



# Nutrition for Family Living

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## June, 2008 Topics

Validity and Reliability of Youth Fruit, Vegetable and Physical Activity Evaluations in the Shape Up Somerville project

2008 Food & Health Survey: Consumer Attitudes toward Food, Nutrition & Health

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## Validity and Reliability of Youth Fruit, Vegetable and Physical Activity Evaluations in the Shape Up Somerville project

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By Gayle Coleman

Good evaluation tools are important for assessing the success of nutrition and physical activity programs. However, it is challenging to develop good tools to assess behavior change in children for several reasons. Children have difficulty recalling what they ate or remembering the physical activities they were involved in during previous days. It also is difficult for children to keep records of these behaviors. One of the challenges with developing evaluation tools to assess behavior change in children is determining whether these tools are valid and reliable. That is, do the tools accurately measure what you want to measure (valid) and will you get the same results with the tool if it is used with the same person multiple times if there is no intervention in between administering the tools (reliable)?

Research faculty working with Shape Up Somerville, a community-based, obesity-prevention study targeting 6- to 9-year-old children in three sites in the Boston area, developed two questionnaires, one to assess children's fruit and vegetable intake and a second to assess physical activity and TV viewing behaviors. They used a combination of interviewer-assisted food and physical activity recalls, direct observation, and parent interviews to determine validity and reliability of their questionnaires.

The questionnaire for fruit and vegetable intake was a modified version of the Dole "Fruits and Vegetables You Ate Yesterday" survey which incorporates a picture-sort method. To administer the questionnaire, an interviewer asked each child about their source of lunch (school lunch, brought from home, etc.) the previous day, whether they ate any of the fruits and vegetables that were pictured at that lunch, and if so which fruits and vegetables. The pictures included fruits and vegetables that were served in the school lunch the day before plus a mix of fruits and vegetables that had not been served during school lunch that day but were served regularly by the school.

The second questionnaire included questions on physical activity and TV viewing. The physical activity behaviors were based on activities listed in the Coordinated Approach to Child Health (CATCH) physical activity interview and interview questions from Sports Play & Active Recreation for Kids (SPARK). The TV viewing during breakfast and dinner questions were adapted from the Harvard Prevention Research Center survey. To administer the questionnaire, an interviewer asked each child questions focused on the games the child usually played, how the child got to school and how often the child watched TV.

Reliability of the fruit and vegetable questionnaire and physical activity and TV viewing questionnaire was done by conducting the evaluation with each child twice in the same day, with test-retest approximately 1 to 2 hours apart. Validity of the fruit and vegetable questionnaire was



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done by discreet, direct observation of the children by school staff the day before the questionnaire was administered to the child. Researchers surveyed parents about their children's behaviors to validate the physical activity and TV viewing questionnaire. Parents were surveyed by telephone on the same day that their children were interviewed.

Eighty six children and their parents, 40 from the intervention community and 46 from the control communities, were randomly recruited from the larger Shape Up Somerville study to participate in the validity and reliability study. Demographics for both groups were similar with a racial mix of approximately 73% white, 1% black, 1% Native American, 6% Hispanic, 10% Asian and 8% multiracial. Both communities were considered low-moderate income.

The researchers found that children dependably answered questions regarding their sources of school lunch, whether or not they had eaten fruit or vegetables on the prior day, and when aided with food pictures which specific fruits and vegetables they had eaten. Similarly, they found that the physical activity and TV viewing questionnaire proved to be reliable for both boys and girls. They also found that children provided valid answers for questions on the fruit and vegetable questionnaire. Recall for fruit intake was slightly higher than for vegetable intake for both boys and girls. For the physical activity questions, the greatest agreement between child and parent report (highest validity) were for jumping rope, type of transportation to and from school and having a TV in the room where the child sleeps. The lowest agreements were dancing and skating for the girls, and ball games and playing games for boys. The lowest agreements when looking at combining results for both sexes were watching TV during dinner and breakfast.

In conclusion, the fruit and vegetable intake questionnaire and physical activity and TV viewing questionnaire used in the Shape Up Somerville project were reliable tools. A combination of interview-assisted recall using a picture sort method and direct observation by school staff indicated that the fruit and vegetable questionnaire was valid. Similarly, a combination of interview-assisted recall and parent interviews indicated that the physical activity and TV viewing questionnaire were valid, although there was better agreement for some questions than others.

*Implications for Extension Educators:* Good evaluation tools are essential for documenting the impact of our programs. Increased understanding of what makes an evaluation tool good, and ideas for showing reliability and validity can help us in identifying and using good evaluations. Identification of evaluation tools that could be used with children between the ages of 6 and 9, such as the interview-assisted, picture-sort questionnaire might be useful for Extension Educators.

Source: Economos CD, Sacheck JM, Chui KKH, Irizzary L, Guillemont J, Collins J, Hyatt RR. School-Based Behavioral Assessment Tools Are Reliable and Valid for Measurement of Fruit and Vegetable Intake, Physical Activity, and Television Viewing in Young Children. *J Am Diet Assoc.* 2008;108:695-701.



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## 2008 Food & Health Survey: Consumer Attitudes toward Food, Nutrition & Health

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By Gayle Coleman

In May 2008 a report on results of the 2008 Food & Health Survey: Consumer Attitudes toward Food, Nutrition and Health, conducted by the International Food Information Council (IFIC), was released. The report can be found at: <http://www.ific.org/research/foodandhealthsurvey.cfm>. The survey was web-based with 129 questions. The target audience was adults 18 years or older representing a cross-section of America. Approximately 1000 people responded to the survey. Data was weighted for age, income, education and race to ensure that the distribution of the sample reflects the population.

### Key findings:

- Americans' degree of satisfaction with their health status is relatively high with 59% indicating "extremely satisfied" or "somewhat satisfied."
- 75% of respondents said they are concerned with their weight (compared to 66% in 2006).
- 69% of those who made a change to their diet cite making the change "to lose weight."
- 67% of Americans reported making changes to improve the healthfulness of their diet, with "changing the portion sizes of meals or snacks I consume" reported by 60% of these individuals.
- 52% of those trying to lose or maintain weight reported "increased physical activity" as a specific diet-related change.
- Only 15% of respondents correctly estimated the recommended number of calories per day for a person their age, height, weight and physical activity level.
- 92% of respondents said that breakfast was the most important meal of the day but only 46% of them reported eating breakfast seven days a week.
- While taste and price continue to have the greatest impact on Americans' decisions to buy foods and beverages, the importance of "healthfulness" was 62%, versus 58% in 2006.
- 70% of Americans are concerned with the amount of fat they consume and 68% say they are concerned with the type of fat they consume.
- Awareness of trans fat grew to 91%, compared to 64% in 2006.
- 69% of Americans are concerned with the amount of sugar they consume.
- 52% of respondents reported being concerned with the type of carbohydrate they consume, compared to 46% in 2006. However, there was no significant change in the amount of carbohydrate they consume.
- 82% of consumers reported that they were confident in their ability to safely prepare foods at home.
- 96% of Americans said they regularly take at least one food safety precaution when cooking, preparing and consuming food. However, only 48% said they use a different cutting board for each type of food and only
- 29% said they use a food thermometer to measure the internal temperature of meat.
- 87% of Americans said they were aware of MyPyramid and 26% reported using MyPyramid in some way.

*Implications for Extension Educators:* The results of this survey help inform our teaching by giving us a general picture of the knowledge and attitudes of the American population.