



Food and Nutrition Service
U.S. DEPARTMENT OF AGRICULTURE

Nutrient Analysis Protocols

How To Analyze
Menus for
USDA's School
Meals Programs



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Purpose of Nutrient Analysis and Introduction to Dietary Specifications

Chapter Objectives

After reading this chapter, you will be able to:

- ✓ Discuss dietary specification requirements for school meals.
- ✓ Understand the purpose of nutrient analysis.

Nutrition Standards for Healthy Children

The Final Rule for USDA's *Nutrition Standards in the National School Lunch and School Breakfast Programs* (published January 26, 2012) intends to ensure the provision of nutrient-dense meals (high in nutrients and low in calories) that meet the health needs of school children and reflect the most current dietary science. Under the rule, all schools must follow a food-based menu planning approach for the National School Lunch Program (NSLP) and for the School Breakfast Program (SBP) and produce enough food to offer each child the quantities specified in the meal pattern requirements. The regulation also established dietary specifications which are the required level of calories, saturated fat, *trans* fat, and sodium for a specific age/grade group.

School Food Authorities (SFAs) are expected to follow the meal pattern requirements in order to meet nutrient targets. SFAs are not required to conduct nutrient analyses, however, they may choose to do so to ensure compliance with the required dietary specifications, specifically calories, saturated fat, and sodium. SFAs may also use nutrient analysis to evaluate foods that are made and sold to be compliant with the Smart Snacks in School nutrient standards.



Meeting a Child's Overall Nutrient Needs

USDA recognizes that the dietary specifications do not include all the nutrients for which Dietary Reference Intakes (DRIs) have been established. The required meal pattern (components and quantities) ensures that children are offered foods that contain certain amounts of vitamins and minerals required for optimal growth and development. Therefore, following the meal pattern requirements and nutrition standards (specific foods, food quantities, and dietary specifications) and monitoring the age/grade groups, should ensure that children's overall nutrient needs are met.

Required Age/Grade Groups for Meal Pattern: Breakfast and Lunch*

- Grades K-5
- Grades 6-8
- Grades 9-12

Regulations require that breakfast and/or lunch menus offered, averaged over a week, meet the dietary specifications for the age/grade group for which they are intended. The dietary specifications for breakfast and lunch must be evaluated separately.

*See **Appendix A** for meal pattern requirements. See current guidance for age/grade group flexibilities.

Dietary Specifications

Weekly average requirements:

- Calories (range)
- Saturated Fat (maximum)
- Sodium (maximum)

Daily requirement restriction:

- *Trans* Fat (maximum)

For total calories, minimums and maximums are established by age/grade group and must be met on average over the course of the school week. By keeping calories within the acceptable ranges, menu planners ensure adequate, consistent calorie levels to meet children's energy and developmental needs, while also reducing the risk of overconsumption.

In order to reduce sodium and the percentage of calories from saturated fat, the dietary specifications for these are maximums.

Food products and ingredients used daily must contain zero grams of *trans* fat per serving (naturally occurring *trans* fats are not prohibited). It is important to note *trans* fat will not be evaluated in the nutrient analysis, therefore you must review nutrition labeling or manufacturer specifications for products or ingredients used to prepare school meals to verify they contain zero grams (less than 0.5 grams) of *trans* fat per serving. If your software includes *trans* fat data, it is included for informational purposes only.



Helpful Tip

Menu planners should select:

- nutrient dense foods and ingredients; and
- products lower in saturated fats, added sugars, and added sodium.

Purpose of Nutrient Analysis

The purpose of nutrient analysis is to determine compliance with regulatory requirements for calories, saturated fat, and sodium, and to monitor levels of these dietary components in school meals. Performing an accurate nutrient analysis is critical to the evaluation of menus and menu documentation.

Remember, nutrient analysis of menus by the SFA is not required. However, many school districts choose to use this tool as a program management option. If you decide to perform nutrient analyses on menus, an accurate process is critical. You must follow these protocols to achieve an accurate nutrient analysis. Please note that only nutrient analyses software approved by USDA are considered an allowable cost to the non-profit school food service account.

This manual is designed to provide the knowledge and skills needed to perform an accurate nutrient analysis.

Learning Outcomes

The information contained in this manual will enable readers to:

- 1 Explain the purpose of a nutrient analysis.
- 2 Select USDA-approved nutrient analysis software that will meet their needs.
- 3 Assemble the information necessary to calculate a nutrient analysis.
- 4 Correctly enter data for food items (ingredients), recipes, menus, and school/site data following nutrient analysis protocols for school nutrition programs.
- 5 Discuss common data entry errors and how to prevent/identify mistakes.
- 6 Perform nutrient analyses and evaluate data.
- 7 Create reports.



Helpful Tip

For any questions that may arise about food items, recipe analysis, or menu analysis that have not been addressed in this manual, program operators should contact their State agency. State agency staff should contact their FNS Regional Office with questions.

Selecting Software for Nutrient Analysis

Chapter Objectives

After reading this chapter, you will be able to:

- ✓ Explain the various functions that USDA-approved software programs allow.
- ✓ Explain why the Child Nutrition Database is in approved software programs.
- ✓ Select an approved software for nutrient analysis.

USDA-Approved Nutrient Analysis Software

USDA approves software for nutrient analyses required in the school meal programs to ensure valid and consistent nutrient analyses. All software are approved to calculate weighted nutrient analysis for school meals.

State agencies must use USDA-approved software when conducting a nutrient analysis as part of the Administrative Review process. As noted previously, only nutrient analysis software approved by USDA is considered an allowable cost to the non-profit school food service account.

