



Overview of the ASA24® Respondent Websites and Considerations Related to Data Security and Participant Confidentiality

Extensive evidence has demonstrated that 24-hour dietary recalls provide the highest quality, least biased dietary data. Traditional 24-hour recalls, however, are expensive and impractical for large-scale research because they rely on trained interviewers and multiple administrations to estimate usual intakes. As a result, researchers often make use of food frequency questionnaires, which are less expensive but contain substantial error.

To address this challenge, investigators at the National Cancer Institute (NCI) created the Automated Self-Administered 24-hour Recall (ASA24) system, a freely-available, web-based tool that enables multiple automated self-administered 24-hour recalls. The ASA24 system was developed under contract with Westat®, a social science research firm located in Rockville, MD, and builds on the Food Intake Recording Software System (FIRSSt) developed by Dr. Tom Baranowski of the Baylor College of Medicine. An External Working Group provided advice about the needs and interests of potential users.

The ASA24 system consists of a Respondent Website used to collect recall and food record data and a Researcher Website used to manage study logistics and obtain data analyses. The ASA24-2016 Respondent Website is compatible with mobile devices and is available in English and Spanish. Unlike previous versions, the 2016 version allows for the collection of both recalls and food records. This document provides an overview of the methodology and main features of the ASA24-2016 Respondent Website, as well as information on security of the data collected and protections to the confidentiality of the participants of studies that make use of the ASA24 system. Images of the main Respondent site screens are also included.

ASA24 Respondent Website Methodology

Respondents asked to complete a recall are guided through the 24-hour recall interview using a modified version of the United States Department of Agriculture's (USDA) Automated Multiple-Pass Method (AMPM). The steps in the interview process include:

1. [Meal-based Quick List](#)
2. [Meal Gap Review](#)
3. [Detail Pass](#)
4. [Final Review](#)
5. [Forgotten Foods](#)
6. [Last Chance](#)
7. [Usual Intake Question](#)

Food records are only available in ASA24-2016. A record can consist of one or more days as determined by the Researcher during study setup. Respondents are instructed to complete a food record in real time. The methodology for food records was adapted from the ASA24-2016 methodology for 24-hour recalls described above.

The steps in the food record process are:

1. [Meal-based Quick List](#)
2. [Detail Pass](#)
3. [Meal Gap Review](#)

Finished reporting for the day? If no, go back to step 1. If yes, go to step 4.

4. [Final Review](#)
5. [Forgotten Foods](#)
6. [Last Chance](#)
7. [Usual Intake Question](#)

Meal-based Quick List

During the first pass of a 24-hour recall, Respondents are asked to provide a list of the foods and drinks consumed at each meal occasion during the previous 24-hour recall period from midnight-to-midnight or for the past 24-hours (starting at the time of the first login).

For food records, Respondents first provide a list of foods and drinks for the meal they are reporting. After reporting all foods and drinks for that meal, they immediately proceed to the Detail Pass.

Respondents are required to search to find foods, drinks, or supplements; search results can then be filtered if desired. Foods, drinks, and supplements reported at each meal are recorded in the My Foods and Drinks panel within the instrument. In addition to selecting an eating occasion (e.g., breakfast, lunch, snack), Respondents are also prompted to specify the time of the occasion before reporting the foods and drinks consumed. The Researcher can opt to collect additional contextual information including where meals were eaten, television and computer use during meals, and whether the meal was eaten alone or with others by turning on the corresponding module during study setup.

Meal Gap Review

For 24-hour recalls, once Respondents finish creating their My Foods and Drinks list at the end of the Quick List step, they are asked if they consumed anything during any 3-hour gaps between eating occasions. For a food record, the Meal Gap Review follows the Detail Pass. For the midnight-to-midnight version of a 24-hour recall and for food records, Respondents are also asked if they consumed anything between midnight and the first eating occasion, and between the last eating occasion and midnight regardless of the length of time gaps. During a Gap Review, Respondents have the opportunity to return to the Quick List pass to add a meal(s) and the foods, drinks, and supplements consumed at them.

