

Assessing Diet Quality in Extension Programs: Methods and Recommendations¹

Miranda Badolato, May Alshahwan, Karla Shelnutt, and Anne Mathews²

The purpose of this publication is to guide Extension professionals in choosing a dietary assessment tool that meets their specific needs.

What are dietary assessment tools?

Dietary assessment tools are self-reported instruments, such as a questionnaire, used to measure the quality and/or quantity of food a person consumes (National Cancer Institute 2025b). Some dietary assessment tools collect information about an individual's overall diet quality, while other tools may focus on fewer aspects of diet quality, such as fruit and vegetable or fiber intake. Similarly, some tools assess food intake of a single day while others capture usual intake over a longer period (National Cancer Institute 2025a). Since poor diet quality is a leading risk factor for many chronic diseases like diabetes, heart disease, and some cancers, assessing diet quality appropriately is imperative (Gropper 2023).

Why and when should you use a validated dietary assessment tool for an Extension program?

Assessing dietary intake in a community setting typically relies on detailed recall from participants and is prone to inaccuracies; therefore, choosing a dietary assessment tool that is validated is important (National Cancer Institute 2025b). A dietary assessment tool is validated when it collects the data that it is intended to collect (National Cancer Institute 2025b). A validated dietary assessment tool can overcome some limitations associated with assessing food intake (National Cancer Institute 2025d). Reasons for which using a validated dietary assessment tool is appropriate include the following:

1. To familiarize yourself with your audience and their current dietary habits. Knowing the dietary habits of your audience allows you to tailor your education program specific to their needs.
2. To determine if your program is effective in changing dietary behaviors. Nutrition education programs should have an objective focused on changing a specific dietary behavior. Analyzing changes in the targeted dietary behavior over time may reveal the effectiveness of the program.
3. To provide participants with opportunities for self-reflection on their eating behaviors. Providing feedback from the assessment to participants on their own diet quality throughout an educational program or intervention raises their awareness of their current habits and how these compare with recommendations.

When conducting any dietary assessment, consulting with your affiliated Institutional Review Board may help you follow protocols for data collection and analysis, ensuring that participants' data are handled ethically.

How should you select which dietary assessment tool to use?

There are various types of dietary assessment tools, including 24-hour dietary recall interviews, food frequency questionnaires (FFQ), screeners, and food diaries or food records. To choose the most appropriate dietary assessment tool, consider several factors: the purpose of assessing diet quality, which nutrient(s) or food groups are of interest, the population taking the assessment, how much time is required to complete and score the assessment, and affordability (Figure 1; FAO 2021).