USDA-approved software allows you to:

- Enter the nutrient data of a new food item from a Nutrition Facts label or from a manufacturer's specification (spec) sheet.
- Enter, modify, and analyze recipes.
- Plan, copy, and modify menus for a 5-day school week. (Some software allows for short- and long-week analyses.)
- Compare nutrient analysis of the weekly breakfast or lunch menu to the current dietary specifications and indicate where standards are not being met.
- Create nutrient analysis reports for food items (ingredients), recipes, and menus.



Did You Know

Weighted Nutrient Analysis

National School Lunch Program (NSLP) and School Breakfast Program (SBP) regulations require weighted averages for conducting nutrient analyses.

- A weighted nutrient analysis gives more weight to nutrients in foods that are more frequently selected by students.
- Weighted analysis allows for a greater contribution of nutrients to come from menu items that are selected more often and less nutrient contribution from those menu items selected less often.



Before beginning the process of calculating a nutrient analysis, you should understand how the software's database has been developed. There are two types of data in the software's database of food items:

1

Developer-added Data (optional)

Some software manufacturers include nutrient data in their software's database, such as data for commercially prepared products that are not included in the Child Nutrition Database.

2

Child Nutrition (CN) Database

The CN Database is a nutrient database of over 10,000 food items produced by USDA's Food and Nutrition Service (FNS). All USDA-approved nutrient analysis software must contain the most current version of the CN Database. All data from the CN Database is *locked* which means the CN Database data cannot be modified or deleted by the user.

The CN Database contains the nutrient profiles of food items commonly used in school meals and includes nutrients that are monitored by the Child Nutrition Programs.

The CN Database includes nutrient data for:

- Generic foods, such as foods in the *Food Buying Guide for Child Nutrition Programs (FBG)*;
- USDA Foods;
- USDA Standardized Recipes; and
- Many brand name commercially prepared foods provided by food industry.

A more detailed description of the software program requirements and functions is provided in **Appendix B**. A list of USDA-approved nutrient analysis software is available on the FNS website.



Key Point

The data from the CN Database is locked. This means the information can be accessed and copied, but not changed.

Choosing an Approved Nutrient Analysis Software

Differences Between Software

While the USDA-approved software must include the functions outlined in **Appendix B**, there are still many differences between USDA-approved software. The approved software may:

- Perform only nutrient analysis;
- Include menu planning for meal patterns; and
- Incorporate other school foodservice software modules, such as Free and Reduced Price, Food Production, and Inventory modules.

You will need to do some research to find the software that best meets your needs.



Questions To Consider When Selecting Software

- Do you need software that does only nutrient analysis, or do you want a software that also assesses meal pattern contributions?
- Would you like to purchase related applications that perform many functions such as procurement, inventory, point of sale, etc.?
- Do you want a web-based software? Windows-based system? A networked system?
- What are the hardware requirements? Will current hardware support the software requirements? Check with your technology support team for guidance.
- Are you able to participate in a demonstration of the software at a conference or through teleconferencing software?
- Can you visit a site that is using the software in which you are interested?
- How easy is it to enter data into the software? Consider who will be using the software and staff computer literacy.
- How efficient is the overall nutrient analysis process? How well does the “search” feature help you locate food items (ingredients) and recipes in the database?
- Are the reports easy to understand? Is it easy to interpret the results of the nutrient analysis and modify the recipes and menus to adjust results?
- How often is the software updated? Will the updates be provided as part of your initial cost or be separately priced? What are the update costs?
- What will the software package initially cost for one school/for the district? Consider how many copies or licenses for the software are needed.
- What support and training are available? Online, telephone, on site?
- Does it have additional cost to maintain the system or optional features?

Think about your specific needs and add to this list of questions to ask about the software.

NOTE: For approved nutrient analysis software, USDA only reviews and monitors the functions that relate directly to nutrient analyses, including updates to the CN Database. USDA also approves software for certification of compliance for additional performance-based reimbursement, specifically assessment of the meal pattern contributions. USDA does not review or approve other functionality in these software programs.

Overview of Calculating a Nutrient Analysis

Chapter Objectives

After reading this chapter, you will be able to:

- ✓ Describe key nutrient analysis concepts.
- ✓ Describe steps needed to calculate a nutrient analysis.

The exact steps needed to conduct a nutrient analysis will vary between software programs, but the process used is similar. Menu planners and State agency staff must understand key nutrient analysis concepts and carefully follow the protocols for each step to conduct an accurate nutrient analysis, regardless of the software program.

Detailed descriptions of each step will be provided in the following chapters. This chapter will cover several principles and concepts that you must understand prior to conducting a nutrient analysis.

Key Nutrient Analysis Concepts

All Foods Are Included in the Nutrient Analysis

All food or menu items offered in a reimbursable meal, *including condiments/accompaniments*, are included in the nutrient analysis and count toward meeting the dietary specifications for the meal.

Schools may offer extra foods (e.g., ice cream, pudding) that do not credit toward any food component required in a reimbursable meal. Extra foods offered must be included in the nutrient analysis and count toward the dietary specifications for calories, saturated fat, sodium, and *trans* fat.

Only reimbursable meals are included in nutrient analyses. Therefore, adult meals and a la carte sales must not be included in nutrient analyses.



Q & A

Are foods offered to accommodate students with disabilities or non-disability situations included in the nutrient analysis?

1. When food or menu item modifications are made for students with disabilities or for non-disability situations, the modifications are not included in the nutrient analysis.
2. If food or menu modifications are the same menu items served to the entire age/grade group, only modified for texture, the food or menu items are included in the nutrient analysis.

