questions were added or modified based on recommendations from survey collaborators, NCHS staff, and other interagency work groups, and through large-scale field testing of English-Spanish speaking participants.

Notes:

Citations: NCHS/NHANES 2004; An C et al. 2003.

When you eat meat, how often do you eat the visible fat? Would you say _____? (never, rarely or seldom, sometimes or occasionally, often or very often, always)

Preliminary Rank High **Instrument** NHANES Diet Behavior and Nutrition Sample Person Questionnaire 1999-2003

Administration

Population	National
Subgroup	Nationally representative; Question for 60+ years of age only; Survey oversamples older persons (60 years and over), African Americans, Mexican Americans, low income persons (less than 130 percent of poverty), and adolescents 12-19 years old.
Sample Size(s)	n=approximately 7,000 interviewed annually (all ages).
Mode	Interviewer:In-person interview; trained interviewer using CAPI; individual setting at respondent's home.

	Documented	**Description**
Other Languages	X	Spanish
Low-Income	X	
Low Education Level		

Evidence

Reliability	X	Some items underwent reliability testing.
Internal Validity		
External Validity		
Sensitive to Change		
Related to Outcome(s)		
Other	X	New questions were added or modified based on recommendations from survey collaborators, NCHS staff, and other interagency work groups, and through large-scale field testing of English-Spanish speaking participants.

Notes:

Citations: NCHS/NHANES 2004; An C et al. 2003.

CALCIUM FOOD SOURCES

Calcium Food Sources

Yesterday, did you drink any milk or drinks made with milk, such as chocolate milk, fast-food milk shake, chai, latte, or have milk on cereal? (Y, N)

Preliminary Rank Medium **Instrument** California Dietary Practices Survey (2001)

Administration

Population	State
Subgroup	Adults in California, oversampling of low-income, African American, and Latino participants.
Sample Size(s)	n=1,500-1,700 adults biennially.
Mode	Interviewer:Telephone (RDD).

	Documented	Description
Other Languages	**X**	Spanish
Low-Income	**X**	
Low Education Level		

Evidence

Reliability
Internal Validity
External Validity
Sensitive to Change
Related to Outcome(s)
Other

Notes:

Citations: Oppen M et al. 2002.

Calcium Food Sources

Yesterday, did you eat any cheese, like on a cheeseburger, pizza, in a casserole, on a sandwich, or as a snack? (Y, N)

Preliminary Rank Medium **Instrument** California Dietary Practices Survey (2001)

Administration

Population State

Subgroup Adults in California, oversampling of low-income, African American, and Latino participants.

Sample Size(s) n=1,500-1,700 adults biennially.

Mode Interviewer:Telephone (RDD).

	Documented	Description
Other Languages	X	Spanish
Low-Income	X	
Low Education Level		

Evidence

Reliability

Internal Validity

External Validity

Sensitive to Change

Related to Outcome(s)

Other

Notes:

Citations: Oppen M et al. 2002.

Calcium Food Sources

Now think about the foods you eat. Would you say you always, sometimes, rarely, or never: Use skim or 1% milk instead of 2% or whole milk? (always, sometimes, rarely, never)

Preliminary Rank High **Instrument** Diet and Health Knowledge Survey (DHKS) 1994-1996 (conducted as follow-up to CSFII)

Administration

Population	National
Subgroup	Nationally representative; Adults 20+ years of age; Oversampling of low-income.
Sample Size(s)	n=5,649 in national study; n=1,196 for Obayashi S et al 2003 analysis; n=5,512 for Kuchler F et al 2002 analysis; n=2419 adult women for Lin BH et al 2004 analysis.
Mode	Interviewer:Telephone interview; Trained interviewer.

	Documented	**Description**
Other Languages		
Low-Income	**X**	
Low Education Level		10.8% had less than a HS degree in Obayashi S et al. 2003.

Evidence

Reliability		
Internal Validity		
External Validity		
Sensitive to Change		
Related to Outcome(s)	**X**	Significant predictor of total and saturated fat intake; exclusive use of skim or lowfat milk is associated with higher BMI values by 0.76 for women (t-ratio=2.47, P<0.05) and 1.09 for men (t-ratio=3.89, P<0.01); low-income women who exclusively drink skim or lowfat milk had a higher BMI by 0.77 (P<0.10, t-ratio=1.77) than other low-income women; high-income women who exclusively drink skim or lowfat milk had a higher BMI by 0.67 (P<0.01, t-ratio=2.47) than other high-income women.
Other	**X**	Other tests for reliability and validity were conducted on the DHKS 1989-1991 instrument.

Notes: Relates to "healthy weight." DHKS data indicate that many low-income adults do not know specific facts related to the health consequences or benefits of certain dietary practices, lack confidence that their diets comply with healthful dietary practices (especially among FSP participants), do not engage in dietary habits to lower fat and cholesterol, do not meet the Food Guide Pyramid or Dietary Guidelines recommendations, and have inadequate usual intakes of several micronutrients; DHKS data provide little evidence of differences in dietary intake between FSP participants and other low-income nonparticipants. DHKS 1994-1996 results cannot be compared to DHKS 1989-1991 results.

Citations: USDA/ARS 2004; Gleason P et al. 2000; Obayashi S et al. 2003; Capps O et al. 2002; Kuchler F et al. 2002; Lin BH et al. 2004.

Calcium Food Sources

Do you use low-fat (2%), very low-fat (1%), buttermilk or non-fat skim milk? (usually/always, often, sometimes, rarely, never)

Preliminary Rank High **Instrument** Food Behavior Checklist (1997)

Administration

Population	Local
Subgroup	African American and White FSP participants from 7 counties in CA. 8 California counties among women eligible for food stamps. 9 counties in California of women receiving food stamps.
Sample Size(s)	n=95, n=100, n=132.
Mode	Interviewer:Telephone and in-person among a group.

	Documented	Description
Other Languages	X	Spanish
Low-Income	X	
Low Education Level		

Evidence

Reliability		Control group reliability test not significant.
Internal Validity	X	Correlation coefficient to HEI from 24 hour recall = .18.
External Validity		
Sensitive to Change		
Related to Outcome(s)		
Other		

Notes:

Citations: Murphy SP et al. 1998; Murphy SP et al. 2001; Townsend MS et al. 2003.

Calcium Food Sources

Do you drink milk daily? (usually/always, often, sometimes, rarely, never)

Preliminary Rank High **Instrument** Food Behavior Checklist (1997)

Administration

Population	Local
Subgroup	African American and White FSP participants from 7 counties in CA. 8 California counties among women eligible for food stamps. 9 counties in California of women receiving food stamps.
Sample Size(s)	n=95, n=100, n=132.
Mode	Interviewer:Telephone and in-person among a group.

	Documented	Description
Other Languages	X	Spanish
Low-Income	X	
Low Education Level		

Evidence

Reliability	X	Test-retest correlation coefficient = .77.
Internal Validity	X	Correlation coefficient to servings of dairy from 24 hour recall = .32 and Calcium Foods = .29. Coefficient to Calcium Foods = .30.
External Validity		
Sensitive to Change		
Related to Outcome(s)		No significant correlation to serum carotenoid level.
Other	X	A Flesch Reading Ease score of 96 and a Flesch Kincaid score of 2.8 indicates less than fourth grade reading level.

Notes:

Citations: Murphy SP et al. 1998; Murphy SP et al. 2001; Townsend MS et al. 2003.

Calcium Food Sources

During the past week did you have milk as a beverage or on cereal? (Y, N)

Preliminary Rank High **Instrument** Food Behavior Checklist (1997)

Administration

Population Local

Subgroup African American and White FSP participants from 7 counties in CA. 8 California counties among women eligible for food stamps. 9 counties in California of women receiving food stamps.

Sample Size(s) n=95, n=100, n=132.

Mode Interviewer:Telephone and in-person among a group.

	Documented	Description
Other Languages	X	Spanish
Low-Income	X	
Low Education Level		

Evidence

Reliability	X	Test-retest correlation coefficient = .38.
Internal Validity	X	Correlation coefficient to servings of dairy from 24 hour recall = .25 and Calcium Foods =.25. Coefficient to average of dairy = .23 and Calcium Foods = .21.
External Validity		
Sensitive to Change		
Related to Outcome(s)		No significant correlation to serum carotenoid level.
Other	X	A Flesch Reading Ease score of 96 and a Flesch Kincaid score of 2.8 indicates less than fourth grade reading level.

Notes:

Citations: Murphy SP et al. 1998; Murphy SP et al. 2001; Townsend MS et al. 2003.

Calcium Food Sources

When you drank milk as a beverage, what kind was it usually? (whole milk, 2% milk, 1% milk, skim milk)

Preliminary Rank Medium **Instrument** Massachusetts' TreatWell 5 A Day Program (1996)

Administration

Population Local

Subgroup Massachusetts' TreatWell 5 A Day Program (22 community health centers, 23% Hispanic, 18% African-American, 20% had 12th grade education or less, 84% female).

Sample Size(s) n=1,359 (only women's responses included in analysis n=1,096).

Mode

	Documented	Description
Other Languages		
Low-Income		
Low Education Level		

Evidence

Reliability		
Internal Validity	X	r=0.72 for low-fat milk servings and r=0.31 for fat when compared to Willett's 61-item FFQ.
External Validity		
Sensitive to Change		
Related to Outcome(s)		
Other		

Notes:

Citations: Havas S et al. 1994; Hunt MK et al. 1998; Sorensen G et al. 1999.

Calcium Food Sources

On an average day, how many helpings of the following kinds of foods do you eat? Milk or dairy foods that are made from milk, such as cheese, cottage cheese, ice cream, milk shakes, or yogurt. (# OF HELPINGS PER DAY; NONE, NEVER, OR RARELY EAT THESE FOODS)

Preliminary Rank High **Instrument** NHANES Diet Behavior and Nutrition Sample Person Questionnaire 1999-2003

Administration

Population	National
Subgroup	Nationally representative; Question for 60+ years of age only; Survey oversamples older persons (60 years and over), African Americans, Mexican Americans, low income persons (less than 130 percent of poverty), and adolescents 12-19 years old.
Sample Size(s)	n=approximately 7,000 interviewed annually (all ages).
Mode	Interviewer:In-person interview; trained interviewer using CAPI; individual setting at respondent's home.

	Documented	**Description**
Other Languages	**X**	Spanish
Low-Income	**X**	
Low Education Level		

Evidence

Reliability	**X**	Some items underwent reliability testing.
Internal Validity		
External Validity		
Sensitive to Change		
Related to Outcome(s)		
Other	**X**	New questions were added or modified based on recommendations from survey collaborators, NCHS staff, and other interagency work groups, and through large-scale field testing of English-Spanish speaking participants.

Notes: Rewording suggested: eliminate "Milk or" since "milk" is covered in another recommended question. The sizes of helpings were not defined and responses represent "number of helpings" as determined by the respondent.

Citations: NCHS/NHANES 2004; An C et al. 2003.

NONALCOHOLIC BEVERAGES

Nonalcoholic Beverages

Yesterday, how many cans or glasses or regular soda (such as cola, lemon-lime), sweetened carbonated beverages (such as Clearly Canadian), or sweetened non-carbonated beverages (such as Gatorade, Snapple, SoBe) did you drink? [NOTE TO INTERVIEWER: THAT WOULD BE A LARGE GLASS OR A 12 OZ CAN OR BOTTLE, DO NOT INCLUDE DIET DRINKS OR CARBONATED WATER]. (#)

Preliminary Rank Medium **Instrument** California Dietary Practices Survey (2001)

Administration

Population	State
Subgroup	Adults in California, oversampling of low-income, African American, and Latino participants.
Sample Size(s)	n=1,500-1,700 adults biennially
Mode	Interviewer:Telephone (RDD).

	Documented	**Description**
Other Languages	**X**	Spanish
Low-Income	**X**	
Low Education Level		

Evidence

Reliability
Internal Validity
External Validity
Sensitive to Change
Related to Outcome(s)
Other

Notes:

Citations: Oppen M et al. 2002.

Do you drink diet soft drinks? (usually/always, often, sometimes, rarely, never)

Preliminary Rank Medium **Instrument** Food Behavior Checklist (1997)

Administration

Population	Local
Subgroup	African American and White FSP participants from 7 counties in CA. 8 California counties among women eligible for food stamps. 9 counties in California of women receiving food stamps.
Sample Size(s)	n=95, n=100, n=132.
Mode	Interviewer:Telephone and in-person among a group.

	Documented	Description
Other Languages	X	Spanish
Low-Income	X	
Low Education Level		

Evidence

Reliability	Control group reliability test not significant.
Internal Validity	No significant correlations.
External Validity	
Sensitive to Change	
Related to Outcome(s)	
Other	

Notes:

Citations: Murphy SP et al. 1998; Murphy SP et al. 2001; Townsend MS et al. 2003.

Nonalcoholic Beverages

Do you drink regular soft drinks? (usually/always, often, sometimes, rarely, never)

Preliminary Rank High **Instrument** Food Behavior Checklist (1997)

Administration

Population	Local
Subgroup	African American and White FSP participants from 7 counties in CA. 8 California counties among women eligible for food stamps. 9 counties in California of women receiving food stamps.
Sample Size(s)	n=95, n=100, n=132.
Mode	Interviewer:Telephone and in-person among a group.