Detail Pass

Respondents are asked for details about the foods and drinks they recorded during the Quick List, including form (e.g., raw), preparation methods (e.g., grilled or roasted), the amount eaten, and any additions (e.g., sugar, coffee cream, salad dressing). An option is available to probe Respondents about the source (e.g. grocery store, farmer's market, etc.) of where reported foods and drinks were obtained.

Final Review

Respondents are prompted to review all of the foods and drinks reported for the intake day, and make edits and add meals, foods, drinks, and supplements as necessary.

Forgotten Foods

Following the Final Review, Respondents are asked questions probing about the consumption of commonly forgotten foods and drinks (e.g., snack foods, fruits, vegetables, cheese, water, coffee, tea) and supplements. Respondents must select either "Yes" or "No" for each food or drink probed. For any "Yes" response, the Respondent will be returned to the Quick List to add the forgotten item(s).

Last Chance

After Forgotten Foods, Respondents are asked if they have reported all that they consumed. If Respondents want to add more foods, drinks, or supplements, they will be returned to the Quick List to add more items; otherwise, they will move forward to the Usual Intake Question.

Usual Intake Question

The final question asks: Was the amount of food that you ate yesterday more than usual, usual, or less than usual? This question probes whether this was a typical day's intake.

Supplement Module

Supplements include vitamins, minerals, and other supplements including prescription supplements. The supplements included are based on those reported in the National Health and Nutrition Examination Survey (NHANES). This module can be turned on or off by the Researcher during study setup. Respondents are able to report supplements similar to how they report foods and drinks throughout the day as part of a meal regardless of whether the module is turned on or off. However, if the module is turned on, Respondents are cued in several places to include supplement intakes in their report.

ASA24 Respondent Website Features

The ASA24 Respondent Website guides Respondents through the completion of either a food record or a 24-hour recall (for the previous day, either from midnight-to-midnight or for the past 24-hours), using a dynamic user interface. The instrument:

- Asks Respondents to report eating occasion and time of consumption;
- Includes optional modules to query where meals were eaten, whether meals were eaten alone or with others, and television and computer use during meals;
- Flows as per modified USDA [Automated Multiple-Pass Method \(AMPM\)](#) for 24-hour recalls, a method that was adapted for collection of food records;
- Requires Respondents to search to find foods, drinks, and supplements; searches can be narrowed using food group filters. The list of food, drink, and supplement terms is derived from the National Health and Nutrition Examination Survey (NHANES) and the NHANES Dietary Supplement Database;
- Asks detailed questions about food form, preparation, portion size, and additions so that, for US versions, food codes from USDA's [Food and Nutrient Database for Dietary Studies \(FNDDS\)](#) can be assigned; there is also an option to query Respondents about food source;
- Uses images to assist Respondents in reporting portion size;
- Allows the Respondent to add or modify food, drink, and supplement choices at multiple points during the interview;
- Includes an optional module to query dietary supplement intake based on supplements reported in NHANES;
- Is available in English and Spanish; and
- Is accessible by individuals using assistive technologies, such as screen readers.

The Respondent Website does not provide any direct feedback to Respondents such as nutrient analyses. Instead, Researchers can obtain analysis files from the Researcher Website and contact Respondents with any findings they choose to share.

Data Security and Protections to Confidentiality of Participants Using the ASA24 System

Researchers using the ASA24 system do not provide the NCI, Westat, or the ASA24 system with any identifying data for participants of their studies. Rather, researchers specify a unique numeric identifier for each Respondent and download system-generated usernames and encrypted passwords that they provide to Respondents so that they may access the application.

The ASA24 system also does not collect any identifying data directly from Respondents. However, IP address information is accessed for the purpose of routing information between the server and the respondent's computer—often the IP address is that of the user's Internet Service Provider (ISP). IP addresses are not stored or tracked by the ASA24 system. However, logs of connections are kept in the hosting environment for audit trail purposes. This

information is not mined in any way but would be available if there were a legal obligation to release it.

Response data are secured at the hosting site using industry standard security controls, including firewalls and encryption. All data entered into the ASA24 system at the Respondent's computer is encrypted by the internet browser (e.g., Internet Explorer, Firefox) before they are transmitted to our servers using Secure Socket Layer (SSL) Technology. SSL allows for the authentication of the sending and receiving computers.