Nutrients Calculated for “As Prepared” Product

A nutrient analysis is conducted to calculate the nutrients in the finished food products as they will be consumed by students. It is important to note that recipes for nutrient analysis, including the ingredients used in the recipes, may be very different from the standardized recipe that the cook uses in food production. This is because many of the ingredients in a standardized or cook’s recipe may be in the “as purchased” form, such as raw ground beef, raw chopped onions, and raw green pepper for a meatloaf, which will then be prepared or cooked from scratch in the school kitchen.

The nutrient content of foods may vary greatly depending on the method of preparation. Ingredients in recipes prepared “from scratch” must be entered into the software in their “as prepared” form to account for the changes in nutrient values due to preparation and cooking. Analysis of the “as prepared” items is sometimes called the Yield Factor Method.

The analysis of “as prepared” items will be explained in more detail during the discussion of the procedures for entering recipes in Chapter 6.



Did You Know

Yield Factor Method

A method for nutrient analysis of recipes that requires that some raw recipe ingredients (discussed in Chapter 6), be converted and entered in the recipe database as ready-to-serve or cooked. Use the yield data from USDA’s *Food Buying Guide for Child Nutrition Programs (FBG)* to convert from the raw to the cooked amount.

Definition of School Week

For the purpose of nutrient analysis, a school week represents a normal school week of five consecutive days. To accommodate weeks that are either shorter or longer than the five consecutive days, the analyzed week should contain a minimum of three consecutive days and a maximum of seven consecutive days. When school lunches are offered less than three times in a week, combine these menus with either the previous week’s menus or the subsequent week’s menus.

For example, during the week of Thanksgiving, an SFA/school serves lunch only 2 days that week. Those 2 days could be combined with either the week before or the week after Thanksgiving. The same situation might arise around other holiday periods or during the first and last weeks of school.

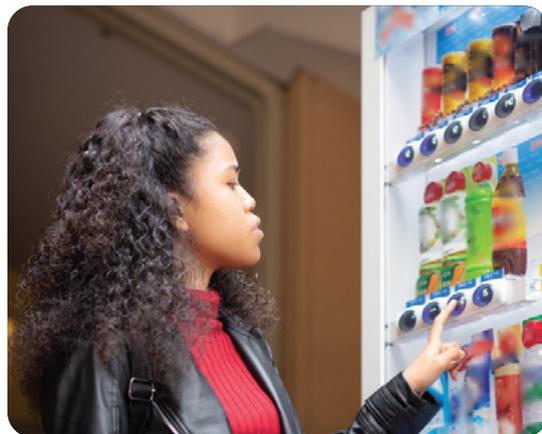
By combining a menu week that only has 1 or 2 days in it with another week, the school avoids problems in meeting the dietary specifications that can result from analyzing a small sample of meals.



Q & A

Are Smart Snacks in School included?

Foods that are sold a la carte are subject to the Smart Snacks in School standards. Software may be used to evaluate these a la carte items. However, they are not to be included in the nutrient analysis for a reimbursable meal.



Overview of Steps for Conducting a Nutrient Analysis

The order of this process may differ between software programs, but the data needed to complete the nutrient analysis is the same for all programs.

Step 1

Preparing for Nutrient Analysis – Gathering the Information

This process will be discussed in-depth in Chapter 4. Information includes:

- Breakfast and lunch menus including menu choices and portion sizes for each age/grade group and menu type.
- Standardized recipes used in the menus.
- Description or specifications for all food products and ingredients used in the menus.
- Nutrient information for recipe ingredients that are not included in the software database.
- Food production records to obtain offered numbers of servings of each menu item, as well as the number of students offered the menu.

Step 2

Finding or Entering Food Items (Ingredients) Into the Software's Database

All USDA-approved nutrient analysis software also allows the user to:

- Search for food items in the software's database.
- Enter and edit the nutrient data for food items.
- Enter, modify, and analyze recipes.

This process will be discussed further in Chapter 5 and includes:

- Reviewing the recipes to be used on a school's menu and identifying ingredients missing in the software's database.
- Entering the nutrient information for the missing ingredients, including volume and weight measurements.

How Food Manufacturers Provide Nutrient Information

Manufacturers provide nutrient analysis information in one of two ways — “as purchased” or “as served.”

- “As purchased” nutrient analysis data represents the nutritional content of the product *exactly as it is purchased*; that is, the nutrients contained in a certain amount of an unprepared cornbread mix or an unbaked prepared whole grain pizza. Note: the Nutrition Facts labels on products are required to provide “as purchased” data. A sample copy of a Nutrition Facts label is included in **Appendix C**.
- “As served” nutrient analysis data provides the nutrient values for a product *after it has been further prepared*. The cornbread mix will provide “as purchased” data on the unprepared mix and may also provide “as served” data on the mix when prepared according to package instructions.



Helpful Tip

When entering new ingredients into your software, always indicate whether the nutrient data is “as purchased” or “as served,” and indicate the cooking method.

Step 2 (continued)

Finding or Entering Food Items (Ingredients) Into the Software's Database

Food Products Used “As Purchased”

For ready-to-serve products, i.e., foods that only require chilling, heating, and/or portioning and are used “as purchased,” use the nutrient data exactly as provided on the Nutrition Facts label, or product specification sheet, and enter it into the software’s database.



Food Products Prepared According to Manufacturer’s “As Served” Nutrient Information

When a manufacturer provides “as served” nutrient analysis information, specifies the cooking method, and you prepare the food *exactly* according to directions, use the nutrient data exactly as provided on the Nutrition Facts label or product specification sheet. Enter the nutrient data from the food label or manufacturer’s spec sheet into the software’s ingredient database.

