

Diet-disease associations:

Brief guidelines for the Women's Health Initiative (WHI) Food Frequency Questionnaire (FFQ) (November 16, 2016)

Consult with a WHI nutrition scientist or nutritional epidemiologist when proposing WHI papers or ancillary studies involving diet-disease associations. Contact the WHI Help Desk (helpdesk@whi.org)

FFQs are self-administered questionnaires that ask study participants to report frequency and portion sizes choosing from a fixed list of foods. FFQs are designed with specific research questions and populations in mind. Expanding use beyond the intended scope of an instrument is possible, but must be carefully considered. The WHI FFQ was developed in 1993 to assess baseline dietary intake among all WHI participants, change from baseline to year 3 in the Observational Study, and particularly to be sensitive to capturing baseline and follow-up intake and changes among the WHI Dietary Modification Trial participants. The WHI FFQ has 122 line items, 19 adjustment questions and 4 summary questions. One or more foods may be included within a single line item. When multiple foods are included within a single line item, each food was assigned a proportional contribution based on US intake when the FFQ was developed, not individual intake. Mixed foods have a nutrient profile based on a standard recipe or proprietary ingredient list, not individual intake.

From *WHI Manual Volume 2 Procedures, Section 10: Dietary Assessment*:

“The FFQ is used to assess usual dietary habits. It is a self-administered assessment of the participant’s usual food intake over the previous three months. **The FFQ’s main purpose is to assess group-level and individual-level intakes of selected nutrients, in particular the percent of total kilocalories from macronutrients, beta-carotene, vitamins C, E, and A, dietary fiber, calcium, and iron.**”

Feasibility of diet-disease or associations investigating nutrients other than those listed above should be evaluated carefully before submitting paper proposals. Careful investigation includes reviewing the FFQ (Form 60 – Food Frequency Questionnaire [WHI Form 60: Food Frequency Questionnaire](#) for adequate representation of food sources of nutrients of interest.

A few examples of diet-disease associations that the WHI FFQ does not support:

- Isoflavones from cocoa and chocolate (FFQ has insufficient inclusion of cocoa and chocolate items)
- Isoflavones from soy (insufficient number of soy foods)
- Comparing types of chocolate (dark vs. milk) (FFQ only has chocolate candy)
- Regular vs diet soft drinks (FFQ asks only about regular soft drinks)
- Caffeinated vs decaffeinated beverages when using the FFQ (FFQ does not differentiate)
- Comparing orange juice vs. grapefruit juice (because they are within a single line item)
- Salt or sodium as primary exposures unless using biomarker calibration equations (because not all sources of salt and sodium are delineated, including no information on salt added at the table or in cooking)

Additional considerations when investigating diet-disease associations using the WHI FFQ:

- Time from dietary exposure to outcome may have varying implications depending on the nutrient or diet exposure of interest and time to outcome. Within nutrients themselves, content in the US food supply has and does change over time.
- Dietary quality indices provided with the WHI FFQ data sets or described in the MPEDs and dietary quality indices guidelines [Guidelines for computing Diet Quality Indices](#) are supported for use by the WHI. Please consult the WHI Help Desk (helpdesk@whi.org) regarding other dietary quality indices of interest.
- Biomarker calibration equations are recommended for the following nutrients when investigated as primary exposures: Energy, protein, protein density (% energy from protein), sodium and potassium. Guidelines for computing biomarker calibration equations are found on the WHI website in the Researchers section [Guidelines for Biomarker Calibrations](#)>>
- Additional information about the WHI FFQ can be found on the WHI website under [Dataset Documentation for Diet](#)