Only a particular study's investigator(s) and the ASA24 operations team can access response data. Access is gained through usernames and strong passwords.

ASA24 Respondent Website Screen Shots

Screen layouts will vary depending upon the screen size of the device.

Figure 1: The Respondent can choose to complete the ASA24 records or recalls in English or Spanish.

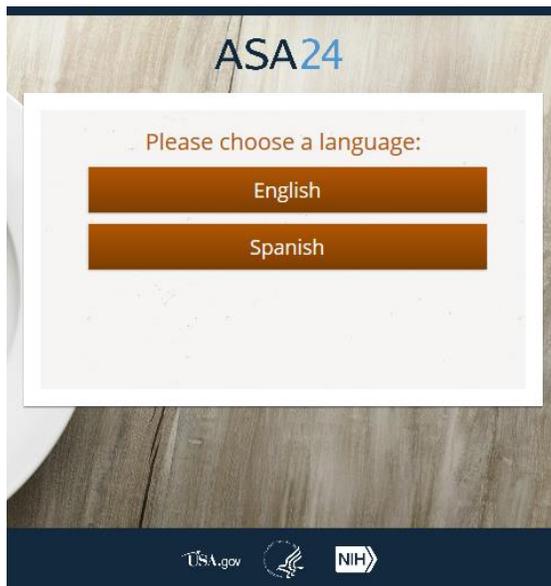


Figure 2: An introductory screen prompts the participant to report everything that she or he had to eat or drink for the desired period.

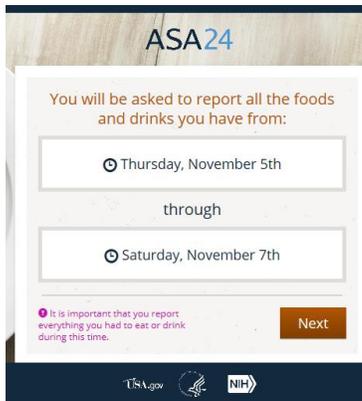


Figure 3: The meal details screen collects information on the eating occasion and time, and displays optional modules that can be selected by the researcher to query where meals were eaten, whether meals were eaten alone or with others, and television and computer use during meals. This is the first step in the meal-based Quick List.

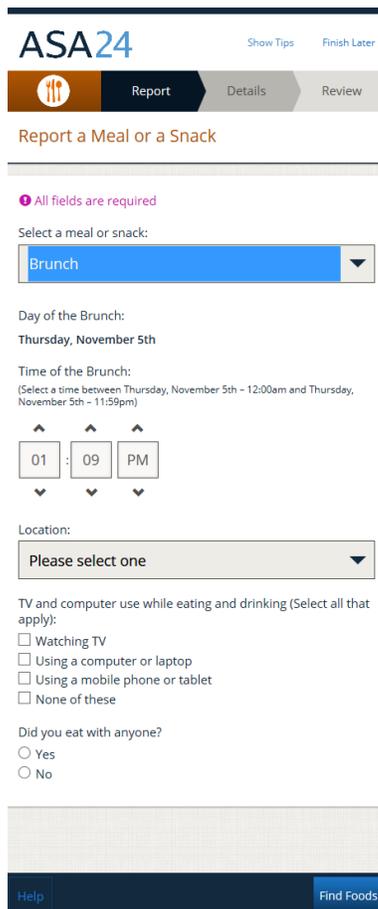


Figure 4: The Find Foods & Drinks screen is used to select foods, drinks, and supplements to be added to a meal during the Quick List Pass during the reporting period assigned by the Researcher.