Food Products Requiring Further Preparation

For purchased products that do require further preparation, and the manufacturer *has not* provided “as served” nutrient information, or the SFA uses a different preparation method, you must develop a recipe for this prepared product. This will be further described in Chapter 6.



Q & A

What does “as consumed” mean?

Providing nutrient analyses for the “as consumed” (or “as prepared”) product is a method for nutrient analysis of recipes that bases the nutrient analysis on the product as eaten or as consumed. This method requires that key raw ingredients be converted to ready-to-serve (or cooked), then entered into the recipe for nutrient analysis.

To determine the prepared yield of an ingredient, use yield data from USDA’s *Food Buying Guide for Child Nutrition Programs (FBG)* and convert from the raw to the cooked form.

Step 3

Adding Recipes to Your Software

Select the correct ingredients from the database for each recipe on the menu. You must have knowledge of the foods that are purchased and how they will be prepared and served in order to select the correct item for the recipe ingredient. Your software may contain multiple entries for the same food item, based on the varieties, types, and forms of the food item, as well as different preparation methods. These factors may result in a different nutrient content for the recipe. This will be discussed further in Chapter 6.

Recipes must be analyzed for nutrient content by using the “as prepared” ingredients, which is based on the form in which the food is eaten or consumed. If a recipe includes raw ingredients that will be cooked or further prepared before consuming, you will need to convert these ingredients to the “as consumed” form of the ingredient. In this manual the Yield Factor Method (YFM) will be referred to as “as consumed” or “as prepared” analysis. The procedure for analyzing recipes this way will be discussed further in Chapter 6.

Step 4

Entering Your Menus Into Your Software

Each software will have a unique process for how to enter information for menus. It is important that the information below is present, but not the order in which it is entered.

- Identify menu name(s) and associated age/grade group for each menu.
- Identify menu meal type, such as breakfast or lunch.
- Enter the ingredients, food products, and recipes for each menu.
- Assign dates to menus and determine a date range for each nutrient analysis, as defined by the school week.
- Determine the number of servings of reimbursable meals and the serving sizes of food or menu items.
- Obtain the total feeding figure (or count) for the meals offered.
- Create the nutrient analysis reports.

Step 5

Evaluating and Modifying Menus and Recipes to Comply with Dietary Specifications Requirements

- Review the weekly nutrient analyses, noting any dietary specifications that have not been met.
- If necessary, modify the menus to meet the dietary specifications.
- Reanalyze menus when menus/food items change, products change, recipes change, or when participation or student selections change.

Preparing for a Nutrient Analysis

Chapter Objectives

After reading this chapter, you will be able to:

- ✓ Collect the necessary materials and information for calculating a nutrient analysis.
- ✓ Collect nutrient data or information for food items that are not included in your software program.

The following materials and information will help you prepare to calculate a nutrient analysis.

Item 1

Menus

Collect the menu documentation for each USDA established age/grade group and menu type offered at breakfast and lunch. A separate nutrient analysis is required for each age/grade group at the selected site to ensure each menu meets the dietary specifications for the appropriate age/grade group.

Example:

A school serving 6-12 graders plans two different lunch menus, one menu for grades 6-8 and another menu for grades 9-12. In this case, the school is offering two different lunch menus for different segments of students in the school. You will need to calculate two weighted nutrient analyses for lunch: one for the 6-8th grade students and one for 9-12th grade students to ensure each menu type meets the dietary specifications.

You will need the complete set of offered menus for the week. Written menus should include all menu items or food choices offered as part of the reimbursable meal with portion sizes offered to each USDA established age/grade group and menu type for breakfast and lunch.



Q & A

Planned, Offered & Selected/Served: What's the Difference?

Planned: A planned menu is what the menu planner intends to offer to students.

Offered: An offered menu is what is actually prepared and set out on the line(s) for students. Offered menus may differ from “planned” menus because, for example, a planned food item was not received and the menu planner had to offer a different food item.

Selected/Served: A selected, or served, menu refers to which food items were taken by students.

Item 2

Standardized Recipes

Collect the standardized recipes for all menu items on the set of menus you will analyze. Standardized recipes should be used for all recipes on the menu.

Standardized recipes are those that have been tried, tested, and found to be acceptable to students; have the same ingredients and method of preparation; and provide a consistent yield.

Standardized recipes should have a nutrient analysis based on the “as prepared” product, which uses ingredients that reflect the preparation of the ingredient (changes to nutrient content and yield as a result of preparation).

Item 3

Nutrient Data or Information for Food Items Not in the Database

Identify food products not in your software’s database.

- Review menus and the standardized recipes to be used for the preparation of the menus.
- Search the software’s database to determine if all food items or ingredients are included.

For *generic* foods or foods in the *Food Buying Guide for Child Nutrition Programs*, the nutrient data for most products will already be in the software’s database. Examples of generic foods are fruits, vegetables, and milk.

More complex foods or brand name foods may be in your software’s database. However, if the food item is not in your software’s database, you will need to locate the nutrient data for the food item.

Sources of nutrient data are:

- Nutrition Facts labels, often found on product packaging, even though they are not required. A sample Nutrition Facts label is shown in **Appendix C**.
- Nutrient data provided by the manufacturer on a product specification sheet or information sheet.
- Nutrient analysis data from another reliable source, such as USDA’s FoodData Central.

Item 4

Food Production Records

All SFAs/schools are required to document the foods planned, offered, and served to students as part of a reimbursable meal. These production records demonstrate how the meals provide the required meal components and dietary specifications. The offered (prepared) menu counts and number of servings will be used for the weighted nutrient analysis of your menus. The day-of-service information is valuable for future menu planning as well as future production days with the same menu.