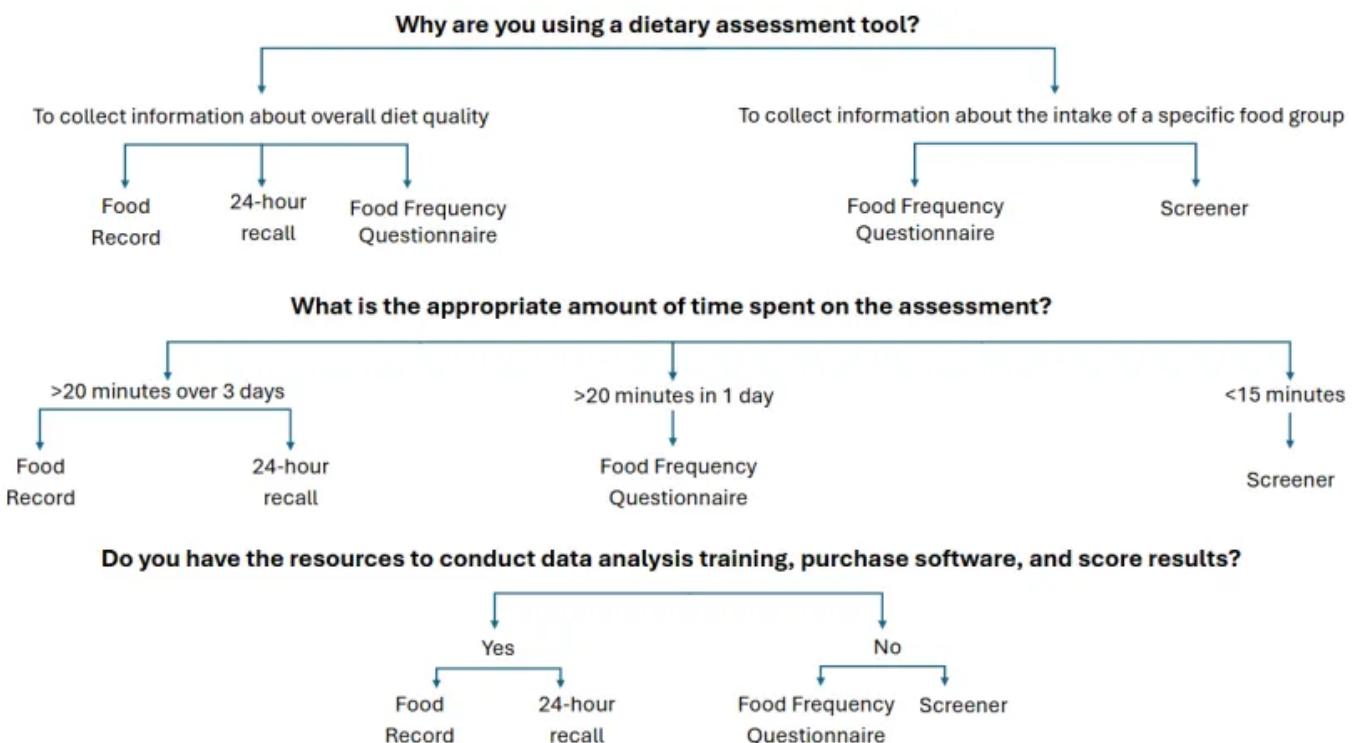


Figure 1. A decision tree for selecting the most appropriate dietary assessment tool.

Credit: Miranda Badolato and May Alshahwan, UF/IFAS

24-Hour Dietary Recall Interviews

A 24-hour dietary recall interview consists of an educator/researcher-led or programmed self-administered interview that asks participants about everything they consumed the day prior, accounting for short-term diet. Traditionally, a trained interviewer is required to collect dietary information via the USDA five-step multiple-pass method (AMPM). This is a validated methodological process that involves following five steps to conduct the interview: gather a quick list of everything consumed, consider forgotten foods, note the time and occasion of each item consumed, collect detailed information like serving sizes, and review the list again. Alternatively, programmed self-administered interviews may use the Automated Self-Administered 24-hour (ASA24) tool to collect information without a trained interviewer (National Cancer Institute 2025g). Although 24-hour dietary recall interviews are recognized as the most accurate and reliable self-reported tool for dietary assessment, they may include more barriers and thus may not be appropriate or reasonable in many settings (Foster et al. 2019).

- **Pros:** Dietary recall interviews consist of a structured interview, provide detailed data about food consumption and activities, do not require literacy, can be used with people with a disability (e.g., individuals with visual impairment), and do not require expertise to score data (programmed self-administered) (National Cancer Institute 2025g).
- **Cons:** Using 24-hour recalls requires a trained interviewer when non-automated, may be expensive as a result of this need for trained staff, is time-

consuming, relies on memory and respondents' knowledge, requires multiple interviews to account for daily variation in diet, may introduce interviewer bias, places the burden on interviewer and interviewee, and requires expertise to process scores and analyze data (educator/research-led) (National Cancer Institute 2025g).

Food Frequency Questionnaires (FFQ)

An FFQ is most often a self-administered tool that asks participants how much and/or how often they consumed a specific food or beverage over a specific period (e.g., the past 30 days), accounting for long-term diet and reducing day-to-day variation. FFQs are not open-ended. Instead, they include a predetermined list of questions with a fixed list of answer choices. FFQs that assess overall diet typically include between 80 and 120 questions but may be shorter if they investigate specific nutrients or food groups as opposed to overall diet (National Cancer Institute 2025c). Although fewer details are captured from FFQs, they are typically more cost-effective than interviewer-led 24-hour recalls and take less time to complete than both 24-hour dietary recall interview methods.

- **Pros:** An FFQ may be more cost-effective, removes the burden from investigators with its self-administrative design, can be modified for specific nutrients, and has low potential for reactivity, indicating it remains stable across different dietary patterns (National Cancer Institute 2025c).
- **Cons:** An FFQ relies on memory, requires literacy and food knowledge, may involve recall bias, places a

burden on participants, may be time-consuming depending on the number of questions, sometimes requires expertise or additional cost, may not account for cultural or other demographic influence on foods, and sometimes requires scoring (National Cancer Institute 2025c).

Screeners

Dietary screeners are essentially shortened FFQs that may either ask participants how often they consume a particular food (without portion sizes) or ask them questions about typical dietary behaviors. Generally, screeners are self-administered tools that provide the least amount of insight into diet quality compared with the other methods (National Cancer Institute 2025f). Often, screeners will only ask about specific food groups or adherence to specific diets, rather than overall dietary intake and quality. By utilizing generic memory, screeners offer a quick, cost-effective approach with minimal participant burden, making them especially useful when investigating fewer components of diet quality (Thompson and Subar 2017).