	Documented	**Description**
Other Languages	**X**	Spanish
Low-Income	**X**	
Low Education Level		

Evidence

Reliability	**X**	Test-retest correlation coefficient = .83.
Internal Validity	**X**	Correlation coefficient to HEI from 24 hour recall = .23.
External Validity		
Sensitive to Change	**X**	p value = <.0001
Related to Outcome(s)		No significant correlation to serum carotenoid level.
Other	**X**	A Flesch Reading Ease score of 96 and a Flesch Kincaid score of 2.8 indicates less than fourth grade reading level.

Notes:

Citations: Murphy SP et al. 1998; Murphy SP et al. 2001; Townsend MS et al. 2003.

Do you buy Kool-Aid, Gatorade Sunny Delight, or other fruit drink/punch? (usually/always, often, sometimes, rarely, never)

Preliminary Rank High **Instrument** Food Behavior Checklist (1997)

Administration

Population	Local
Subgroup	African American and White FSP participants from 7 counties in CA. 8 California counties among women eligible for food stamps. 9 counties in California of women receiving food stamps.
Sample Size(s)	n=95, n=100, n=132.
Mode	Interviewer:Telephone and in-person among a group.

	Documented	**Description**
Other Languages	**X**	Spanish
Low-Income	**X**	
Low Education Level		

Evidence

Reliability	**X**	Test-retest correlation coefficient = .72.
Internal Validity	**X**	Correlation coefficient to servings of fruit from 24 hour recall = .26 and HEI = .19. Coefficient to HEI=.26.
External Validity		
Sensitive to Change	**X**	p value = <.0001
Related to Outcome(s)		No significant correlation to serum carotenoid level.
Other	**X**	A Flesch Reading Ease score of 96 and a Flesch Kincaid score of 2.8 indicates less than fourth grade reading level.

Notes:

Citations: Murphy SP et al. 1998; Murphy SP et al. 2001; Townsend MS et al. 2003.

How often were your fruit drinks diet or sugar-free drinks? (almost never or never, about 1/4 of the time, about 1/2 of the time, about 3/4 of the time, almost always or always)

Preliminary Rank High **Instrument** NCI Diet History Questionnaire, NCI Food Propensity Questionnaire added and pilot tested in NHANES 2003

Administration

Population National, local

Subgroup Tested with Washington DC participants ages 25-70 (64% female, 14% African-American); tested in Eating at America's Table Study (nationally representative sample, RDD, 20-70 years of age, 79% White, 10% African-American, 51% women); RDD of adults 20-70 years old in Thompson FE et al. 2002b validation study with Eating at America's Table Study sample.

Sample Size(s) n=623 in Thompson FE et al. 2002a validation study; n=1,301 in Eating at America's Table Study; n=202 men and 260 women in smaller Thompson FE et al. 2002b validation study with Eating at America's Table Study sample.

Mode Self:Paper/pencil.

	Documented	Description
Other Languages	X	Spanish
Low-Income	X	
Low Education Level		4.8% had less than a HS degree in Eating at America's Table Study; 1% had less than a HS degree in Thompson FE et al. 2002a; 79% had more than a HS degree in Thompson FE et al. 2002b.

Evidence

Reliability		
Internal Validity	X	Compared to Daily Food Report: r=0.48 for women and r=0.49 for men for energy for entire instrument compared to four 24-hour recalls; adjusted deattenuated correlations for entire instrument across nutrients range from 0.51 to 0.77 for women and 0.41 to 0.83 for men compared to four 24-hour recalls; r=0.68 for entire instrument for men and 0.54 for women compared to four 24-hour recalls.
External Validity		
Sensitive to Change		
Related to Outcome(s)		
Other	X	Cognitive testing indicates instrument is easy to use; HHHG questions were redesigned based on cognitive think-aloud interviewing and incorporated into a test-DHQ.

Citations: NCI 2004; Thompson FE et al. 2002a; Subar AF et al. 2001; Thompson FE et al. 2002b; NCHS/NHANES 2004.

How often were these soft drinks, soda, or pop diet or sugar-free? (almost never or never, about 1/4 of the time, about 1/2 of the time, about 3/4 of the time, almost always or always)

Preliminary Rank High **Instrument** NCI Diet History Questionnaire, NCI Food Propensity Questionnaire added and pilot tested in NHANES 2003

Administration

Population National, local

Subgroup Tested with Washington DC participants ages 25-70 (64% female, 14% African-American); tested in Eating at America's Table Study (nationally representative sample, RDD, 20-70 years of age, 79% White, 10% African-American, 51% women); RDD of adults 20-70 years old in Thompson FE et al. 2002b validation study with Eating at America's Table Study sample.

Sample Size(s) n=623 in Thompson FE et al. 2002a validation study; n=1,301 in Eating at America's Table Study; n=202 men and 260 women in smaller Thompson FE et al. 2002b validation study with Eating at America's Table Study sample.

Mode Self:Paper/pencil.

	Documented	Description
Other Languages	X	Spanish
Low-Income	X	
Low Education Level		4.8% had less than a HS degree in Eating at America's Table Study; 1% had less than a HS degree in Thompson FE et al. 2002a; 79% had more than a HS degree in Thompson FE et al. 2002b.

Evidence

Reliability		
Internal Validity	X	Compared to Daily Food Report: r=0.48 for women and r=0.49 for men for energy for entire instrument compared to four 24-hour recalls; adjusted deattenuated correlations for entire instrument across nutrients range from 0.51 to 0.77 for women and 0.41 to 0.83 for men compared to four 24-hour recalls; r=0.68 for entire instrument for men and 0.54 for women compared to four 24-hour recalls.
External Validity		
Sensitive to Change		
Related to Outcome(s)		
Other	X	Cognitive testing indicates instrument is easy to use; HHHG questions were redesigned based on cognitive think-aloud interviewing and incorporated into a test-DHQ.

Citations: NCI 2004; Thompson FE et al. 2002a; Subar AF et al. 2001; Thompson FE et al. 2002b; NCHS/NHANES 2004.

How often did you drink other fruit drinks (such as cranberry cocktail, Hi-C, lemonade, or Kool-Aid, diet or regular)? (1 time per month or less, 2-3 times per month, 1-2 times per week, 3-4 times per week, 5-6 times per week, 1 time per day, 2-3 times per day, 4-5 times per day, 6 or more times per day)

Preliminary Rank High **Instrument** NCI Diet History Questionnaire, NCI Food Propensity Questionnaire added and pilot tested in NHANES 2003

Administration

Population National, local

Subgroup Tested with Washington DC participants ages 25-70 (64% female, 14% African-American); tested in Eating at America's Table Study (nationally representative sample, RDD, 20-70 years of age, 79% White, 10% African-American, 51% women); RDD of adults 20-70 years old in Thompson FE et al. 2002b validation study with Eating at America's Table Study sample.

Sample Size(s) n=623 in Thompson FE et al. 2002a validation study; n=1,301 in Eating at America's Table Study; n=202 men and 260 women in smaller Thompson FE et al. 2002b validation study with Eating at America's Table Study sample.

Mode Self:Paper/pencil.

	Documented	Description
Other Languages	X	Spanish
Low-Income	X	
Low Education Level		4.8% had less than a HS degree in Eating at America's Table Study; 1% had less than a HS degree in Thompson FE et al. 2002a; 79% had more than a HS degree in Thompson FE et al. 2002b.

Evidence

Reliability		
Internal Validity	X	Compared to Daily Food Report: r=0.48 for women and r=0.49 for men for energy for entire instrument compared to four 24-hour recalls; adjusted deattenuated correlations for entire instrument across nutrients range from 0.51 to 0.77 for women and 0.41 to 0.83 for men compared to four 24-hour recalls; r=0.68 for entire instrument for men and 0.54 for women compared to four 24-hour recalls.
External Validity		
Sensitive to Change		
Related to Outcome(s)		
Other	X	Cognitive testing indicates instrument is easy to use; HHHG questions were redesigned based on cognitive think-aloud interviewing and incorporated into a test-DHQ.

Citations: NCI 2004; Thompson FE et al. 2002a; Subar AF et al. 2001; Thompson FE et al. 2002b; NCHS/NHANES 2004.

Each time you drank fruit drinks, how much did you usually drink? (less than 1 cup/8 ounces, 1 to 2 cups/8 to 16 ounces, more than 2 cups/16 ounces)

Preliminary Rank High **Instrument** NCI Diet History Questionnaire, NCI Food Propensity Questionnaire added and pilot tested in NHANES 2003

Administration

Population National, local

Subgroup Tested with Washington DC participants ages 25-70 (64% female, 14% African-American); tested in Eating at America's Table Study (nationally representative sample, RDD, 20-70 years of age, 79% White, 10% African-American, 51% women); RDD of adults 20-70 years old in Thompson FE et al. 2002b validation study with Eating at America's Table Study sample.

Sample Size(s) n=623 in Thompson FE et al. 2002a validation study; n=1,301 in Eating at America's Table Study; n=202 men and 260 women in smaller Thompson FE et al. 2002b validation study with Eating at America's Table Study sample.

Mode Self:Paper/pencil.

	Documented	Description
Other Languages	X	Spanish
Low-Income	X	
Low Education Level		4.8% had less than a HS degree in Eating at America's Table Study; 1% had less than a HS degree in Thompson FE et al. 2002a; 79% had more than a HS degree in Thompson FE et al. 2002b.

Evidence

Reliability		
Internal Validity	X	Compared to Daily Food Report: r=0.48 for women and r=0.49 for men for energy for entire instrument compared to four 24-hour recalls; adjusted deattenuated correlations for entire instrument across nutrients range from 0.51 to 0.77 for women and 0.41 to 0.83 for men compared to four 24-hour recalls; r=0.68 for entire instrument for men and 0.54 for women compared to four 24-hour recalls.
External Validity		
Sensitive to Change		
Related to Outcome(s)		
Other	X	Cognitive testing indicates instrument is easy to use; HHHG questions were redesigned based on cognitive think-aloud interviewing and incorporated into a test-DHQ.

Citations: NCI 2004; Thompson FE et al. 2002a; Subar AF et al. 2001; Thompson FE et al. 2002b; NCHS/NHANES 2004.

Over the past 12 months, did you drink soft drinks, soda, or pop? (Y, N)

Preliminary Rank High **Instrument** NCI Diet History Questionnaire, NCI Food Propensity Questionnaire added and pilot tested in NHANES 2003

Administration

Population National, local

Subgroup Tested with Washington DC participants ages 25-70 (64% female, 14% African-American); tested in Eating at America's Table Study (nationally representative sample, RDD, 20-70 years of age, 79% White, 10% African-American, 51% women); RDD of adults 20-70 years old in Thompson FE et al. 2002b validation study with Eating at America's Table Study sample.

Sample Size(s) n=623 in Thompson FE et al. 2002a validation study; n=1,301 in Eating at America's Table Study; n=202 men and 260 women in smaller Thompson FE et al. 2002b validation study with Eating at America's Table Study sample.

Mode Self:Paper/pencil.

	Documented	Description
Other Languages	X	Spanish
Low-Income	X	
Low Education Level		4.8% had less than a HS degree in Eating at America's Table Study; 1% had less than a HS degree in Thompson FE et al. 2002a; 79% had more than a HS degree in Thompson FE et al. 2002b.

Evidence

Reliability		
Internal Validity	X	Compared to Daily Food Report: r=0.48 for women and r=0.49 for men for energy for entire instrument compared to four 24-hour recalls; adjusted deattenuated correlations for entire instrument across nutrients range from 0.51 to 0.77 for women and 0.41 to 0.83 for men compared to four 24-hour recalls; r=0.68 for entire instrument for men and 0.54 for women compared to four 24-hour recalls.
External Validity		
Sensitive to Change		
Related to Outcome(s)		
Other	X	Cognitive testing indicates instrument is easy to use; HHHG questions were redesigned based on cognitive think-aloud interviewing and incorporated into a test-DHQ.

Citations: NCI 2004; Thompson FE et al. 2002a; Subar AF et al. 2001; Thompson FE et al. 2002b; NCHS/NHANES 2004.

How often did you drink soft drinks, soda, or pop in the summer? (1 time per month or less, 2-3 times per month, 1-2 times per week, 3-4 times per week, 5-6 times per week, 1 time per day, 2-3 times per day, 4-5 times per day, 6 or more times per day)

Preliminary Rank High **Instrument** NCI Diet History Questionnaire, NCI Food Propensity Questionnaire added and pilot tested in NHANES 2003

Administration

Population National, local

Subgroup Tested with Washington DC participants ages 25-70 (64% female, 14% African-American); tested in Eating at America's Table Study (nationally representative sample, RDD, 20-70 years of age, 79% White, 10% African-American, 51% women); RDD of adults 20-70 years old in Thompson FE et al. 2002b validation study with Eating at America's Table Study sample.

Sample Size(s) n=623 in Thompson FE et al. 2002a validation study; n=1,301 in Eating at America's Table Study; n=202 men and 260 women in smaller Thompson FE et al. 2002b validation study with Eating at America's Table Study sample.

Mode Self:Paper/pencil.