A Menu Planner for Healthy School Meals provides more information on documenting food production records and sample food production record forms. Additionally, many State agencies have developed State prototypes or sample food production records for use by school districts/schools within the State. Many developers of approved software have included food production records as a functionality in their software.

Entering Food Items Into Your Software's Database

Chapter Objectives

After reading this chapter, you will be able to:

- ✓ Enter food items into your software's database.
- ✓ Delete and modify food items in your software's database.

For the nutrient analysis to be correct, the food items on the menu and ingredients in the recipes must be entered correctly.

In Chapter 4, you searched your software's database for ingredients in your recipes and menu items. Now you should have a list of items/ingredients that need to be entered into your software's database.

Your software will provide specific instructions for entering food items. Regardless of which software is used, the following information needs to be included when entering new items. This assumes that the item you are entering is not already in your software's database.

Step 1

Enter descriptive data

Unique identification number

- Each item that is added will need its own unique number. Your software may automatically assign it a number or give you the option to number it.

Description of the food item

- Add a description of the food item that will help you locate it when you need to use it in a recipe or menu. Include information about the cooking method or preparation, such as fully-cooked, frozen, raw, peeled, or diced, etc. Some software programs will allow for a short description or a menu name to be included.
- Below is an example of a description, short description, and menu name for the same item:

Description – Peaches, canned, juice pack, solids and liquids

Short Description – PEACHES,CND,JUC PK,SOL&LIQUIDS

Menu Name – Peach Slices, in juice

Food category for the food item

- Your software will have a set of categories for you to use. Your software may allow you to create new food categories as well. This may help you find foods quicker by looking for a specific category.

Step 1 (continued)

Enter descriptive data

Optional data

- Identify the source of the data.

Enter the source of the data, such as, Nutrition Facts label, manufacturer's specification sheet, etc.

- Enter the manufacturer and brand name, if available.

If the food item is commercially prepared, the brand name and manufacturer can help ensure you pick the correct item from the database while preparing for your nutrient analysis.

Step 2:

Enter the weights and measures

- Add the available measures or serving sizes/portions. In addition to the weight measures, if possible include a volume measure or the each-type of measure, such as slice or piece. All this information should be available on the product label or manufacturer's information/spec sheet.
- For serving sizes based on volume measures, you must enter both the volume measure and the weight associated with that volume. Volume measures cannot be used without a weight measurement due to the different weights of foods. For example, the weight of 1 cup of puffed rice cereal and the weight of 1 cup of refried beans are different even though they share the same volume measure.
- For serving sizes based on something other than a standard unit of measure, such as portion, piece, slice, or patty, a weight associated with that serving size must be included.
- It is important that the user enter correct measurement information from the label or other document, because the nutrient analysis will be calculated from the measurement provided.



Q & A

Should I enter *trans* fat data?

You may enter data for *trans* fat. However, the assessment of *trans* fat will be based on the data from the manufacturer's information and spec sheets, not the nutrient analysis.

Why leave nutrient values blank?

If there is no value for a nutrient, do not enter zero. If a zero "0" is entered instead of leaving the value blank, you will no longer be able to identify missing data and the nutrient analysis will be incorrect.

Step 3

Enter nutrient information

- Enter the weight of the serving size the nutrients are based upon. This information can be found on the Nutrition Facts label or the manufacturer's spec sheet.
- Enter the values for calories, saturated fat, and sodium. Enter data for additional nutrients, if desired.
- Enter zero only if there is a zero value or an insignificant amount of a nutrient, as noted on the Nutrition Facts label or manufacturer's spec sheet.
- If a value is not reported, leave it blank in the software.
- Do not round data.

Step 4

Save the data and review

Save your data. After saving, review the entry to ensure the data has been entered correctly. Edit the data to correct any mistakes and save again.

Step 5

Create a report of ingredients and recheck for accuracy

Your software allows you to create a report of the nutrient data for each food item. This is a good way to check the accuracy of the data entered.

Entering food items into your software's database will allow you to reuse any food item for a recipe or menu. Enter the items with care to ensure your nutrient analysis is accurate.



Adding a Recipe to Your Software's Database

Chapter Objectives

After reading this chapter, you will be able to:

- ✓ Determine the difference between cook's recipes and recipes for nutrient analysis.
- ✓ Describe how to select the correct recipe ingredients for the prepared recipe from the software's database.
- ✓ Describe how to adjust the ingredient amounts (yield) to obtain an analysis of the "as prepared" product using the *Food Buying Guide for Child Nutrition Programs (FBG)*.
- ✓ Identify special considerations for recipe analysis.

This chapter will provide detailed information about how to add recipes for nutrient analysis to your software's database.

Nutrient Analysis vs. Cook's or Production Recipes

Recipes for nutrient analysis and cook's (or production) recipes are often different.

- The amount of calories and nutrients in a food will vary depending on the edible portion of the food and whether the food is served raw or cooked.
- The ingredients in your cook's (or production) recipes usually indicate foods in their raw form, "as purchased," including peel, bone, skin, etc.
- For nutrient analysis purposes, recipes must include only the edible portion of a food.
 - You may need to adjust the ingredient information in recipes to reflect what is actually consumed. This is sometimes referred to as the Yield Factor Method.

The cook's (or production) recipe is used by food service staff to prepare the recipe and includes foods in their unprepared, often raw, state. For example, a cook's recipe ingredient list may call

for 25 pounds of raw chicken breast and 1 pound of onions. Subsequently, as the recipe is prepared, the chicken will be cooked and the onions will be peeled, diced, and cooked.