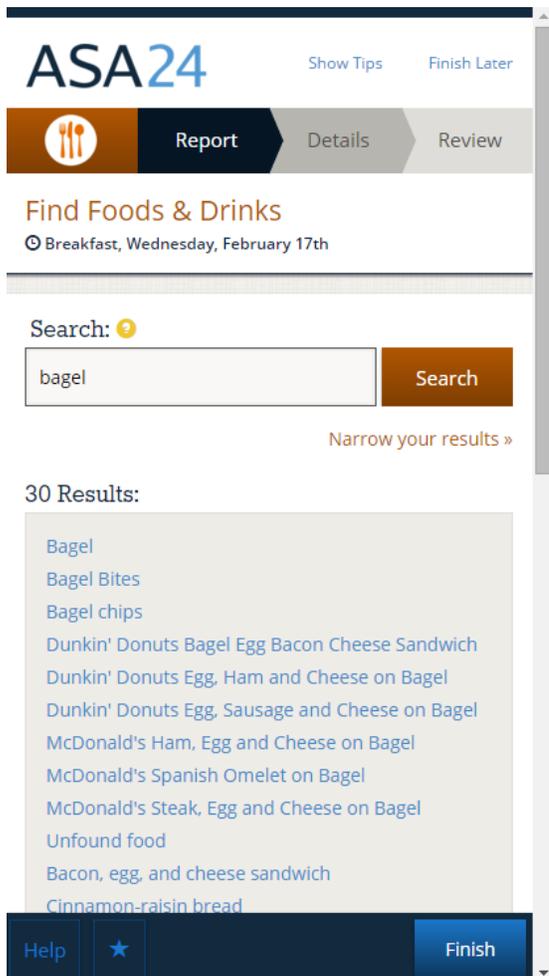


Figure 5: Respondents complete the Quick List pass by adding meals and selecting foods, drinks, and supplements. The food, drink, and supplement terms are based on the National Health and Nutrition Examination Survey (NHANES).

ASA24
Show Tips A A Finish Later



Report Meals and Snacks



Find Food and Drinks



Add Details



Review

My Foods & Drinks

starting Wednesday, November 4th - 12:00am

BREAKFAST + Add Foods ✎ 🗑

Wednesday 8:05am

| | |
|--------------|---|
| Bagel |  |
| Orange juice |  |
| Coffee |  |

JUST A DRINK + Add Foods ✎ 🗑

Wednesday 10:15am

| | |
|------------------|---|
| Tea, hot or iced |  |
|------------------|---|

LUNCH + Add Foods ✎ 🗑

Wednesday 12:30pm

| | |
|-----------------|---|
| Turkey sandwich |  |
| Water |  |
| Apple |  |

ending Wednesday, November 4th - 11:59pm

Help

+ Report a Meal
↻ Next

Figure 6: In a recall, after the Respondent reports the foods, drinks and supplements consumed and selects the Next button in Figure 5, gaps between meals are identified (Meal Gap Review pass) After reviewing the gaps, the Respondent selects the 'Add Details' button.

My Foods & Drinks

starting Wednesday, November 4th - 12:00am

GAP [+ Report a Meal](#)

Wednesday 12:00 am to Wednesday 8:05am [Dismiss This Gap x](#)

BREAKFAST [+ Add Foods](#) [✎](#) [🗑️](#)

Wednesday 8:05am

| | |
|--------------|-----------------------|
| Bagel | Tools |
| Orange juice | Tools |
| Coffee | Tools |

JUST A DRINK [+ Add Foods](#) [✎](#) [🗑️](#)

Wednesday 10:15am

| | |
|------------------|-----------------------|
| Tea, hot or iced | Tools |
|------------------|-----------------------|

LUNCH [+ Add Foods](#) [✎](#) [🗑️](#)

Wednesday 12:30pm

| | |
|-----------------|-----------------------|
| Turkey sandwich | Tools |
| Water | Tools |
| Apple | Tools |

GAP [+ Report a Meal](#)

Wednesday 12:30 pm to Wednesday 11:59pm [Dismiss This Gap x](#)

ending Wednesday, November 4th - 11:59pm

[Help](#)

[+ Report a Meal](#)
[+ Add Details](#)

Figures 7a-c: The detail pass prompts the Respondent to report the details of each food, drink, and supplement including the specific type or how it was prepared, anything added to it, and the amount that was consumed.

Figure 7a.

Add details to your Bagel

🕒 Lunch Wednesday, November 4th - 8:05am

Bagel: Did it have any fruit or vegetable?