	Documented	Description
Other Languages	X	Spanish
Low-Income	X	
Low Education Level		4.8% had less than a HS degree in Eating at America's Table Study; 1% had less than a HS degree in Thompson FE et al. 2002a; 79% had more than a HS degree in Thompson FE et al. 2002b.

Evidence

Reliability		
Internal Validity	X	Compared to Daily Food Report: r=0.48 for women and r=0.49 for men for energy for entire instrument compared to four 24-hour recalls; adjusted deattenuated correlations for entire instrument across nutrients range from 0.51 to 0.77 for women and 0.41 to 0.83 for men compared to four 24-hour recalls; r=0.68 for entire instrument for men and 0.54 for women compared to four 24-hour recalls.
External Validity		
Sensitive to Change		
Related to Outcome(s)		
Other	X	Cognitive testing indicates instrument is easy to use; HHHG questions were redesigned based on cognitive think-aloud interviewing and incorporated into a test-DHQ.

Citations: NCI 2004; Thompson FE et al. 2002a; Subar AF et al. 2001; Thompson FE et al. 2002b; NCHS/NHANES 2004.

How often did you drink soft drinks, soda, or pop during the rest of the year? (1 time per month or less, 2-3 times per month, 1-2 times per week, 3-4 times per week, 5-6 times per week, 1 time per day, 2-3 times per day, 4-5 times per day, 6 or more times per day)

Preliminary Rank High **Instrument** NCI Diet History Questionnaire, NCI Food Propensity Questionnaire added and pilot tested in NHANES 2003

Administration

Population National, local

Subgroup Tested with Washington DC participants ages 25-70 (64% female, 14% African-American); tested in Eating at America's Table Study (nationally representative sample, RDD, 20-70 years of age, 79% White, 10% African-American, 51% women); RDD of adults 20-70 years old in Thompson FE et al. 2002b validation study with Eating at America's Table Study sample.

Sample Size(s) n=623 in Thompson FE et al. 2002a validation study; n=1,301 in Eating at America's Table Study; n=202 men and 260 women in smaller Thompson FE et al. 2002b validation study with Eating at America's Table Study sample.

Mode Self:Paper/pencil.

	Documented	Description
Other Languages	X	Spanish
Low-Income	X	
Low Education Level		4.8% had less than a HS degree in Eating at America's Table Study; 1% had less than a HS degree in Thompson FE et al. 2002a; 79% had more than a HS degree in Thompson FE et al. 2002b.

Evidence

Reliability		
Internal Validity	X	Compared to Daily Food Report: r=0.48 for women and r=0.49 for men for energy for entire instrument compared to four 24-hour recalls; adjusted deattenuated correlations for entire instrument across nutrients range from 0.51 to 0.77 for women and 0.41 to 0.83 for men compared to four 24-hour recalls; r=0.68 for entire instrument for men and 0.54 for women compared to four 24-hour recalls.
External Validity		
Sensitive to Change		
Related to Outcome(s)		
Other	X	Cognitive testing indicates instrument is easy to use; HHHG questions were redesigned based on cognitive think-aloud interviewing and incorporated into a test-DHQ.

Citations: NCI 2004; Thompson FE et al. 2002a; Subar AF et al. 2001; Thompson FE et al. 2002b; NCHS/NHANES 2004.

Each time you drank soft drinks, soda, or pop, how much did you usually drink? (less than 12 ounces or less than 1 can or bottle, 12 to 16 ounces or 1 can or bottle, more than 16 ounces or more than 1 can or bottle)

Preliminary Rank High

Instrument NCI Diet History Questionnaire, NCI Food Propensity Questionnaire added and pilot tested in NHANES 2003

Administration

Population National, local

Subgroup Tested with Washington DC participants ages 25-70 (64% female, 14% African-American); tested in Eating at America's Table Study (nationally representative sample, RDD, 20-70 years of age, 79% White, 10% African-American, 51% women); RDD of adults 20-70 years old in Thompson FE et al. 2002b validation study with Eating at America's Table Study sample.

Sample Size(s) n=623 in Thompson FE et al. 2002a validation study; n=1,301 in Eating at America's Table Study; n=202 men and 260 women in smaller Thompson FE et al. 2002b validation study with Eating at America's Table Study sample.

Mode Self:Paper/pencil.

	Documented	Description
Other Languages	X	Spanish
Low-Income	X	
Low Education Level		4.8% had less than a HS degree in Eating at America's Table Study; 1% had less than a HS degree in Thompson FE et al. 2002a; 79% had more than a HS degree in Thompson FE et al. 2002b.

Evidence

Reliability		
Internal Validity	X	Compared to Daily Food Report: r=0.48 for women and r=0.49 for men for energy for entire instrument compared to four 24-hour recalls; adjusted deattenuated correlations for entire instrument across nutrients range from 0.51 to 0.77 for women and 0.41 to 0.83 for men compared to four 24-hour recalls; r=0.68 for entire instrument for men and 0.54 for women compared to four 24-hour recalls.
External Validity		
Sensitive to Change		
Related to Outcome(s)		
Other	X	Cognitive testing indicates instrument is easy to use; HHHG questions were redesigned based on cognitive think-aloud interviewing and incorporated into a test-DHQ.

Citations: NCI 2004; Thompson FE et al. 2002a; Subar AF et al. 2001; Thompson FE et al. 2002b; NCHS/NHANES 2004.

KNOWLEDGE

In the produce section of your grocery store, have you ever seen any banners, posters, pamphlets or special recipes about the number of fruits and vegetables to eat for better health? (Y, N)

Preliminary Rank Medium **Instrument** California Dietary Practices Survey (2001)

Administration

Population	State
Subgroup	Adults in California, oversampling of low-income, African American, and Latino participants.
Sample Size(s)	n=1,500-1,700 adults biennially.
Mode	Interviewer:Telephone (RDD).

	Documented	Description
Other Languages	X	Spanish
Low-Income	X	
Low Education Level		

Evidence

Reliability
Internal Validity
External Validity
Sensitive to Change
Related to Outcome(s)
Other

Notes:

Citations: Oppen M et al. 2002.

How many total servings of fruits and vegetables do YOU think YOU should eat every day for good health? [PAUSE] That's a combined total of BOTH fruits and vegetables. [INTERVIEWER: DO NOT ALLOW RANGE. PROBE FOR SINGLE NUMBER] (#)

Preliminary Rank Medium **Instrument** California Dietary Practices Survey (2001)

Administration

Population	State
Subgroup	Adults in California, oversampling of low-income, African American, and Latino participants.
Sample Size(s)	n=1,500-1,700 adults biennially.
Mode	Interviewer:Telephone (RDD).

	Documented	Description
Other Languages	X	Spanish
Low-Income	X	
Low Education Level		

Evidence

Reliability
Internal Validity
External Validity
Sensitive to Change
Related to Outcome(s)
Other

Notes:

Citations: Oppen M et al. 2002.

Knowledge

Based on your knowledge, which has more saturated fat: a. liver or T-bone steak?, b. butter or margarine?, c. egg white or egg yolk?, d. skim milk or whole milk?

Preliminary Rank Ideal **Instrument** Diet and Health Knowledge Survey (DHKS) 1994-1996 (conducted as follow-up to CSFII)

Administration

Population	National
Subgroup	Nationally representative; Adults 20+ years of age; Oversampling of low-income.
Sample Size(s)	n=5,649 in national study; n=1,196 for Obayashi S et al 2003 analysis; n=2,952 for Perez-Escamilla R et al 2002 analysis.
Mode	Interviewer:Telephone interview; Trained interviewer.

	Documented	**Description**
Other Languages		
Low-Income	**X**	
Low Education Level		10.8% had less than a HS degree in Obayashi S et al. 2003.

Evidence

Reliability	**X**	Internal consistency for knowledge of nutrient contents between products (Cronbach alpha = 0.46).
Internal Validity	**X**	Expert panel decided section had content validity; Discriminant validity for 4/6 studies; Convergent validity on nutrition knowledge construct on diet-disease relationships and nutrient content between products (r=0.2 at P<0.0001); Correspondence validity on nutrition knowledge about the nutrient content between products and total HEI (r=0.1 P<0.001).
External Validity		
Sensitive to Change		
Related to Outcome(s)	**X**	Scoring low on nutrition knowledge for food fat content, food groups, obesity/health relationships, and food labels was associated with a low HEI (OR=1.40, 95% CI: 1.17, 1.68, P<0.001).
Other	**X**	Other tests for reliability and validity were conducted on the DHKS 1989-1991 instrument.

Notes: DHKS data indicate that many low-income adults do not know specific facts related to the health consequences or benefits of certain dietary practices, lack confidence that their diets comply with healthful dietary practices (especially among FSP participants), do not engage in dietary habits to lower fat and cholesterol, do not meet the Food Guide Pyramid or Dietary Guidelines recommendations, and have inadequate usual intakes of several micronutrients; DHKS data provide little evidence of differences in dietary intake between FSP participants and other low-income nonparticipants. DHKS 1994-1996 results cannot be compared to DHKS 1989-1991 results.

Citations: USDA/ARS 2004; Gleason P et al. 2000; Obayashi S et al. 2003; Capps O et al. 2002; Perez-Escamilla R et al. 2002.

Which of these would be the best way to add a fruit or vegetable to your meal at a fast food restaurant? (add a tomato slice to your hamburger, order apple pie for dessert, order a large serving of French fries, order a side of salad)

Preliminary Rank Medium **Instrument** General Knowledge (Reynolds) (2002)

Administration

Population Local

Subgroup Parents of fourth grade students in three school districts.

Sample Size(s) Year 1 n=1,292, Year 2 n=1,124, Year 3 n=949.

Mode Self:Paper/pencil.

	Documented	Description
Other Languages		
Low-Income	X	30% of participants in the study had a household income of $30,000 or less.
Low Education Level		

Evidence

Reliability	X	Internal consistency among 10 questions = .23.
Internal Validity		
External Validity		
Sensitive to Change		
Related to Outcome(s)	X	Increases in parent knowledge were related to increases in children's consumption of fruits and vegetables
Other		

Notes:

Citations: CA Dept of Health Services 2003-2004; Reynolds RD et al. 2002.

Who needs to eat plenty of fruits and vegetables? (children, adults, teenagers, grandparents, all of the above)

Preliminary Rank Medium **Instrument** Gimme 5 Fruit, Juice, and Vegetables for Fun and Health (1996)

Administration

Population Local

Subgroup 4 southeastern metropolitan schools and 12 southeastern suburban schools in Georgia (4th-6th grade students, 15.3% African American, 84.7% Euro-American).

Sample Size(s) n=1,172 children.

Mode Self:Paper/pencil.

	Documented	Description
Other Languages		
Low-Income		
Low Education Level		

Evidence

Reliability	X	Internal reliability for 16-item fruit, juice, and vegetable knowledge questions (Cronbach's alpha=0.67 year 1, 0.71 year 2, 0.77 year 3).
Internal Validity		
External Validity		
Sensitive to Change	X	Time effects for the 16-item fruit, juice, and vegetable knowledge questions favored the treatment group (p=0.04)
Related to Outcome(s)		
Other		

Notes: Considered this study on children and adolescents since questions are recommended and also appropriate for use with adults.

Citations: Baranowski T et al. 2000; CA Dept of Health Services 2003-2004; Stables G et al. 2001.

Is saturated fat usually found in _____? (vegetables and vegetable oils, animal products like meat and dairy products) (Y, N)

Preliminary Rank Medium **Instrument** Health and Diet Survey (2001)

Administration

Population	National
Subgroup	Adults in 50 states and District of Columbia; RDD.
Sample Size(s)	n=2,743.
Mode	Interviewer:RDD telephone survey.

	Documented	**Description**
Other Languages		
Low-Income		
Low Education Level		

Evidence

Reliability
Internal Validity
External Validity
Sensitive to Change
Related to Outcome(s)
Other

Notes:

Citations: FDA 2002.

Which kind of fat is higher in calories? (saturated fat, polyunsaturated fat, they are both the same)

Preliminary Rank Medium **Instrument** Health and Diet Survey (2001)

Administration

Population	National
Subgroup	Adults in 50 states and District of Columbia; RDD.
Sample Size(s)	n=2,743
Mode	Interviewer:RDD telephone survey.

	Documented	**Description**
Other Languages		
Low-Income		
Low Education Level		

Evidence

Reliability	
Internal Validity	
External Validity	
Sensitive to Change	
Related to Outcome(s)	
Other	

Notes:

Citations: FDA 2002.

How many servings from the milk, yogurt, and cheese group would you say a person of your age and sex should eat each day for good health? (#)

Preliminary Rank Medium **Instrument** National Food Stamp Program Survey (1996)

Administration

Population National

Subgroup Food use questions were posed to a nationally representative population of Food Stamp Program (FSP) participants, FSP eligible nonparticipants, and near eligible nonparticipants.

Sample Size(s) n=3,309.

Mode Interviewer:1,109 in-person and 2,200 telephone.

	Documented	Description
Other Languages		
Low-Income	X	Average gross income for FSP participants was $8,468.
Low Education Level	X	43.1% of FSP participants had less than HS degree.

Evidence

Reliability		
Internal Validity		
External Validity		
Sensitive to Change		
Related to Outcome(s)		
Other	X	Cognitive testing

Notes:

Citations: Zambrowski A and Ohls J 1999.