Nutrient analysis recipes:

- are based on the yield of the ingredients in the "as prepared" form, and
- use the nutrient analysis of the cooked ingredient, not the raw, for ingredients that are cooked.



In the example, the cooked yields of the chicken breast and onions are used in the nutrient analysis. The prepared or cooked yield can be determined by using information from the *Food Buying Guide for Child Nutrition Programs (FBG)*.

Below are some examples of ingredients that typically change the yield and nutrient information during cooking. They may require you to enter a different preparation form of the ingredient such as, “as prepared” or “as consumed.” Examples are:

- raw meat, fish, and poultry;
- dry rice, dry pasta, and other dry grains; and
- fresh fruits and vegetables.

More information about these foods and examples are provided later in this chapter.

Review your recipes to determine which ingredients need to be adjusted to the “as prepared” item for nutrient analysis.

Determine if your software has the functionality that allows you to enter the “as prepared” ingredient and amount for nutrient analysis within the original cook’s recipe. If not, you will need to enter a second recipe for nutrient analysis. Instructions and a sample nutrient analysis recipe are included in this chapter.

Adjust recipe ingredients for accurate recipe analysis.

Raw and cooked ingredients may have nutrient values that differ from each other. Remember, the recipe must be analyzed to reflect the nutrients in the prepared product that will be eaten or consumed.

When selecting ingredients, it is important to remember:

- Selecting the correct food item, in its prepared form, such as cooked vs. raw carrots, will result in a more accurate recipe analysis.
- Reviewing the description and recipe instructions to determine how the ingredient is prepared and cooked will ensure the correct ingredient is selected.
- Some ingredients have minimal changes during preparation and cooking and do not need to be adjusted.

For all ingredients used in the nutrient analysis, read the description and choose a food item from the software’s database with a description closest to your prepared product. Look for key descriptors related to how the ingredient is prepared such as peeled, chopped, or shredded. Sometimes that information may be in the measurement description, for example, cantaloupe with measurement choices include cup, “chopped” or “sliced.”



Key Point

When choosing ingredients from the database you need to consider:

- Variety (brown or white rice)
- Type (long or short grain rice)
- Form (dry or cooked rice)
- Preparation (cooked with salt added or no salt added)

Recipe Ingredients with Minimal Nutrient Changes During Preparation and Cooking

The following types of ingredients have minimal changes during preparation and cooking, so typically they do not need to be yield-adjusted or replaced with an “as prepared” ingredient:

- Heated and unheated canned vegetables
- Fully cooked, prepared food products that are only oven heated
- Raw or frozen meat added to soups, stews (the meat will not be drained and fat/juices will be consumed in the product)
- Raw pasta that will be cooked in the recipe with no extra cooking water/salt (not drained)
- Flour
- Sugar
- Spices/seasonings

Recipe Ingredients that May Have Significant Nutrient Changes During Preparation and Cooking

The following foods typically need to be adjusted for both their yield and nutrient changes during cooking.

Vegetables

- Vegetables in the *raw* or *frozen* form which are cooked in the recipe will need to be analyzed with a *cooked* form of the food and yield because of the changes in nutrient and moisture content.
- Check for a cooked or prepared form in your software’s database that most closely matches how the ingredient will be prepared in your recipe.
- For the ingredient amount, yield adjustments should be made using data from the FBG, manufacturer’s information, or your software program.

Meats

- There are a number of factors that must be considered in entering recipes that contain raw meat for nutrient analysis, such as the cut of meat, preparation method, bone-in, or if the fat is drained.
- For meats, you must convert the raw weight in the recipe to the cooked or edible weight, using the same method used with the vegetables above.

Dried Pasta

- Many recipes call for cooking dried pasta in boiling salted water prior to combining it with the sauce. Since the pasta does not absorb the total amount of either the boiling water or the salt during cooking, a cooked pasta must be selected for nutrient analysis.
- The weight of the dried pasta must be converted to the appropriate amount of cooked pasta, using the yield data from the FBG.
- The water and salt used in the recipe are not included in the ingredient list for the nutrient analysis recipe.



Key Point

Obtaining an accurate nutrient analysis for a recipe requires that raw recipe ingredients may need to be converted and entered in the recipe database as ready-to-serve or cooked ingredients.

- Use yield data from the FBG to convert from the raw to the cooked amount.
- Choose a cooked or “as prepared” version of the ingredient to use for the nutrient analysis.

Example 1

Recipe Using Frozen Whole Green Beans

A recipe calls for **10 pounds of frozen whole green beans** to make Green Bean Casserole. For the nutrient analysis recipe, you would select the cooked green beans (without salt) from the software's database. We selected *Beans, snap, green, frozen, cooked, boiled, drained without salt*.



Food Item Details

| | |
|---|--|
| Meal Component | Vegetables |
| Meal Category | Other Vegetables ¹ |
| Subcategory | BEANS, GREEN |
| Food As Purchased, AP | Beans, Green, Frozen <i>Whole, Includes USDA Foods</i> |
| Purchase Unit | Pound |
| Servings per Purchase Unit, EP | 10.70 |
| Serving Size per Meal Contribution | ¼ cup cooked, drained vegetable |
| Purchased Units for 100 Servings | 9.40 |
| Additional Information | 1 lb AP = 0.88 lb (about 2- ⁵ / ₈ cups) cooked vegetable |

¹ For the purposes of the NSLP, the “Other Vegetables” requirement may be met with any additional amounts from the dark green, red/orange, and beans/peas (legumes) vegetable subgroups as defined in § 210.10(c)(2)(iii). Additional documentation from the vendor would be necessary to determine crediting.