- **Pros:** Screeners remove burden from the educator, assess usual dietary intake, collect information on the timing of intake and factors that influence food patterns, and are less time-consuming (National Cancer Institute 2025f).
- **Cons:** Screeners rely on memory and estimates of usual intake, and they may not capture enough details (National Cancer Institute 2025f).

Food Records

Otherwise known as a “food diary,” food records are open-ended, self-reported accounts of everything consumed over one or more days, documenting short-term diet. Food records may be obtained through a traditional written approach or via innovative technology that requires participants to submit photographs of everything they consume (National Cancer Institute 2025e). Although food records may obtain detailed information about overall diet quality, they may place a burden on participants and or may influence a participant’s eating habits.

- **Pros:** Using a food record does not rely on memory, limits recall bias, collects detailed information about diet, and promotes behavior change (National Cancer Institute 2025e).
- **Cons:** Food records place a burden on the participant, are time-consuming, may be expensive for various reasons (i.e., training, data management, analysis, participants’ compensation, material used for recording), may prevent groups who lack access to technology from participating in computerized formats, and may require more than one recall to account for daily variation in diet (National Cancer Institute 2025e).

What are some dietary assessment tools that may be useful in Extension settings?

Several dietary assessment tools may be useful in Extension settings where time and funding are limited; however, some tools may require permission and charge fees if used for research purposes. The following outlines a few useful tools:

1. *Nutrition Quest* has free online screeners for individual use that can be completed in just a few minutes and will generate a feedback report for respondents. One screener assesses intakes of fruits and vegetables and provides an estimate of usual fiber intake, while the other assesses fat intake. Visit the Nutrition Quest website for access to both [free screeners](#).
2. *Cooking Matters* has a free screener that can be completed in less than six minutes and can be used to collect baseline information about respondents. The screener includes questions about the frequency of intake of different food groups, various dietary behaviors, and other topics that may or may not be related to the relevant programming. Each answer option in the screener has a number associated with it. For scoring, each response should be recorded with its associated number, and then all responses should be summed. Visit the Cooking Matters website and, under Community Resources, locate Evaluation Resources to download a [PDF of the screener in English](#).
3. *Med Instead of Meds* is a nutrition education curriculum that promotes the Mediterranean-style eating pattern. This curriculum is implemented across Florida as part of Initiative 5 programming. The assessment they use to determine adherence to the Mediterranean diet is the 13-item Med Adherence Tool, which was adapted from the 14-item Mediterranean Diet Assessment Tool used in the PREDIMED Trial (Martínez-González 2012). To learn more about the validated Med Adherence Tool, visit their resource webpage [for professionals](#). If interested in delivering this curriculum in your county, reach out to the Priority Work Group leadership.
4. Harvard developed a brief FFQ, called the *Grid22*, which asks participants questions about overall diet quality and takes about 20 minutes to complete. Administrators may request permission to use an online or paper format for \$1.25 per participant. An additional cost is required for Harvard to process the data, which can be completed by mailing the FFQ responses to their team. To learn more about the tool and request access to use it, visit the Harvard T.H. Chan School of Public Health website for its [Nutrition Questionnaire Service Center](#).

5. The *Rapid Eating and Activity Assessment* is a free screener that collects dietary intake and behavior information in less than nine minutes. Although designed for healthcare providers to use with their patients, this screener may also be useful in Extension settings. To learn more about the screener's development, read "[REAP and WAVE: New Tools to Rapidly Assess/Discuss Nutrition with Patients](#)" in volume 133, issue 2 of the *Journal of Nutrition*.

Conclusion

Assessing dietary intake and quality can be just as complicated as developing programs for improving diet quality. Selecting the appropriate dietary assessment method is necessary for properly understanding Extension program participants. To ensure you use the best dietary assessment method, consider the reason for assessing dietary intake, which elements of diet are of interest, the strengths and limitations of each dietary assessment method, the Extension agents' abilities to use the desired assessment method (i.e., how much time they can dedicate to the project as well as the project's budget), and what the program participants are able to complete. Additionally, consulting with a state specialist or registered dietitian nutritionist may provide further insight into which tool is most appropriate for your specific needs.