How many servings from the bread, cereal, rice and pasta group would you say a person of your age and sex should eat each day for good health? (#)

Preliminary Rank Medium **Instrument** National Food Stamp Program Survey (1996)

Administration

Population National

Subgroup Food use questions were posed to a nationally representative population of Food Stamp Program (FSP) participants, FSP eligible nonparticipants, and near eligible nonparticipants.

Sample Size(s) n=3,309.

Mode Interviewer:1,109 in-person and 2,200 telephone.

	Documented	Description
Other Languages		
Low-Income	X	Average gross income for FSP participants was $8,468.
Low Education Level	X	43.1% of FSP participants had less than HS degree.

Evidence

Reliability		
Internal Validity		
External Validity		
Sensitive to Change		
Related to Outcome(s)		
Other	X	Cognitive testing

Notes:

Citations: Zambrowski A and Ohls J 1999.

How many servings from the meat, poultry, fish, dry beans, and eggs group would you say a person of your age and sex should eat each day for good health? (#)

Preliminary Rank Medium **Instrument** National Food Stamp Program Survey (1996)

Administration

Population	National
Subgroup	Food use questions were posed to a nationally representative population of Food Stamp Program (FSP) participants, FSP eligible nonparticipants, and near eligible nonparticipants.
Sample Size(s)	n=3,309.
Mode	Interviewer:1,109 in-person and 2,200 telephone.

	Documented	Description
Other Languages		
Low-Income	X	Average gross income for FSP participants was $8,468.
Low Education Level	X	43.1% of FSP participants had less than HS degree.

Evidence

Reliability		
Internal Validity		
External Validity		
Sensitive to Change		
Related to Outcome(s)		
Other	X	Cognitive testing

Notes:

Citations: Zambrowski A and Ohls J 1999.

Which one of the following fast food items do you think is lowest in fat? (a cheeseburger, a fish sandwich, chicken nuggets, a grilled chicken sandwich)

Preliminary Rank Medium **Instrument** National Food Stamp Program Survey (1996)

Administration

Population	National
Subgroup	Food use questions were posed to a nationally representative population of Food Stamp Program (FSP) participants, FSP eligible nonparticipants, and near eligible nonparticipants.
Sample Size(s)	n=3,309.
Mode	Interviewer:1,109 in-person and 2,200 telephone.

	Documented	Description
Other Languages		
Low-Income	X	Average gross income for FSP participants was $8,468.
Low Education Level	X	43.1% of FSP participants had less than HS degree.

Evidence

Reliability		
Internal Validity		
External Validity		
Sensitive to Change		
Related to Outcome(s)		
Other	X	Cognitive testing

Notes:

Citations: Zambrowski A and Ohls J 1999.

Have you ever heard of a program called The Food Guide Pyramid? (Y/N)

Preliminary Rank Not Ranked **Instrument** PSID (1999)

Administration

Population	National
Subgroup	Biennial survey of a representative sample of U.S. individuals (men, women, and children) and the family units in which they reside.
Sample Size(s)	Approximately 7,000 families.
Mode	Interviewer:CATI.

	Documented	**Description**
Other Languages		
Low-Income		
Low Education Level		

Evidence

Reliability
Internal Validity
External Validity
Sensitive to Change
Related to Outcome(s)
Other

Notes:

Citations: University of Michigan 2004.

Have you ever heard of a program called The 5-A-Day Program? (Y/N)

Preliminary Rank Not Ranked **Instrument** PSID (1999)

Administration

Population	National
Subgroup	Biennial survey of a representative sample of U.S. individuals (men, women, and children) and the family units in which they reside.
Sample Size(s)	Approximately 7,000 families.
Mode	Interviewer:CATI.

	Documented	**Description**
Other Languages		
Low-Income		
Low Education Level		

Evidence

Reliability
Internal Validity
External Validity
Sensitive to Change
Related to Outcome(s)
Other

Notes:

Citations: University of Michigan 2004.

Have you ever heard of a program called The Dietary Guidelines for Americans? (Y/N)

Preliminary Rank Not Ranked **Instrument** PSID (1999)

Administration

Population	National
Subgroup	Biennial survey of a representative sample of U.S. individuals (men, women, and children) and the family units in which they reside.
Sample Size(s)	Approximately 7,000 families.
Mode	Interviewer:CATI.

	Documented	**Description**
Other Languages		
Low-Income		
Low Education Level		

Evidence

Reliability
Internal Validity
External Validity
Sensitive to Change
Related to Outcome(s)
Other

Notes:

Citations: University of Michigan 2004.

ATTITUDES

Do you consider yourself to be overweight, underweight, or about average for your height? (overweight, underweight, about average)

Preliminary Rank Medium **Instrument** California Dietary Practices Survey (2001)

Administration

Population	State
Subgroup	Adults in California, oversampling of low-income, African American, and Latino participants.
Sample Size(s)	n=1,500-1,700 adults biennially.
Mode	Interviewer:Telephone (RDD).

	Documented	Description
Other Languages	X	Spanish
Low-Income	X	
Low Education Level		

Evidence

Reliability
Internal Validity
External Validity
Sensitive to Change
Related to Outcome(s)
Other

Notes: Relates to "healthy weight."

Citations: Oppen M et al. 2002.

Do you think you eat the right amount of fruits and vegetables now, or do you think you should eat more? (eat right amount, should eat more)

Preliminary Rank Medium **Instrument** California Dietary Practices Survey (2001)

Administration

Population State

Subgroup Adults in California, oversampling of low-income, African American, and Latino participants.

Sample Size(s) n=1,500-1,700 adults biennially.

Mode Interviewer:Telephone (RDD).

	Documented	Description
Other Languages	X	Spanish
Low-Income	X	
Low Education Level		

Evidence

Reliability
Internal Validity
External Validity
Sensitive to Change
Related to Outcome(s)
Other

Notes:

Citations: Oppen M et al. 2002.

Do you consider yourself to be _____? (overweight, underweight, about right)

Preliminary Rank Medium **Instrument** Diet and Health Knowledge Survey (DHKS) 1994-1996 (conducted as follow-up to CSFII)

Administration

Population	National
Subgroup	Nationally representative; Adults 20+ years of age; Oversampling of low-income.
Sample Size(s)	n=5,649 in national study; n=1,196 for Obayashi S et al 2003 analysis.
Mode	Interviewer:Telephone interview; Trained interviewer.

	Documented	Description
Other Languages		
Low-Income	X	
Low Education Level		10.8% had less than a HS degree in Obayashi S et al. 2003.

Evidence

Reliability		
Internal Validity		
External Validity		
Sensitive to Change		
Related to Outcome(s)		
Other	X	Other tests for reliability and validity were conducted on the DHKS 1989-1991 instrument.

Notes: Relates to "healthy weight." DHKS data indicate that many low-income adults do not know specific facts related to the health consequences or benefits of certain dietary practices, lack confidence that their diets comply with healthful dietary practices (especially among FSP participants), do not engage in dietary habits to lower fat and cholesterol, do not meet the Food Guide Pyramid or Dietary Guidelines recommendations, and have inadequate usual intakes of several micronutrients; DHKS data provide little evidence of differences in dietary intake between FSP participants and other low-income nonparticipants. DHKS 1994-1996 results cannot be compared to DHKS 1989-1991 results.

Citations: USDA/ARS 2004; Gleason P et al. 2000; Obayashi S et al. 2003; Capps O et al. 2002.

To you personally, is it very important, somewhat important, not too important, or not at all important to: Maintain a healthy weight? (very important, somewhat important, not too important, not at all important) [If NEEDED, SAY: "The question is not asking about your actual eating habits, it is asking about the importance of the statement to you personally."]

Preliminary Rank Ideal **Instrument** Diet and Health Knowledge Survey (DHKS) 1994-1996 (conducted as follow-up to CSFII)

Administration

Population	National
Subgroup	Nationally representative; Adults 20+ years of age; Oversampling of low-income.
Sample Size(s)	n=5,649 in national study; n=1,196 for Obayashi S et al 2003 analysis; n=5,512 for Kuchler F et al 2002 analysis; n=2419 adult women for Lin BH et al 2004 analysis.
Mode	Interviewer:Telephone interview; Trained interviewer.

	Documented	**Description**
Other Languages		
Low-Income	X	
Low Education Level		10.8% had less than a HS degree in Obayashi S et al. 2003.

Evidence

Reliability	X	Internal consistency for perceived ease of understanding food labels (Cronbach alpha = 0.82).
Internal Validity	X	Expert panel decided perceived ease of understanding food labels section had content validity; Discriminant validity for 3/3 studies
External Validity		
Sensitive to Change		
Related to Outcome(s)	X	Women who consider it important to maintain a healthy weight had a lower BMI by 2.26 than women who did not (t-ratio=-1.98, P<0.05); no significant association between importance of maintaining a healthy weight and BMI among men; high-income women who consider it important to maintain a healthy weight had a lower BMI by 3.17(P<0.05, t-ratio=-2.26) than other high-income women; no significant association between importance of maintaining a healthy weight and BMI among low-income women.
Other	X	Other tests for reliability and validity were conducted on the DHKS 1989-1991 instrument.

Notes: Relates to "healthy weight." DHKS data indicate that many low-income adults do not know specific facts related to the health consequences or benefits of certain dietary practices, lack confidence that their diets comply with healthful dietary practices (especially among FSP participants), do not engage in dietary habits to lower fat and cholesterol, do not meet the Food Guide Pyramid or Dietary Guidelines recommendations, and have inadequate usual intakes of several micronutrients; DHKS data provide little evidence of differences in dietary intake between FSP participants and other low-income nonparticipants. DHKS 1994-1996 results cannot be compared to DHKS 1989-1991 results.

Citations: USDA/ARS 2004; Gleason P et al. 2000; Obayashi S et al. 2003; Capps O et al. 2002; Kuchler F et al. 2002; Lin BH et al. 2004.

Please tell me if you strongly agree, somewhat agree, somewhat disagree, or strongly disagree with the statement: Some people are born to be fat and some thin; there is not much you can do to change this. (strongly agree, somewhat agree, somewhat disagree, strongly disagree)

Preliminary Rank High

Instrument Diet and Health Knowledge Survey (DHKS) 1994-1996 (conducted as follow-up to CSFII)

Administration

Population	National
Subgroup	Nationally representative; Adults 20+ years of age; Oversampling of low-income.
Sample Size(s)	n=5,649 in national study; n=1,196 for Obayashi S et al 2003 analysis; n=5,512 for Kuchler F et al 2002 analysis; n=2419 adult women for Lin BH et al 2004 analysis.
Mode	Interviewer:Telephone interview; Trained interviewer.

	Documented	**Description**
Other Languages		
Low-Income	**X**	
Low Education Level		10.8% had less than a HS degree in Obayashi S et al. 2003.

Evidence

Reliability		
Internal Validity		
External Validity		
Sensitive to Change		
Related to Outcome(s)	**X**	Women who disagree with this gene theory have lower BMI values by 0.75 than those who agree (t-ratio=-2.47, P<0.05); men who disagree with this gene theory are similar to those who agree by BMI (t-ratio=-0.09, NS); low-income women who agree with the gene theory had a higher BMI by 1.16 (P<0.05, t-ratio=2.47) than other low-income women; no significant association between gene theory and BMI among high income women.
Other	**X**	Other tests for reliability and validity were conducted on the DHKS 1989-1991 instrument.

Notes: Relates to "healthy weight." DHKS data indicate that many low-income adults do not know specific facts related to the health consequences or benefits of certain dietary practices, lack confidence that their diets comply with healthful dietary practices (especially among FSP participants), do not engage in dietary habits to lower fat and cholesterol, do not meet the Food Guide Pyramid or Dietary Guidelines recommendations, and have inadequate usual intakes of several micronutrients; DHKS data provide little evidence of differences in dietary intake between FSP participants and other low-income nonparticipants. DHKS 1994-1996 results cannot be compared to DHKS 1989-1991 results.

Citations: USDA/ARS 2004; Gleason P et al. 2000; Obayashi S et al. 2003; Capps O et al. 2002; Kuchler F et al. 2002; Lin BH et al. 2004.

Attitudes

To you personally, is it very important, somewhat important, not too important, or not at all important to: Eat at least two servings of dairy products daily? (very important, somewhat important, not too important, not at all important) [IF NEEDED, SAY: "The question is not asking about your actual eating habits, it is asking about the importance of the statement to you personally."]

Preliminary Rank High **Instrument** Diet and Health Knowledge Survey (DHKS) 1994-1996 (conducted as follow-up to CSFII)

Administration

Population	National
Subgroup	Nationally representative; Adults 20+ years of age; Oversampling of low-income.
Sample Size(s)	n=5,800.
Mode	Interviewer:Telephone interview; Trained interviewer.

	Documented	Description
Other Languages		
Low-Income	X	
Low Education Level		10.8% had less than a HS degree in Obayashi S et al. 2003.

Evidence

Reliability	X	Internal consistency for perceived ease of understanding food labels (Cronbach alpha = 0.82).
Internal Validity	X	Expert panel decided perceived ease of understanding food labels section had content validity; Discriminant validity for 3/3 studies.
External Validity		
Sensitive to Change		
Related to Outcome(s)		
Other	X	Other tests for reliability and validity were conducted on the DHKS 1989-1991 instrument.