Refer to the FBG to convert the green beans from “as purchased” to the edible amount of cooked green beans for the nutrient analysis:

- ✓ The FBG indicates that each pound of frozen green beans yields 0.88 pounds of cooked, drained green beans.
- ✓ 10 pounds X 0.88 = 8.8 pounds of cooked green beans
- ✓ The menu planner would select *Beans, snap, green, frozen, cooked, boiled, drained without salt* and **enter a weight of 8.8 pounds** of cooked green beans into the Green Bean Casserole recipe for nutrient analysis.

Example 2

Recipe Using Fresh Baby Carrots

A recipe calls for **10 pounds of fresh baby carrots** to make Herb Roasted Carrots. To enter the fresh baby carrots into the recipe, you would select the cooked baby carrots (without salt) from the software's database. We selected *Carrots, cooked, boiled, drained, without salt*.



Food Item Details

| | |
|---|--|
| Meal Component | Vegetables |
| Meal Category | Red/Orange Vegetables |
| Subcategory | CARROTS |
| Food As Purchased, AP | Carrots, fresh <i>Baby, Ready-to-use</i> |
| Purchase Unit | Pound |
| Servings per Purchase Unit, EP | 11.40 |
| Serving Size per Meal Contribution | ¼ cup cooked, drained vegetable |
| Purchased Units for 100 Servings | 8.80 |
| Additional Information | 1 lb AP = 0.97 lb (about 2-¾ cups) cooked carrots; 1 lb AP = 1 lb (about 3-⅞ cups) ready-to-serve raw carrots |

Refer to the FBG to convert the baby carrots from “as purchased” to an edible amount of cooked carrots for the nutrient analysis:

- ✓ The FBG indicates that each pound of fresh baby carrots yields 0.97 pounds of cooked carrots.
- ✓ 10 pounds X 0.97 = 9.7 pounds of cooked carrots
- ✓ The menu planner would select *Carrots, cooked, boiled, drained, without salt*, and **enter a weight of 9.7 pounds** of cooked carrots into the Herb Roasted Carrots nutrient analysis recipe.

Example 3

Recipe Using Raw Stew Meat

A recipe calls for **21 pounds of raw stew beef** (the recipe calls for browning the meat and draining the fat) to make Beef Stew. To enter stew beef into the recipe, you would select the cooked beef, stew (fat separated) from the software's database. We selected *Beef, chuck for stew, separable lean and fat, all grades, cooked, braised*.



Food Item Details

| | |
|---|--|
| Meal Component | Meats/Meat Alternates ¹ |
| Meal Category | Beef and Beef Products |
| Subcategory | BEEF STEW MEAT, fresh or frozen |
| Food As Purchased, AP | Beef Stew Meat, fresh or frozen <i>Composite of trimmed retail cuts, Without bone, Practically-free-of-fat</i> |
| Purchase Unit | Pound |
| Servings per Purchase Unit, EP | 9.76 |
| Serving Size per Meal Contribution | 1 oz cooked lean meat |
| Purchased Units for 100 Servings | 10.30 |
| Additional Information | 1 lb AP = 0.61 lb cooked lean meat |

¹ Information about Alternate Protein Products (APP) can be found in 7 CFR Parts 210, 215, 220, 225, and 226

Refer to the FBG to convert the raw meat from “as purchased” to an edible amount of cooked meat for the nutrient analysis:

- ✓ The FBG indicates that each pound of raw stew meat yields 0.61 pounds of cooked lean meat.
- ✓ $21 \text{ pounds} \times 0.61 = 12.81$ pounds of cooked stew meat
- ✓ The menu planner would select *Beef, chuck for stew, separable lean and fat, all grades, cooked, braised* and **enter a weight of 12.81 pounds** of cooked stew meat into the Beef Stew recipe for nutrient analysis.



Did You Know

If the recipe calls for raw meat and the fat remains in the recipe, there is no need to replace it with the cooked version. For example, if a recipe calls for ground beef or turkey to make meatballs and you cook them in the sauce, use the weight of the raw meat in the recipe.

Example 4

Recipe Using Raw Chicken

A recipe calls for **25 pounds of chicken thighs** (the recipe calls for the thighs to be baked and served with the skin). To enter the chicken thighs into the recipe, you would select the cooked chicken thighs (meat and skin) from the software's database. We selected *Chicken, broilers or fryers, thigh, meat and skin, cooked, roasted*.



Food Item Details

| | |
|---|--|
| Meal Component | Meats/Meat Alternates ¹ |
| Meal Category | Poultry |
| Subcategory | CHICKEN PARTS, fresh or frozen |
| Food As Purchased, AP | Chicken Parts, fresh or frozen, Thighs¹⁹ <i>With bone, With skin, (about 4.0 oz each)</i> |
| Purchase Unit | Pound |
| Servings per Purchase Unit, EP | 4.00 |
| Serving Size per Meal Contribution | 1 thigh (about 2 oz cooked poultry with skin) |
| Purchased Units for 100 Servings | 25.00 |
| Additional Information | 1 lb AP = 0.52 lb cooked, boned, chicken meat with skin |

¹ Information about Alternate Protein Products (APP) can be found in 7 CFR Parts 210, 215, 220, 225, and 226.

¹⁹ If the average raw weights of the chicken parts are different from those stated, use the yield information in Column 6 to determine cooked weight.

