National Cancer Institute

Division of Cancer Control and Population Sciences

http://cancercontrol.cancer.gov

About the Dietary Research Resources of the Risk Factor Monitoring and Methods Branch

Applied Research Program

Introduction

The Risk Factor Monitoring and Methods Branch (RFMMB) is one of three branches in the National Cancer Institute's Applied Research Program. RFMMB contributes to reducing cancer in the US by serving as a critical link between etiologic research on cancer risk factors, such as tobacco, diet, physical activity, sun exposure, and genetics and family history, and the translation of such research into targeted and effective interventions for prevention.

Diet is considered one of the major risk factors for cancer and is therefore a primary area of research within RFMMB. The Branch monitors food and nutrient intakes among the general population and selected subpopulations, and it conducts methodological research to increase the precision of dietary intake estimates by improving data capture and analytic procedures.

All of the following resources are available at http://riskfactor.cancer.gov/diet.

Usual Intake Estimation

A new method is available to estimate usual dietary intakes of foods and nutrients. This method can be used to:

- Estimate the distribution of usual intake for a population or subpopulation;
- Assess the effects of individual covariates on consumption; and
- Predict individual intake for use in a model to assess the relationship between diet and disease or other variable.

Healthy Eating Index (HEI)–2005

The HEI-2005 has been developed to be consistent with current dietary guidance. It replaces the previous HEI and measures compliance with the key diet-related recommendations of the 2005 Dietary Guidelines. The psychometric properties of the new index have been evaluated.

NHANES Dietary Web Tutorial

Web-based tutorials aimed at promoting broader, more proficient use of NHANES data have been developed. The tutorials, including one specifically for dietary data, are composed of modules that provide background information to help users understand key concepts; they also take users step-by-step through typical analytic procedures. NHANES data information, explanations for SAS or SUDAAN programs, and downloadable sample program code are provided to facilitate the learning process. The tutorials are designed for a wide range of NHANES users including those in government, research, education, public health, and medical practice.

Automated Self-administered 24-hour Dietary Recall (ASA24)

ASA24 is a freely available Web-based tool that enables automated self-administered 24-hour recalls. ASA24 consists of a Respondent Web site used to collect recall data in English or Spanish and a Researcher Web site used to manage study logistics and obtain analyses. ASA24 uses a dynamic user interface that includes an animated character to instruct participants. Respondents are guided through the recall using a modified version of the USDA's Automated Multiple-Pass Method, using multiple images per food to help respondents estimate portion size. Optionally, dietary supplement intake data can be collected. Resulting data files include daily estimates of nutrients, foods, and food groups that can be used to compute Healthy Eating Index estimates.

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
National Institutes of Health

Glycemic Index (GI) Values Database

Two files containing GI values for individual foods have been developed. They provide GI values for foods consumed by adults and queried on the Diet History Questionnaire (DHQ) or other Food Frequency Questionnaires (FFQs) used at NCI. The first file is organized by USDA food codes. The second is organized by DHQ food groups that parallel line items on the questionnaire.

Measures of the Food Environment Website

Measurement of the food environment and its effects on dietary behavior is a relatively new, but growing, field of inquiry. This website provides a compilation of articles that include community-level measures of the food environment. Many of the instruments used in the studies are also available on the website. The food environment is defined to include food stores, restaurants, schools, and worksites. The database includes all articles published in English-language, peer-reviewed journals from January 1990 to the present. The website's goal is to enable access to existing measures of the food environment and stimulate the development of the next generation of tools.

Dietary Assessment Calibration/Validation (DACV) Register

The DACV Register contains studies and publications that compare dietary intake estimates from two or more assessment methods, including:

- Food records or diaries
- 24-hour dietary recalls
- Food frequency questionnaires
- Dietary histories
- Observed intakes
- Chemical analyses of duplicate collections of foods consumed
- Biological assessments

Short Dietary Assessment Instruments

Several instruments and analytical software to process the responses have been developed. Although intake estimates are less accurate than those from more detailed methods (e.g. 24-hour recalls), these screeners are useful when assessment of total diet is not required. They can be used to:

- Characterize a population's mean intakes
- Discriminate among individuals or populations regarding higher/lower intakes
- Examine interrelationships between diet and other variables
- Compare findings from a smaller study to a larger population study

These instruments include:

- Fruit and Vegetable Intake Screeners
- Percent Energy from Fat Screener
- Multifactor Screeners

Diet History Questionnaire II (DHQ)

The DHQ II is an updated freely available FFQ consisting of 134 food items and 8 dietary supplement questions. Four versions are available that vary by asking about intakes over the past year or month or by inclusion or exclusion of portion size questions. Data from the original DHQ showed that it provided reasonable nutrient estimates, and three studies assessed its validity. Like other FFQs, the DHQ II is useful for measuring dietary intakes in large-scale population-based studies in which more detailed methods are not economically or practically feasible. It is available in Web-based or paper format.

Genes, Environment, and Health Initiative (GEI)

NCI and other NIH partners are supporting the research and development of innovative wearable sensors to measure dietary intake. This project is part of the NIH-wide GEI. Investigators are using cell phone technology to capture/transmit data, pairing camera/video/audio components with automated processing technology (e.g., image detection, voice recognition), and tailoring web-based software for children.