Notes: DHKS data indicate that many low-income adults do not know specific facts related to the health consequences or benefits of certain dietary practices, lack confidence that their diets comply with healthful dietary practices (especially among FSP participants), do not engage in dietary habits to lower fat and cholesterol, do not meet the Food Guide Pyramid or Dietary Guidelines recommendations, and have inadequate usual intakes of several micronutrients; DHKS data provide little evidence of differences in dietary intake between FSP participants and other low-income nonparticipants. DHKS 1994-1996 results cannot be compared to DHKS 1989-1991 results.

Citations: USDA/ARS 2004; Gleason P et al. 2000; Obayashi S et al. 2003; Capps O et al. 2002.

Attitudes

To you personally, is it very important, somewhat important, not too important, or not at all important to: Use sugars only in moderation? (very important, somewhat important, not too important, not at all important) [IF NEEDED, SAY: "The question is not asking about your actual eating habits, it is asking about the importance of the statement to you personally."]

Preliminary Rank High **Instrument** Diet and Health Knowledge Survey (DHKS) 1994-1996 (conducted as follow-up to CSFII)

Administration

Population	National
Subgroup	Nationally representative; Adults 20+ years of age; Oversampling of low-income.
Sample Size(s)	n=5,800.
Mode	Interviewer:Telephone interview; Trained interviewer.

	Documented	Description
Other Languages		
Low-Income	X	
Low Education Level		10.8% had less than a HS degree in Obayashi S et al. 2003.

Evidence

Reliability	X	Internal consistency for perceived ease of understanding food labels (Cronbach alpha = 0.82).
Internal Validity	X	Expert panel decided perceived ease of understanding food labels section had content validity; Discriminant validity for 3/3 studies.
External Validity		
Sensitive to Change		
Related to Outcome(s)		
Other	X	Other tests for reliability and validity were conducted on the DHKS 1989-1991 instrument.

Notes: DHKS data indicate that many low-income adults do not know specific facts related to the health consequences or benefits of certain dietary practices, lack confidence that their diets comply with healthful dietary practices (especially among FSP participants), do not engage in dietary habits to lower fat and cholesterol, do not meet the Food Guide Pyramid or Dietary Guidelines recommendations, and have inadequate usual intakes of several micronutrients; DHKS data provide little evidence of differences in dietary intake between FSP participants and other low-income nonparticipants. DHKS 1994-1996 results cannot be compared to DHKS 1989-1991 results.

Citations: USDA/ARS 2004; Gleason P et al. 2000; Obayashi S et al. 2003; Capps O et al. 2002.

Attitudes

Please tell me if you strongly agree, somewhat agree, somewhat disagree, or strongly disagree with the statement: Reading food labels takes more time than I can spare. (strongly agree, somewhat agree, somewhat disagree, strongly disagree)

Preliminary Rank High **Instrument** Diet and Health Knowledge Survey (DHKS) 1994-1996 (conducted as follow-up to CSFII)

Administration

Population	National
Subgroup	Nationally representative; Adults 20+ years of age; Oversampling of low-income.
Sample Size(s)	n=5,649 in national study; n=1,196 for Obayashi S et al 2003 analysis.
Mode	Interviewer:Telephone interview; Trained interviewer.

	Documented	Description
Other Languages		
Low-Income	X	
Low Education Level		10.8% had less than a HS degree in Obayashi S et al. 2003.

Evidence

Reliability	X	Internal consistency for perceived barriers to using the food label (Cronbach alpha = 0.48)
Internal Validity	X	Expert panel decided perceived barrier and benefit to using the food label section had content validity; Discriminant validity for 1/2 studies for perceived barriers
External Validity		
Sensitive to Change		
Related to Outcome(s)		
Other	X	Other tests for reliability and validity were conducted on the DHKS 1989-1991 instrument.

Notes: DHKS data indicate that many low-income adults do not know specific facts related to the health consequences or benefits of certain dietary practices, lack confidence that their diets comply with healthful dietary practices (especially among FSP participants), do not engage in dietary habits to lower fat and cholesterol, do not meet the Food Guide Pyramid or Dietary Guidelines recommendations, and have inadequate usual intakes of several micronutrients; DHKS data provide little evidence of differences in dietary intake between FSP participants and other low-income nonparticipants. DHKS 1994-1996 results cannot be compared to DHKS 1989-1991 results.

Citations: USDA/ARS 2004; Gleason P et al. 2000; Obayashi S et al. 2003; Capps O et al. 2002.

Attitudes

Now think about buying food. When you buy food, how important is: a. how safe the food is to eat?, b. nutrition?, c. price?, d. how well the food keeps?, e. how easy the food is to prepare?, f. taste? (very important, somewhat important, not too important, not at all important)

Preliminary Rank High **Instrument** Diet and Health Knowledge Survey (DHKS) 1994-1996 (conducted as follow-up to CSFII)

Administration

Population	National
Subgroup	Nationally representative; Adults 20+ years of age; Oversampling of low-income.
Sample Size(s)	n=5,649 in national study; n=1,196 for Obayashi S et al 2003 analysis; n=5,512 for Kuchler F et al 2002 analysis.
Mode	Interviewer:Telephone interview; Trained interviewer.

	Documented	**Description**
Other Languages		
Low-Income	**X**	
Low Education Level		10.8% had less than a HS degree in Obayashi S et al. 2003.

Evidence

Reliability		
Internal Validity		
External Validity		
Sensitive to Change		
Related to Outcome(s)	**X**	Taste is important for men (t-ratio for BMI regression of 1.83, P<0.10) but insignificant for women (t-ratio for BMI regression of 1.39, NS) (pooled t-ratio for BMI regression of 2.57, P<0.05).
Other	**X**	Other tests for reliability and validity were conducted on the DHKS 1989-1991 instrument.

Notes: DHKS data indicate that many low-income adults do not know specific facts related to the health consequences or benefits of certain dietary practices, lack confidence that their diets comply with healthful dietary practices (especially among FSP participants), do not engage in dietary habits to lower fat and cholesterol, do not meet the Food Guide Pyramid or Dietary Guidelines recommendations, and have inadequate usual intakes of several micronutrients; DHKS data provide little evidence of differences in dietary intake between FSP participants and other low-income nonparticipants. Relates to "healthy weight." DHKS 1994-1996 results cannot be compared to DHKS 1989-1991 results.

Citations: USDA/ARS 2004; Gleason P et al. 2000; Obayashi S et al. 2003; Capps O et al. 2002; Kuchler F et al. 2002.

It is very important, somewhat important, not too important, or not important at all to maintain a healthy weight? (very important, somewhat important, not too important, not important at all)

Preliminary Rank Medium **Instrument** National Food Stamp Program Survey (1996)

Administration

Population National

Subgroup Food use questions were posed to a nationally representative population of Food Stamp Program (FSP) participants, FSP eligible nonparticipants, and near eligible nonparticipants.

Sample Size(s) n=3,309.

Mode Interviewer:1,109 in-person and 2,200 telephone.

	Documented	Description
Other Languages		
Low-Income	X	Average gross income for FSP participants was $8,468.
Low Education Level	X	43.1% of FSP participants had less than HS degree.

Evidence

Reliability		
Internal Validity		
External Validity		
Sensitive to Change		
Related to Outcome(s)		
Other	X	Cognitive testing.

Notes: Relates to "healthy weight."

Citations: Zambrowski A and Ohls J 1999.

Some people are born to be fat and some thin; there is not much you can do to change this. (strongly agree, somewhat agree, somewhat disagree, strongly disagree)

Preliminary Rank Medium **Instrument** National Food Stamp Program Survey (1996)

Administration

Population National

Subgroup Food use questions were posed to a nationally representative population of Food Stamp Program (FSP) participants, FSP eligible nonparticipants, and near eligible nonparticipants.

Sample Size(s) n=3,309.

Mode Interviewer:1,109 in-person and 2,200 telephone.

	Documented	Description
Other Languages		
Low-Income	X	Average gross income for FSP participants was $8,468.
Low Education Level	X	43.1% of FSP participants had less than HS degree.

Evidence

Reliability		
Internal Validity		
External Validity		
Sensitive to Change		
Related to Outcome(s)		
Other	X	Cognitive testing.

Notes: Relates to "healthy weight."

Citations: Zambrowski A and Ohls J 1999.

Eating a variety of foods each day probably gives you all the vitamins and minerals you need. (strongly agree, somewhat agree, somewhat disagree, strongly disagree)

Preliminary Rank Medium **Instrument** National Food Stamp Program Survey (1996)

Administration

Population National

Subgroup Food use questions were posed to a nationally representative population of Food Stamp Program (FSP) participants, FSP eligible nonparticipants, and near eligible nonparticipants.

Sample Size(s) n=3,309.

Mode Interviewer:1,109 in-person and 2,200 telephone.

	Documented	Description
Other Languages		
Low-Income	X	Average gross income for FSP participants was $8,468.
Low Education Level	X	43.1% of FSP participants had less than HS degree.

Evidence

Reliability		
Internal Validity		
External Validity		
Sensitive to Change		
Related to Outcome(s)		
Other	X	Cognitive testing

Notes:

Citations: Zambrowski A and Ohls J 1999.

My diet is high in fat and cholesterol. (strongly agree, somewhat agree, somewhat disagree, strongly disagree)

Preliminary Rank Medium **Instrument** National Food Stamp Program Survey (1996)

Administration

Population National

Subgroup Food use questions were posed to a nationally representative population of Food Stamp Program (FSP) participants, FSP eligible nonparticipants, and near eligible nonparticipants.

Sample Size(s) n=3,309.

Mode Interviewer:1,109 in-person and 2,200 telephone.

	Documented	Description
Other Languages		
Low-Income	X	Average gross income for FSP participants was $8,468.
Low Education Level	X	43.1% of FSP participants had less than HS degree.

Evidence

Reliability		
Internal Validity		
External Validity		
Sensitive to Change		
Related to Outcome(s)		
Other	X	Cognitive testing.

Notes:

Citations: Zambrowski A and Ohls J 1999.

It is very important, somewhat important, not too important, or not important at all to choose a daily diet with 5 or more servings of fruits and vegetables? (very important, somewhat important, not too important, not important at all)

Preliminary Rank Medium **Instrument** National Food Stamp Program Survey (1996)

Administration

Population National

Subgroup Food use questions were posed to a nationally representative population of Food Stamp Program (FSP) participants, FSP eligible nonparticipants, and near eligible nonparticipants.

Sample Size(s) n=3,309.

Mode Interviewer:1,109 in-person and 2,200 telephone.

	Documented	Description
Other Languages		
Low-Income	X	Average gross income for FSP participants was $8,468.
Low Education Level	X	43.1% of FSP participants had less than HS degree.

Evidence

Reliability		
Internal Validity		
External Validity		
Sensitive to Change		
Related to Outcome(s)		
Other	X	Cognitive testing.

Notes:

Citations: Zambrowski A and Ohls J 1999.

In the past month, have you thought about changes you could make to increase the amount of fruits and vegetables in your diet? (Y, N) How confident are you that you will make some of these changes during the next month? (very confident, somewhat confident, mildly confident, not at all confident)

Preliminary Rank Medium **Instrument** National Food Stamp Program Survey (1996)

Administration

Population	National
Subgroup	Food use questions were posed to a nationally representative population of Food Stamp Program (FSP) participants, FSP eligible nonparticipants, and near eligible nonparticipants.
Sample Size(s)	n=3,309.
Mode	Interviewer:1,109 in-person and 2,200 telephone.

	Documented	**Description**
Other Languages		
Low-Income	**X**	Average gross income for FSP participants was $8,468.
Low Education Level	**X**	43.1% of FSP participants had less than HS degree.

Evidence

Reliability		
Internal Validity		
External Validity		
Sensitive to Change		
Related to Outcome(s)		
Other	**X**	Cognitive testing.

Notes:

Citations: Zambrowski A and Ohls J 1999.

It is very important, somewhat important, not too important, or not important at all to use choose foods low in saturated fat? (very important, somewhat important, not too important, not important at all)

Preliminary Rank Medium **Instrument** National Food Stamp Program Survey (1996)

Administration

Population National

Subgroup Food use questions were posed to a nationally representative population of Food Stamp Program (FSP) participants, FSP eligible nonparticipants, and near eligible nonparticipants.

Sample Size(s) n=3,309.

Mode Interviewer:1,109 in-person and 2,200 telephone.

	Documented	Description
Other Languages		
Low-Income	X	Average gross income for FSP participants was $8,468.
Low Education Level	X	43.1% of FSP participants had less than HS degree.

Evidence

Reliability		
Internal Validity		
External Validity		
Sensitive to Change		
Related to Outcome(s)		
Other	X	Cognitive testing.

Notes:

Citations: Zambrowski A and Ohls J 1999.

In the past month, have you thought about changes you could make to decrease the amount of fat in your diet? (Y, N) How confident are you that you will make some of these changes during the next month? (very confident, somewhat confident, mildly confident, not at all confident)

Preliminary Rank Medium **Instrument** National Food Stamp Program Survey (1996)

Administration

Population	National
Subgroup	Food use questions were posed to a nationally representative population of Food Stamp Program (FSP) participants, FSP eligible nonparticipants, and near eligible nonparticipants.
Sample Size(s)	n=3,309.
Mode	Interviewer:1,109 in-person and 2,200 telephone.