References

Food and Agriculture Organization of the United Nations (FAO). 2021. "The world is at a critical juncture." The State of Food Security and Nutrition in the World 2021. Accessed September 6, 2024. <https://www.fao.org/state-of-food-security-nutrition/2021/en/>

Foster, E., C. Lee, F. Imamura, et al. 2019. "Validity and Reliability of an Online Self-Report 24-h Dietary Recall Method (Intake24): A Doubly Labelled Water Study and Repeated-Measures Analysis." *Journal of Nutritional Science* 8: e29. <https://doi.org/10.1017/jns.2019.20>

Gropper, S. S. 2023. "The Role of Nutrition in Chronic Disease." *Nutrients* 15 (3): 664. <https://doi.org/10.3390/nu15030664>

Martínez-González, M. A., A. García-Arellano, E. Toledo, et al. 2012. "A 14-Item Mediterranean Diet Assessment Tool and Obesity Indexes Among High-Risk Subjects: The PREDIMED Trial." *PLoS ONE* 7 (8): e43134. <https://doi.org/10.1371/journal.pone.0043134>

National Cancer Institute. 2025a. "Comparing Dietary Assessment Instruments." Dietary Assessment Primer. NIH Division of Cancer Control & Population Sciences. Last updated December 29, 2025. <https://epi.grants.cancer.gov/dietary-assessment-primer/profiles/table.html>

National Cancer Institute. 2025b. "Dietary Assessment Instrument Profiles." Dietary Assessment Primer. NIH Division of Cancer Control & Population Sciences. Last updated December 29, 2025. <https://epi.grants.cancer.gov/dietary-assessment-primer/profiles/>

National Cancer Institute. 2025c. "Food Frequency Questionnaire at a Glance." Dietary Assessment Primer. NIH Division of Cancer Control & Population Sciences. Last updated December 29, 2025. <https://epi.grants.cancer.gov/dietary-assessment-primer/profiles/questionnaire/>

National Cancer Institute. 2025d. "Food Frequency Questionnaire: Validation." Dietary Assessment Primer. NIH Division of Cancer Control & Population Sciences. Last updated December 29, 2025. <https://epi.grants.cancer.gov/dietary-assessment-primer/profiles/questionnaire/validation.html>

National Cancer Institute. 2025e. "Food Record at a Glance." Dietary Assessment Primer. NIH Division of Cancer Control & Population Sciences. Last updated December 29, 2025. <https://epi.grants.cancer.gov/dietary-assessment-primer/profiles/record/>

National Cancer Institute. 2025f. "Screener at a Glance." Dietary Assessment Primer. NIH Division of Cancer Control & Population Sciences. Last updated December 29, 2025. <https://epi.grants.cancer.gov/dietary-assessment-primer/profiles/screener/>

National Cancer Institute. 2025g. "24-Hour Dietary Recall (24HR) at a Glance." Dietary Assessment Primer. NIH Division of Cancer Control & Population Sciences. Last updated December 29, 2025. <https://epi.grants.cancer.gov/dietary-assessment-primer/profiles/recall/>

Thompson, F. E., and A. F. Subar. 2017. "Chapter 1—Dietary Assessment Methodology." In *Nutrition in the Prevention and Treatment of Disease*, edited by A. M. Coulston, C. J. Boushey, M. G. Ferruzzi, and L. M. Delahanty. 4th ed. Academic Press. <https://doi.org/10.1016/B978-0-12-802928-2.00001-1>

¹ This document is FSHN26-5, one of a series of the Department of Food Science and Human Nutrition, UF/IFAS Extension. Original publication date February 2026. Visit the EDIS website at <https://edis.ifas.ufl.edu> for the currently supported version of this publication. © 2026 UF/IFAS. This publication is licensed under [CC BY-NC-ND 4.0](#).

² Miranda Badolato, postdoctoral associate, UF/IFAS Department of Food Science and Human Nutrition, Gainesville, FL; May Alshahwan, alum (Ph.D. Spring '25), UF/IFAS Department of Food Science and Human Nutrition; Karla P. Shelnutt, associate dean and professor, UF/IFAS Department of Family, Youth and Community Sciences, Gainesville, FL; Anne Mathews, professor, human nutrition, UF/IFAS Department of Food Science and Human Nutrition, Gainesville, FL; UF/IFAS Extension, Gainesville, FL 32611.

The Institute of Food and Agricultural Sciences (IFAS) is an Equal Opportunity Institution authorized to provide research, educational information and other services only to individuals and institutions that function with non-discrimination with respect to race, creed, color, religion, age, disability, sex, sexual orientation, marital status, national origin, political opinions or affiliations. For more information on obtaining other UF/IFAS Extension publications, contact your county's UF/IFAS Extension office. U.S. Department of Agriculture, UF/IFAS Extension Service, University of Florida, IFAS, Florida A & M University Cooperative Extension Program, and Boards of County Commissioners Cooperating. Andra Johnson, dean for UF/IFAS Extension.