Select an option

- Plain
- Apple
- Blueberry
- Cranberry
- Garlic
- Onion
- Raisins
- Other
- Don't know

[Help](#) [← Back](#) [Next →](#)

Figure 7b.

Add details to your Bagel
Lunch Wednesday, November 4th - 8:05am

Bagel: How much did you actually eat? 🟡



| | | | | | | |
|------------|---------------------|-----------|------------------|-----------|---------|-------------------|
| Don't know | Less than 1/4 bagel | 1/4 bagel | 1/2 bagel | 3/4 bagel | 1 bagel | More than 1 bagel |
|------------|---------------------|-----------|------------------|-----------|---------|-------------------|

AMOUNT: 1/2 bagel

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Figure 7c.

Add details to your Bagel
Lunch Wednesday, November 4th - 8:05am

Bagel: Did you add anything to your Bagel that you haven't already reported?

Yes
 Nothing Added
 Don't know

Search for additions:

Type a food or drink Additions to your Bagel

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Figure 8: Once the Detail Pass is complete, the Final Review begins. The Respondent can make changes to the details for a given food or drink and add more foods and drinks if necessary.

Review

starting Wednesday, November 4th - 12:00am

[Show food details »](#)

LUNCH
Wednesday 8:05am

[Bagel » \(show details\)](#)

[Orange juice » \(show details\)](#)

[Coffee » \(show details\)](#)

JUST A DRINK
Wednesday 10:15am

[Tea, hot or iced » \(show details\)](#)

LUNCH
Wednesday 12:30pm

[Turkey sandwich » \(show details\)](#)

[Water » \(show details\)](#)

[Apple » \(show details\)](#)

ending Wednesday, November 4th - 11:59pm

[Help](#) [Make Changes](#) [Next](#)

Figure 9: The forgotten foods pass queries the Respondent about frequently forgotten foods. Responding yes to one or more categories will result in a prompt to add the forgotten foods or drinks.

Frequently Forgotten Foods

Certain foods and drinks are frequently forgotten. In addition to the foods and drinks you already reported, did you have any:

All fields are required

Water, including tap, faucet, bottled, water fountain?
 Yes No

Coffee, tea, soft drinks, milk or juice?
 Yes No

Beer, wine, cocktails or other drinks?
 Yes No

Cookies, candy, ice cream or other sweets?
 Yes No

Chips, crackers, popcorn, pretzels, nuts or other snack foods?
 Yes No

Fruits, vegetables or cheeses?
 Yes No

Breads, rolls or tortillas?
 Yes No

Supplements
 Yes No

Anything else?
 Yes No

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Figure 10: The Last Chance Pass provides Respondents one more opportunity to edit their intake.

drinks are frequently forgotten. In addition to the foods

Last chance

Did you have anything else to eat or drink between Wednesday, November 4th - 12:00am to Wednesday, November 4th - 11:59pm?

Figure 11: The final question in the food and drink module asks the Respondent whether the amount of foods and drinks consumed yesterday was usual.

Amount of Reported Food

How usual was the amount you reported?

The amount of food and drinks I had from Wednesday, November 4th - 12:00am to Wednesday, November 4th - 11:59pm was:

Much more than usual
 Usual
 Much less than usual

[Help](#)
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Figure 12: The Supplement Module collects details about each supplement reported.

Add Details

Calcium 1200 mg (Unknown or Other Brand):

How much did you actually take?

Less than 1 tablet
 1 Tablet(s)
 Don't know

[Next](#)

Add to:
Supplements

My Supplements

Supplements I took yesterday, Sunday, January 05.

[Add a supplement](#)

- Supplements
 Calcium 1200 mg (Unknown or Other Brand)

[Finish later](#) ?

Legend

- Add as favorite
- Edit
- Remove
- Copy
- Move

Figure 13: Once the Respondent completes the food and drink module and the supplement module, if selected by the Researcher during study set up, his or her responses are saved in the secure database and he or she can exit the ASA24 system. Only the Researcher(s) who are registered to that study and the ASA24 operations team can access the response data.