	Documented	Description
Other Languages		
Low-Income	X	Average gross income for FSP participants was $8,468.
Low Education Level	X	43.1% of FSP participants had less than HS degree.

Evidence

Reliability		
Internal Validity		
External Validity		
Sensitive to Change		
Related to Outcome(s)		
Other	X	Cognitive testing.

Notes:

Citations: Zambrowski A and Ohls J 1999.

It is very important, somewhat important, not too important, or not important at all to use choose foods with adequate fiber? (very important, somewhat important, not too important, not important at all)

Preliminary Rank Medium **Instrument** National Food Stamp Program Survey (1996)

Administration

Population National

Subgroup Food use questions were posed to a nationally representative population of Food Stamp Program (FSP) participants, FSP eligible nonparticipants, and near eligible nonparticipants.

Sample Size(s) n=3,309.

Mode Interviewer:1,109 in-person and 2,200 telephone.

	Documented	Description
Other Languages		
Low-Income	X	Average gross income for FSP participants was $8,468.
Low Education Level	X	43.1% of FSP participants had less than HS degree.

Evidence

Reliability		
Internal Validity		
External Validity		
Sensitive to Change		
Related to Outcome(s)		
Other	X	Cognitive testing.

Notes:

Citations: Zambrowski A and Ohls J 1999.

On a scale of 1 to 6, where "1" is Not at All Important and "6" is Very Important, when shopping for food, how important is nutrition? (1-6)

Preliminary Rank Medium **Instrument** National Food Stamp Program Survey (1996)

Administration

Population National

Subgroup Food use questions were posed to a nationally representative population of Food Stamp Program (FSP) participants, FSP eligible nonparticipants, and near eligible nonparticipants.

Sample Size(s) n=3,309.

Mode Interviewer:1,109 in-person and 2,200 telephone.

	Documented	Description
Other Languages		
Low-Income	X	Average gross income for FSP participants was $8,468.
Low Education Level	X	43.1% of FSP participants had less than HS degree.

Evidence

Reliability		
Internal Validity		
External Validity		
Sensitive to Change		
Related to Outcome(s)		
Other	X	Cognitive testing.

Notes:

Citations: Zambrowski A and Ohls J 1999.

Do you strongly agree, somewhat agree, somewhat disagree, or strongly disagree with this statement? I eat foods I enjoy, even if they're not so good for me. (strongly agree, somewhat agree, somewhat disagree, strongly disagree)

Preliminary Rank Not Ranked **Instrument** Shopping for Health (2003)

Administration

Population	National
Subgroup	Nationally representative population of adults.
Sample Size(s)	n=1,003.
Mode	Interviewer:Telephone (RDD).

	Documented	**Description**
Other Languages		
Low-Income		
Low Education Level		

Evidence

Reliability	
Internal Validity	
External Validity	
Sensitive to Change	
Related to Outcome(s)	
Other	

Notes:

Citations: Food Marketing Institute 2003.

Do you strongly agree, somewhat agree, somewhat disagree, or strongly disagree with this statement? I try hard to eat healthfully so that I can avoid health problems later in life. (strongly agree, somewhat agree, somewhat disagree, strongly disagree)

Preliminary Rank Not Ranked **Instrument** Shopping for Health (2003)

Administration

Population	National
Subgroup	Nationally representative population of adults.
Sample Size(s)	n=1,003.
Mode	Interviewer:Telephone (RDD).

	Documented	**Description**
Other Languages		
Low-Income		
Low Education Level		

Evidence

Reliability	
Internal Validity	
External Validity	
Sensitive to Change	
Related to Outcome(s)	
Other	

Notes:

Citations: Food Marketing Institute 2003.

[BASED ON THOSE WHO SAY THEIR DIET COULD BE HEALTHIER] Is this a major reason, a minor reason, or not a reason (your diet is not as healthy as it could be)? It costs more to eat healthy foods. (major reason, a minor reason, not a reason)

Preliminary Rank Not Ranked **Instrument** Shopping for Health (2003)

Administration

Population	National
Subgroup	Nationally representative population of adults.
Sample Size(s)	n=1,003.
Mode	Interviewer:Telephone (RDD).

	Documented	**Description**
Other Languages		
Low-Income		
Low Education Level		

Evidence

Reliability	
Internal Validity	
External Validity	
Sensitive to Change	
Related to Outcome(s)	
Other	

Notes:

Citations: Food Marketing Institute 2003.

[BASED ON THOSE WHO SAY THEIR DIET COULD BE HEALTHIER] Is this a major reason, a minor reason, or not a reason (your diet is not as healthy as it could be)? I'm too busy to take the time to eat healthfully. (major reason, a minor reason, not a reason)

Preliminary Rank Not Ranked **Instrument** Shopping for Health (2003)

Administration

Population	National
Subgroup	Nationally representative population of adults.
Sample Size(s)	n=1,003.
Mode	Interviewer:Telephone (RDD).

	Documented	**Description**
Other Languages		
Low-Income		
Low Education Level		

Evidence

Reliability	
Internal Validity	
External Validity	
Sensitive to Change	
Related to Outcome(s)	
Other	

Notes:

Citations: Food Marketing Institute 2003.

[BASED ON THOSE WHO SAY THEIR DIET COULD BE HEALTHIER] Is this a major reason, a minor reason, or not a reason (your diet is not as healthy as it could be)? Healthy foods don't taste good. (major reason, a minor reason, not a reason)

Preliminary Rank Not Ranked **Instrument** Shopping for Health (2003)

Administration

Population National

Subgroup Nationally representative population of adults.

Sample Size(s) n=1,003.

Mode Interviewer:Telephone (RDD).

	Documented	Description
Other Languages		
Low-Income		
Low Education Level		

Evidence

Reliability

Internal Validity

External Validity

Sensitive to Change

Related to Outcome(s)

Other

Notes:

Citations: Food Marketing Institute 2003.

[BASED ON THOSE WHO SAY THEIR DIET COULD BE HEALTHIER] Is this a major reason, a minor reason, or not a reason (your diet is not as healthy as it could be)? Healthy foods are difficult to prepare. (major reason, a minor reason, not a reason)

Preliminary Rank Not Ranked **Instrument** Shopping for Health (2003)

Administration

Population	National
Subgroup	Nationally representative population of adults.
Sample Size(s)	n=1,003.
Mode	Interviewer:Telephone (RDD).

	Documented	**Description**
Other Languages		
Low-Income		
Low Education Level		

Evidence

Reliability	
Internal Validity	
External Validity	
Sensitive to Change	
Related to Outcome(s)	
Other	

Notes:

Citations: Food Marketing Institute 2003.

BEHAVIORS

Did you eat a morning meal (breakfast) yesterday? (Y, N)

Preliminary Rank Medium **Instrument** California Dietary Practices Survey (2001)

Administration

Population	State
Subgroup	Adults in California, oversampling of low-income, African American, and Latino participants.
Sample Size(s)	n=1,500-1,700 adults biennially
Mode	Interviewer:Telephone (RDD).

	Documented	Description
Other Languages	X	Spanish
Low-Income	X	
Low Education Level		

Evidence

Reliability
Internal Validity
External Validity
Sensitive to Change
Related to Outcome(s)
Other

Notes:

Citations: Oppen M et al. 2002.

Are you presently trying to lose weight? (Y, N)

Preliminary Rank Medium **Instrument** California Dietary Practices Survey (2001)

Administration

Population	State
Subgroup	Adults in California, oversampling of low-income, African American, and Latino participants.
Sample Size(s)	n=1,500-1,700 adults biennially
Mode	Interviewer:Telephone (RDD).

	Documented	Description
Other Languages	X	Spanish
Low-Income	X	
Low Education Level		

Evidence

Reliability
Internal Validity
External Validity
Sensitive to Change
Related to Outcome(s)
Other

Notes: Relates to "healthy weight."

Citations: Oppen M et al. 2002.

Yesterday, did you eat any potato chips, corn chips, cheese puffs, pork rinds or other fried snack foods? Do not include reduced fat or fat-free items. [INTERVIEWER: INCLUDE ALL FRIED SNACK FOODS] (Y, N)

Preliminary Rank Medium **Instrument** California Dietary Practices Survey (2001)

Administration

Population	State
Subgroup	Adults in California, oversampling of low-income, African American, and Latino participants.
Sample Size(s)	n=1,500-1,700 adults biennially.
Mode	Interviewer:Telephone (RDD).

	Documented	**Description**
Other Languages	**X**	Spanish
Low-Income	**X**	
Low Education Level		

Evidence

Reliability
Internal Validity
External Validity
Sensitive to Change
Related to Outcome(s)
Other

Notes:

Citations: Oppen M et al. 2002.

Now think about food labels. When you buy foods, do you use (SECTION) often, sometimes, rarely, or never? SECTION: a. The list of ingredients? B. The short phrases on the label like "low-fat" or "light" or "good source of fiber"?, c. The nutrition panel that tells the amount of calories, protein, fat, and such in a serving of the food?, d. The information about the size of a serving? e. Statements on the label that describe health benefits of nutrients or foods? (often, sometimes, rarely, never)

Preliminary Rank Ideal **Instrument** Diet and Health Knowledge Survey (DHKS) 1994-1996 (conducted as follow-up to CSFII)

Administration

Population	National
Subgroup	Nationally representative; Adults 20+ years of age; Oversampling of low-income.
Sample Size(s)	n=5,649 in national study; n=1,196 for Obayashi S et al 2003 analysis; n=2,952 for Perez-Escamilla R et al 2002 analysis.
Mode	Interviewer:Telephone interview; Trained interviewer.

	Documented	**Description**
Other Languages		
Low-Income	**X**	
Low Education Level		10.8% had less than a HS degree in Obayashi S et al. 2003.

Evidence

Reliability	**X**	Internal consistency for use of food labels (Cronbach alpha = 0.91)
Internal Validity	**X**	Expert panel decided section had content validity; Discriminant validity for 2/4 studies; Correspondence validity of food label use and total HEI (r=0.2 P<0.0001).
External Validity		
Sensitive to Change		
Related to Outcome(s)	**X**	Compared to a reference group, those that were high-income and used food labels were significantly less likely to have a lower HEI (OR=0.42, 95% CI: 0.31, 0.56, P<0.001), those that were high-income but did not use food labels were as likely to have a low HEI (OR=1.08, 95% CI: 0.74, 1.54), and those that were low-income and used food labels were significantly less likely to have a low HEI (OR=0.62, 95% CI: 0.48, 0.80, P<0.001).
Other	**X**	Other tests for reliability and validity were conducted on the DHKS 1989-1991 instrument.

Notes: DHKS data indicate that many low-income adults do not know specific facts related to the health consequences or benefits of certain dietary practices, lack confidence that their diets comply with healthful dietary practices (especially among FSP participants), do not engage in dietary habits to lower fat and cholesterol, do not meet the Food Guide Pyramid or Dietary Guidelines recommendations, and have inadequate usual intakes of several micronutrients; DHKS data provide little evidence of differences in dietary intake between FSP participants and other low-income nonparticipants. DHKS 1994-1996 results cannot be compared to DHKS 1989-1991 results.

Citations: USDA/ARS 2004; Gleason P et al. 2000; Obayashi S et al. 2003; Capps O et al. 2002; Perez-Escamilla R et al. 2002.

Now think about the foods you eat. Would you say you always, sometimes, rarely, or never: Have fruit for dessert when you eat dessert? (always, sometimes, rarely, never)

Preliminary Rank High **Instrument** Diet and Health Knowledge Survey (DHKS) 1994-1996 (conducted as follow-up to CSFII)

Administration

Population	National
Subgroup	Nationally representative; Adults 20+ years of age; Oversampling of low-income.
Sample Size(s)	n=5,649 in national study; n=1,196 for Obayashi S et al 2003 analysis.
Mode	Interviewer:Telephone interview; Trained interviewer.

	Documented	Description
Other Languages		
Low-Income	X	
Low Education Level		10.8% had less than a HS degree in Obayashi S et al. 2003.

Evidence

Reliability		
Internal Validity		
External Validity		
Sensitive to Change		
Related to Outcome(s)	X	Significant predictor of saturated fat intake.
Other	X	Other tests for reliability and validity were conducted on the DHKS 1989-1991 instrument.

Notes: DHKS data indicate that many low-income adults do not know specific facts related to the health consequences or benefits of certain dietary practices, lack confidence that their diets comply with healthful dietary practices (especially among FSP participants), do not engage in dietary habits to lower fat and cholesterol, do not meet the Food Guide Pyramid or Dietary Guidelines recommendations, and have inadequate usual intakes of several micronutrients; DHKS data provide little evidence of differences in dietary intake between FSP participants and other low-income nonparticipants. DHKS 1994-1996 results cannot be compared to DHKS 1989-1991 results.

Citations: USDA/ARS 2004; Gleason P et al. 2000; Obayashi S et al. 2003; Capps O et al. 2002.

I reduce fat in recipes by substituting ingredients and cutting portions. (strongly disagree, disagree, neutral/NA, agree, strongly agree)

Preliminary Rank Medium **Instrument** Eating Behavior Patterns Questionnaire (2003)

Administration

Population	Local
Subgroup	Convenience sample of African American women in Nashville, TN.
Sample Size(s)	n=277.
Mode	Not specified.

	Documented	**Description**
Other Languages		
Low-Income		
Low Education Level		23% had less than HS degree.

Evidence

Reliability	**X**	Within "low-fat eating" group, internal consistency = .84.
Internal Validity		
External Validity		
Sensitive to Change		
Related to Outcome(s)	**X**	Within "low-fat eating" group, FFQ correlations: total fat = -.37, saturated fat = -.37, fiber= -.04.
Other	**X**	Cognitive testing.

Notes: Suggest that this question be made into 2 questions.

Citations: Schulndt DG et al. 2003.

I choose healthy foods to prevent heart disease. (strongly disagree, disagree, neutral/NA, agree, strongly agree)

Preliminary Rank Medium **Instrument** Eating Behavior Patterns Questionnaire (2003)

Administration

Population	Local
Subgroup	Convenience sample of African American women in Nashville, TN.
Sample Size(s)	n=277.
Mode	Not specified.

	Documented	Description
Other Languages		
Low-Income		
Low Education Level		23% had less than HS degree.

Evidence

Reliability	**X**	Within "low-fat eating" group, internal consistency = .84.
Internal Validity		
External Validity		
Sensitive to Change		
Related to Outcome(s)	**X**	Within "low-fat eating" group, FFQ correlations: total fat = -.37, saturated fat = -.37, fiber= -.04.
Other	**X**	Cognitive testing.

Notes:

Citations: Schulndt DG et al. 2003.

I carefully watch the portion sizes of my foods. (strongly disagree, disagree, neutral/NA, agree, strongly agree)

Preliminary Rank Medium **Instrument** Eating Behavior Patterns Questionnaire (2003)

Administration

Population	Local
Subgroup	Convenience sample of African American women in Nashville, TN.
Sample Size(s)	n=277.
Mode	Not specified.

	Documented	**Description**
Other Languages		
Low-Income		
Low Education Level		23% had less than HS degree.

Evidence

Reliability	**X**	Within "low-fat eating" group, internal consistency = .84.
Internal Validity		
External Validity		
Sensitive to Change		
Related to Outcome(s)	**X**	Within "low-fat eating" group, FFQ correlations: total fat = -.37, saturated fat = -.37, fiber= -.04.
Other	**X**	Cognitive testing.

Notes:

Citations: Schulndt DG et al. 2003.

How often do you shop with a grocery list? (do not do, seldom, sometimes, most of the time, almost always)

Preliminary Rank High **Instrument** EFNEP (2001)

Administration

Population	State
Subgroup	Nonpregnant nonlactating women ages 12-50 in VA, CO, OK, SD.
Sample Size(s)	n=5,159.
Mode	Interviewer:Program administrators.

	Documented	Description
Other Languages		
Low-Income	X	Two-thirds of the sample had a household income of less than $500 per month.
Low Education Level		

Evidence

Reliability	X	Internal consistency: .27 thinks about healthy choices, .30 plans meals, .22 use food labels.
Internal Validity	X	Content validity by experts.
External Validity		
Sensitive to Change		
Related to Outcome(s)		No significant correlations found.
Other		

Notes:

Citations: Hersey J et al. 2001; Anliker J et al. 2003.

In the past 3 months, how often did you eat fruit for dessert? (usually/always, sometimes, rarely, never)

Preliminary Rank Medium **Instrument** Fat and Fiber Behavior Questionnaire (1997)

Administration

Population	Local
Subgroup	Randomized clinical trial in Puget Sound area. 68% were women, mean age = 51.
Sample Size(s)	n=1,796.
Mode	Interviewer:Telephone.

	Documented	**Description**
Other Languages		
Low-Income		
Low Education Level		Participants were well educated.

Evidence

Reliability	**X**	Within "replace high-fat with fruits and vegetables" group test-retest correlation coefficient =.61, baseline internal consistency = .50.
Internal Validity	**X**	Within "replace high-fat with fruits and vegetables" criterion: FFQ baseline correlation = .33. Within "fruits and vegetables" criterion: FFQ baseline correlation = .43.
External Validity		
Sensitive to Change		
Related to Outcome(s)		
Other		

Notes: Modified version of the Food Habits Questionnaire.

Citations: Shannon J et al. 1997.

Does your current weight loss plan include: some form of dieting, that is, eating differently from the way you usually eat for the sake of losing weight? Physical exercise, such as walking, swimming or calisthenics? Eating meal replacements, such as ultra Slim-Fast, in powder, liquid, tablet, or water form? Fasting for twenty-four hours or longer? Going to a weight loss program such as Weight Watchers or Nutri-System, which may offer diet counseling, therapy, behavior modification, or hypnosis? Going to any other kind of weight loss program offered by a physician, weight loss center, school or clinic? Causing yourself to vomit after you eat? Surgery, such as wiring your jaw, liposuction, gastric bubble, or some other medical procedure? (Y/N)

Preliminary Rank Not Ranked **Instrument** FDA/NHLBI Weight Loss Practices Survey (1991)

Administration

Population	National
Subgroup	Noninstitutionalized adults who are trying to lose weight at the time of the survey.
Sample Size(s)	n=1,655.
Mode	Interviewer:Telephone (RDD).

	Documented	**Description**
Other Languages		
Low-Income		
Low Education Level		

Evidence

Reliability
Internal Validity
External Validity
Sensitive to Change
Related to Outcome(s)
Other

Notes: There were inquiries about 8 other weight loss practices not included among the response category options above. Relates to "healthy weight."

Citations: Interagency Board for Nutrition Monitoring and Related Research 2000.

[IF RESPONDENT DOES NOT CONSIDER "DIETING" AS PART OF WEIGHT LOSS PLAN, SKIP] Does your diet plan call for avoiding or eating less of certain foods than you did before you began your diet plan? (Y/N) What types of food are you trying to avoid or eat less of? [MARK ALL THAT APPLY. IF "FATTENING FOODS" OR "JUNK FOODS" MENTIONED, ASK: WHAT KINDS OF FOOD DO YOU MEAN?] (PORK; OTHER RED MEATS; FRIED FOODS; CAKE, PIES, COOKIES, ICE CREAM, DOUGHNUTS; BREADS, BISCUITS, ROLLS; STARCHY FOODS, RICE, POTATOES; SALT; SUGAR, SWEETS, CANDY, SYRUPS; CHIPS, NUTS, PORK RINDS, PRETZELS, SALTY SNACKS; EGGS; WHOLE MILK/CHEESE/OTHER DAIRY PRODUCTS; MARGARINE, BUTTER, OIL; FAT/SATURATED FAT/FATTY FOODS; SWEET DRINKS, COKE, KOOL-AID, SWEET TEA; ALCOHOL; OTHER (SPECIFY))

Preliminary Rank Not Ranked **Instrument** FDA/NHLBI Weight Loss Practices Survey (1991)

Administration

Population National

Subgroup Noninstitutionalized adults who are trying to lose weight at the time of the survey.

Sample Size(s) n=1,656.

Mode Interviewer:Telephone (RDD).

	Documented	**Description**
Other Languages		
Low-Income		
Low Education Level		

Evidence

Reliability	
Internal Validity	
External Validity	
Sensitive to Change	
Related to Outcome(s)	
Other	

Notes: Relates to "healthy weight."

Citations: Interagency Board for Nutrition Monitoring and Related Research 2000.

[IF RESPONDENT DOES NOT CONSIDER "DIETING" AS PART OF WEIGHT LOSS PLAN, SKIP] Does your diet plan call for eating more of certain foods than you did before you began your diet plan? (Y/N) What types of food are you trying to eat more of? [MARK ALL THAT APPLY.] (CHICKEN, PORK; OTHER RED MEAT; SALADS; FRUITS; VEGETABLES; CEREALS, GRAINS, BREAD; OTHER HIGH FIBER FOODS; EGGS, LOWFAT/SKIM MILK; OTHER LOWFAT FOODS; OTHER (SPECIFY))

Preliminary Rank Not Ranked **Instrument** FDA/NHLBI Weight Loss Practices Survey (1991)

Administration

Population National

Subgroup Noninstitutionalized adults who are trying to lose weight at the time of the survey.

Sample Size(s) n=1,657.

Mode Interviewer:Telephone (RDD).

	Documented	Description
Other Languages		
Low-Income		
Low Education Level		

Evidence

Reliability	
Internal Validity	
External Validity	
Sensitive to Change	
Related to Outcome(s)	
Other	

Notes: Relates to "healthy weight."

Citations: Interagency Board for Nutrition Monitoring and Related Research 2000.

[IF RESPONDENT DOES NOT CONSIDER "DIETING" AS PART OF WEIGHT LOSS PLAN, SKIP] As part of your current weight loss plan, are you skipping any meals? (Y/N) Which meal or meals are you skipping [MARK ALL THAT APPLY.] (BREAKFAST; LUNCH/MIDDAY OR NOON MEAL; DINNER /EVENING MEAL)

Preliminary Rank Not Ranked **Instrument** FDA/NHLBI Weight Loss Practices Survey (1991)

Administration

Population National

Subgroup Noninstitutionalized adults who are trying to lose weight at the time of the survey.

Sample Size(s) n=1,658.

Mode Interviewer:Telephone (RDD).

	Documented	Description
Other Languages		
Low-Income		
Low Education Level		

Evidence

Reliability
Internal Validity
External Validity
Sensitive to Change
Related to Outcome(s)
Other

Notes: Relates to "healthy weight."

Citations: Interagency Board for Nutrition Monitoring and Related Research 2000.

Do you eat fruit and vegetables as snacks? (usually/always, often, sometimes, rarely, never)

Preliminary Rank Ideal **Instrument** Food Behavior Checklist (1997)

Administration

Population	Local
Subgroup	African American and White FSP participants from 7 counties in CA. 8 California counties among women eligible for food stamps. 9 counties in California of women receiving food stamps.
Sample Size(s)	n=95, n=100, n=132.
Mode	Interviewer:Telephone and in-person among a group.

	Documented	Description
Other Languages	X	Spanish
Low-Income	X	
Low Education Level		

Evidence

Reliability	X	Test-retest correlation coefficient = .53.
Internal Validity	X	Correlation coefficient to servings of fruit from 24 hour recall = .22.
External Validity		
Sensitive to Change	X	p value = <.05
Related to Outcome(s)	X	Correlation to serum carotenoid level =.27
Other	X	A Flesch Reading Ease score of 96 and a Flesch Kincaid score of 2.8 indicates less than fourth grade reading level.

Notes:

Citations: Murphy SP et al. 1998; Murphy SP et al. 2001; Townsend MS et al. 2003.

Would you describe your diet as excellent, very good, good, fair, or poor?

Preliminary Rank Ideal **Instrument** Food Behavior Checklist (1997)

Administration

Population	Local
Subgroup	African American and White FSP participants from 7 counties in CA. 8 California counties among women eligible for food stamps. 9 counties in California of women receiving food stamps.
Sample Size(s)	n=95, n=100, n=132.
Mode	Interviewer:Telephone and in-person among a group.

	Documented	Description
Other Languages	X	Spanish
Low-Income	X	
Low Education Level		

Evidence

Reliability		Control group reliability test not significant.
Internal Validity	X	Correlation coefficient to servings of fruit from 24 hour recall = .35. Coefficient to average of fruit =.30.
External Validity		
Sensitive to Change	X	p value = <.001
Related to Outcome(s)	X	Correlation to serum carotenoid level =.45.
Other	X	A Flesch Reading Ease score of 96 and a Flesch Kincaid score of 2.8 indicates less than fourth grade reading level.

Notes:

Citations: Murphy SP et al. 1998; Murphy SP et al. 2001; Townsend MS et al. 2003.

When shopping, do you use the Nutrition Facts on the food label to choose foods? (usually/always, often, sometimes, rarely, never)

Preliminary Rank Ideal **Instrument** Food Behavior Checklist (1997)

Administration

Population	Local
Subgroup	African American and White FSP participants from 7 counties in CA. 8 California counties among women eligible for food stamps. 9 counties in California of women receiving food stamps.
Sample Size(s)	n=95, n=100, n=132.
Mode	Interviewer:Telephone and in-person among a group.

	Documented	Description
Other Languages	X	Spanish
Low-Income	X	
Low Education Level		

Evidence

Reliability	X	Test-retest correlation coefficient = 0.39.
Internal Validity	X	Correlation coefficient to servings of fruit from 24 hour recall = .23. Coefficient to HEI =.25.
External Validity		
Sensitive to Change	X	p value = <.001
Related to Outcome(s)	X	Correlation to serum carotenoid level =.25.
Other	X	A Flesch Reading Ease score of 96 and a Flesch Kincaid score of 2.8 indicates less than fourth grade reading level.

Notes:

Citations: Murphy SP et al. 1998; Murphy SP et al. 2001; Townsend MS et al. 2003.

Do you buy sweetened cereal (like Frosted Flakes, Fruit Loops, Lucky Charms, etc.)? (usually/always, often, sometimes, rarely, never)

Preliminary Rank High **Instrument** Food Behavior Checklist (1997)

Administration

Population	Local
Subgroup	African American and White FSP participants from 7 counties in CA. 8 California counties among women eligible for food stamps. 9 counties in California of women receiving food stamps.
Sample Size(s)	n=95, n=100, n=132.
Mode	Interviewer:Telephone and in-person among a group.

	Documented	Description
Other Languages	X	Spanish
Low-Income	X	
Low Education Level		

Evidence

Reliability		Control group reliability test not significant.
Internal Validity	X	Correlation coefficient to servings of fruit from 24 hour recall = .23
External Validity		
Sensitive to Change		
Related to Outcome(s)		
Other		

Notes:

Citations: Murphy SP et al. 1998; Murphy SP et al. 2001; Townsend MS et al. 2003.

Think about how you usually do things now. How many times a week do you usually eat food from a fast-food restaurant? (#)

Preliminary Rank High **Instrument** Food Behavior Checklist (1997)

Administration

Population Local

Subgroup African American and White FSP participants from 7 counties in CA. 8 California counties among women eligible for food stamps. 9 counties in California of women receiving food stamps.

Sample Size(s) n=95, n=100, n=132.

Mode Interviewer:Telephone and in-person among a group.

	Documented	Description
Other Languages	X	Spanish
Low-Income	X	
Low Education Level		

Evidence

Reliability	X	Test-retest correlation coefficient = .58.
Internal Validity	X	Correlation coefficient to servings of vegetables from 24 hour recall = -.20 and carotene = -.27. Coefficient to total fat =.28 and saturated fat = .25.
External Validity		
Sensitive to Change		Not significant.
Related to Outcome(s)		No significant correlation to serum carotenoid level.
Other	X	A Flesch Reading Ease score of 96 and a Flesch Kincaid score of 2.8 indicates less than fourth grade reading level.

Notes:

Citations: Murphy SP et al. 1998; Murphy SP et al. 2001; Townsend MS et al. 2003.

APPENDIX A

INSTRUMENTS INVENTORIED AND QUESTION TOPIC AREAS

TABLE A.1

INSTRUMENTS INVENTORIED AND QUESTION TOPIC AREAS

Instrument	Number of Questions Inventoried	Dietary Intake						Knowledge	Attitudes	Behaviors
		Fruits and Vegetables	Grains, Legumes, and Fiber	Variety	Fat	Calcium Food Sources	Non-alcoholic Beverages			
Behavioral Risk Factor Surveillance System State (BRFSS) Questionnaire (2003)	6	X								
California Dietary Practices Survey (2001)	34		X	X	X	X	X	X	X	X
Current Population Survey (CPS) (2001)	4									X
Diet and Health Knowledge Survey (DHKS) 1994-1996	80	X	X	X	X	X		X	X	X
Eating Behavior Patterns Questionnaire (2003)	51	X			X					X
Expanded Food and Nutrition Education Program (EFNEP) Survey (2001)	4									X
Fat and Fiber Behavior Questionnaire (1997)	28	X	X	X	X	X				X
Fat Screener (1996-2002)	17			X	X	X				
Food Behavior Checklist (Murphy) (1997)	34	X	X	X	X	X	X			X
Food Habits Questionnaire (FHQ) (1990)	20	X		X	X	X				X
Fruit, Vegetable, and Fiber Screener (1996-2002)	9	X	X							
General Knowledge (Reynolds) (2002)	9							X		
Gimme 5 Fruit, Juice, and Vegetables for Fun and Health Project (1996)	2							X		
Health Behaviors Module (2000)	4					X				X
Health Beliefs Questionnaire (1997)	2							X		

TABLE A.1 (*continued*)

Instrument	Number of Questions Inventoried	Dietary Intake						Knowledge	Attitudes	Behaviors
		Fruits and Vegetables	Grains, Legumes, and Fiber	Variety	Fat	Calcium Food Sources	Non-alcoholic Beverages			
Health and Diet Survey (2001)	35				X			X	X	X
Health Habits and History Questionnaire (HHHQ) (1987)	8	X	X		X					X
Massachusetts' TreatWell 5 A Day Program (1996)	3	X	X			X				
National 5 A Day Survey (1997)	2	X						X		
National Cancer Institute (NCI) All-Day Screener (2000)	11	X	X							
National Cancer Institute (NCI) By Meal Screener (2000)	10	X	X							
National Cancer Institute (NCI) Diet History Questionnaire (DHQ) (2002)	9					X	X			
National Food Stamp Program Survey (1996)	47	X			X			X	X	X
National Health Interview Survey (NHIS) Sample Adult Core (2001)	1							X		
National Health and Nutrition Examination Survey (NHANES) Diet Behavior and Nutrition Sample Person Questionnaire (DBQ) (1999-2003)	14	X	X	X	X	X				X
National Health and Nutrition Examination Survey (NHANES) Weight History Sample Person Questionnaire (WHQ) (1999-2003)	2									X

NOTE: This table does not include the 13 'not ranked' questions from instruments listed in Appendix D.

APPENDIX B

INSTRUMENTS REVIEWED BUT NOT INVENTORIED

TABLE B.1

INSTRUMENTS REVIEWED BUT NOT INVENTORIED

Instrument	Date of Development, Publication, or Most Recent Revision
Block Food Frequency Questionnaire	1987
Continuing Survey of Food Intakes by Individuals (CSFII)	1994-1996
Diet Habit Survey	1992
Diet Quality Index for Pregnancy	2002
Dietary Risk Assessment	1991
Food Behavior Checklist (Kristal)	1990
Fruit, Juice, and Vegetable Food Frequency Questionnaire	1999
Harvard Food Frequency Questionnaire	1985
MEDFICTS	2001
Modified Food Habits Questionnaire	1997
National Health Interview Survey	2003
National Health Interview Survey Cancer Control Supplement	1987
National Survey of America's Families	1999
Nutrition Screening Initiative	2002
Pediatric Nutrition Surveillance System	2001
Perceived Diabetes and Dietary Competence	2002
Pregnancy Nutrition Surveillance System	1996
Pregnancy Risk Assessment Monitoring System	2002
PrimeScreen	2000
Quick Check for Fat	1992
Survey of Income and Program Participation	2001
Women's Health Trial Food Frequency Questionnaire	1996

APPENDIX C

GLOSSARY OF TERMS USED IN THE NOTEBOOK TEMPLATE

GLOSSARY

The notebook template is designed to show the primary research findings with respect to the administration and testing of the survey instruments and the questions or sets of questions that were selected for the notebook.[1] This appendix defines the terms we used in our reporting of the documented evidence that we reviewed.

INSTRUMENT

'Instrument' refers to the larger data collection questionnaire or other survey tool that a single question or set of questions came from, if applicable. Potential descriptions include the specific national, state, or local instruments (e.g., BRFSS; NHANES; EFNEP module; Food Behavior Checklist; Gimme 5 Fruit, Juice, and Vegetables for Fun and Health). In addition, we include the year of the most recent instrument.

ADMINISTRATION

Population

The 'population' refers to whether the single question or set of questions was used with a national, state, or local sample.

Subgroup

The 'sub-group' characteristic captures specific information on the sample population the single question or set of questions was used with, including, as available:

- Geographical setting
- Age range
- Gender
- Ethnic breakdown of the sample
- Lifecycle stage (e.g., elderly, pregnant women, lactating women)
- FSNE or other federal assistance program audience

[1]Each template contains one question or set of questions, the corresponding response categories in parentheses, and, if applicable, interviewer instructions. Response categories and interviewer instructions in capital letters indicate that the information was not read to the respondent.

- Over-sampling of a specific group

Sample Size(s)

This section includes the sample size(s) the single question or set of questions was used with, or the sample size that the research findings are reported for.

Mode

'Self-administered' refers to the individual subject entering a response to the single question or set of questions. If known, we indicate whether the subject used a paper/pencil or automated instrument, the time it took to complete the question or set of questions, the setting (e.g., office, home, clinic), and whether the instrument was administered in a group or individual setting.

'Interviewer-administered' refers to a person other than the subject entering a response to the single question or set of questions based on an in-person or telephone interview. If known, we indicate whether this person was a trained interviewer, instructor, caregiver, or other designation. We also include the time it took to complete the question or set of questions, the setting (e.g., office, home, clinic), and whether the instrument was administered in a group or individual setting.

Other Languages

The review indicates if the question or set of questions was administered in other languages or dialects, if known.

Low-Income

Low-income is defined as gross income below 130% of the poverty level, which represents the cut-off point for Food Stamp Program eligibility. The percent-of-poverty-line information was not specifically included in all of the citations we reviewed; if the author used the term low-income to describe their sample, we indicated that it was a low-income audience.

Low Education Level

A 'low education level' is defined as having less than a high school degree or equivalent.

EVIDENCE

Reliability

'Reliability' refers to whether an estimate can be reproduced when the measure is repeated (1,2). There are various forms of reliability noted in our review, as defined below:

- Internal consistency: assesses the consistency within a set of items and is often reported as a Cronbach's coefficient alpha. For example, a respondent may indicate from one question that they never consume dairy products, but then respond to a different question that they drink 3 glasses of cow's milk a day. If these responses were typical, these questions would have low internal consistency (2,3,4,5).

- Test-retest reliability: also referred to as stability; assesses the consistency of a measure over time and is usually expressed as a correlation coefficient. For example, suppose an individual responds that they average two servings of vegetables a day, and two weeks later when asked the same question, they say they average two servings of vegetables a day. The question would have high test-retest reliability if the intake was truly unchanged (2,4,5,6).

- Inter-rater reliability: sometimes referred to as inter-observer reliability; assesses the degree to which different raters/observers give consistent estimates of the same phenomenon (2).

If included in the citation, correlation coefficients and Cronbach's alpha coefficients are provided to express reliability.

Validity refers to whether the method measures what it purports to measure and provides an unbiased estimate. There are two general categories of validity: internal and external (1,2).

Internal Validity

'Internal validity' refers to whether the study was properly conducted without major methodologic problems and is without substantial measurement, selection or confounding bias. There are various forms of internal validity, as defined below (1,2).

- ***Construct validity***: scores from an instrument provide a good measure of a concept. For example, if questions are tested between two groups with extreme differences in knowledge about the relevant topic, the group with more knowledge should score higher. It can also be tested before and after an intervention, and the scores after the intervention should be higher if the intervention is known to have had an effect (3,4,6).

- ***Content validity***: the instrument items reasonably represent the subject under investigation. For example, a detailed description justifying the content of the questionnaire could be provided, the questionnaire could be reviewed by a panel of experts to ensure all of the important aspects are covered, or members of the target audience could be asked if all the appropriate questions are included (3,4,6).

- ***Criterion validity***: this measures a newly developed instrument against another standard. For example, mean nutrient intakes calculated from a short food frequency questionnaire can be compared to mean nutrient intakes calculated from a standardized dietary method (e.g., 24-hour dietary recalls, dietary records, or dietary

history), or to biomarkers (2,3,4,5,7). Predictive validity, a type of criterion validity, describes the extent to which the measure will predict future outcomes (1,3).

If included in the citation, correlation coefficients are provided to express internal validity. This could include comparison to self-report methods (e.g., 24-hour recall, record, diet history, food frequency questionnaire) or non-self-report methods (e.g., biomarkers, urinary nitrogen, doubly-labeled water, observation).

External Validity

'External validity' refers to whether the results can be generalized to a larger population. This might be indicated, for example, if the results were externally validated, or if the items were used with a randomized, representative sample (1,2).

Sensitive to Change

The 'sensitive to change' characteristic refers to the magnitude of difference over time by comparing a pre-test to a post-test. For example, in comparing results from a pre-test and post-test, the response to a question should change in the proposed direction after intervention, if the intervention is known to have an effect.

Related to Outcome(s)

This section indicates whether the question or set of questions has been shown to be related to an intermediate or long-term nutrition outcome (e.g., usual dietary or nutrient intake, iron deficiency anemia, serum carotenoids) or health outcome (e.g., overweight, serum cholesterol, blood pressure level). Outcomes of interest are those that are consistent with the conceptual model of 'diet to health' (8).

Other

The 'other' characteristic includes the following information if specifically noted in a citation:

- ***Cognitive testing***: ensuring the instruments are appropriate in terms of age, literacy level, and culture. This typically refers to one-on-one testing or 'think-aloud' testing of the questions prior to final development and use. For example, focus groups can be used to explore concepts and conduct retrospective 'think aloud' interviews to form the development of survey questions (4).
- Field or pilot testing
- Reading ease or reading level scores
- Additional validity or reliability testing on early versions of the instrument

NOTES

The ‘notes’ section of the template contains information regarding other outcomes related to an instrument, rephrasing suggestions from the project team, derivation or duplication of a question or set of questions from another instrument, and other relevant information relating to the question and/or instrument.

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APPENDIX D

INSTRUMENTS WITH QUESTIONS THAT WERE NOT RANKED

TABLE D.1

INSTRUMENTS WITH QUESTIONS THAT WERE NOT RANKED

Instrument	Date of Development, Publication, or Most Recent Revision
Panel Study of Income Dynamics (PSID)	1999
Shopping for Health (Food Marketing Institute)	2003
Weight Loss Practices Survey	1991

APPENDIX E

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