Refer to the FBG to convert the raw meat from “as purchased” to an edible amount of cooked meat for the nutrient analysis:

- ✓ The FBG indicates that each pound of raw chicken meat yields 0.52 pounds of boned, chicken meat with skin.
- ✓ $25 \text{ pounds} \times 0.52 = 13 \text{ pounds}$ of cooked chicken meat with skin
- ✓ The menu planner would select *Chicken, broilers or fryers, thigh, meat and skin, cooked, roasted* and **enter a weight of 13 pounds** of cooked chicken meat into the nutrient analysis recipe.



Did You Know

The nutrient analysis of a three-ounce portion of cooked chicken with the skin and bones will be different from the nutrient analysis of a three-ounce portion of cooked, boneless chicken.

Example 5

Recipe Using Dried Pasta

A recipe calls for **4 pounds of dry spaghetti** (the recipe calls for the pasta to be cooked separately). To enter the pasta for the recipe, you would select the cooked spaghetti from the software's database. We selected *Spaghetti, Cooked, Enriched, with Added Salt*.



Food Item Details

| | |
|---|---|
| Meal Component | Grains |
| Meal Category | Pasta |
| Subcategory | PASTA ⁴ |
| Food As Purchased, AP | Pasta (Group H) <i>Spaghetti, Regular, Enriched², Dry</i> |
| Purchase Unit | Pound |
| Servings per Purchase Unit, EP | 10.60 |
| Serving Size per Meal Contribution | ½ cup cooked, pieces |
| Purchased Units for 100 Servings | 9.50 |
| Additional Information | 1 lb dry = about 3-¼ cups dry enriched spaghetti pieces; 1 lb dry = 2.37 lb (about 5-¼ cups) al dente cooked boiled 8 min |

² Enriched grain items must be combined with at least 50% whole grains to meet the Food and Nutrition Service's whole grain-rich (WGR) criteria.

⁴ The yield for pasta will vary depending on the type and shape of pasta, how it is cooked, the amount of water used and the drain time.

Refer to the FBG to convert the dry spaghetti from “as purchased” to an edible amount of cooked pasta for the nutrient analysis:

- ✓ The FBG indicates that each pound of dry spaghetti yields 5.25 cups of cooked pasta.
- ✓ 4 pounds X 5.25 cups/pound = 21 cups of cooked spaghetti
- ✓ The menu planner would select *Spaghetti, Cooked, Enriched, with Added Salt*, and **enter 21 cups** of cooked spaghetti to the nutrient analysis recipe.



Helpful Tip

The exception to this method is when dry pasta is used in a recipe where the pasta absorbs the liquid, such as a lasagna made with dry noodles. The dry lasagna noodles, and their weight, would be used for nutrient analysis.

Selecting the correct measures for ingredients

Nutrient values for ingredients based on volume are **different** than values based on weight.

To select the correct measure of a food, it is critical to know whether the food is measured by weight or by volume.

- Weight measures include grams, ounces, and pounds.
- Volume measures include teaspoons, tablespoons, fluid ounces, cups, pints, quarts, and gallons.
- If weight measures (oz, lb) are available for a recipe, it is more accurate to enter the weight measures.



Key Point

When choosing ingredients from the database you need to consider if the measure for an ingredient added is a volume or a weight.

For example, the calories in Raisin Bran are very different for these measures:

- 4 oz (weight) = 360 calories
- ½ cup, or 4 fl oz (volume) = 94 calories

Ounce (oz) vs. Fluid Ounce (fl oz)

Fluid ounce measures are typically used to measure liquids. Often times, the fluid ounce measurement is confused with the weight ounce measure for solids. For example, 4 fl oz (½ cup) of milk does not equal 4 oz by weight. The chart below includes examples of nutrient analysis errors that can occur when the volume measure, fluid ounce, is confused with the weight measure, ounce.

The ingredients below are shown with both ounce and fluid ounce measures. If ounce and fluid ounce are confused, and ounce (weight) is entered for an ingredient that calls for fluid ounce (volume) the weight of the ingredient used will be inaccurate resulting in an inaccurate nutrient analysis. The menu includes:

- 1 cup Cheerios
- 1 cup 1% unflavored milk
- 1 cup mandarin oranges, juice pack

The example below shows the difference in calories for these items when entered as ounce vs. fluid ounce:

| |  Weight (incorrectly entered) |  Volume (correctly entered) |
|-----------------------|---|---|
| Cheerios | 8 oz = 852 calories | 1 cup (8 fl oz) = 105 calories |
| 1% milk | 8 oz = 95 calories | 1 cup (8 fl oz) = 102 calories |
| Mandarin oranges | 8 oz = 84 calories | 1 cup (8 fl oz) = 92 calories |
| Total Calories | 1,031 calories | 299 calories |

NOTE: 4 oz = ¼ pound (not ½ cup); 6 oz = ¾ pound (not ¾ cup); 8 oz = ½ pound (not 1 cup)

½ cup = 4 fluid ounces; ¾ cup = 6 fluid ounces; 1 cup = 8 fluid ounces

If the weight values are used to calculate the nutrient analysis, the analysis would be incorrect.

Detailed Recipe Example

Below is an example of how to enter a recipe to obtain a nutrient analysis of the prepared product using cooked ingredients and yield-adjusted amounts. The recipe Spaghetti and Meat Sauce includes raw ground beef, fresh onions and green peppers, and dry spaghetti.

In this example, the ingredient amounts for **50 servings** are used.



Ingredient #1 – Ground Beef (8 lb 8 oz raw to 6 lb 6 oz cooked)

- Step 1** The recipe calls for 8 lb 8 oz raw ground beef (no more than 15% fat). For the nutrient analysis, the user must select a cooked version of ground beef with no more than 15% fat and calculate the yield of cooked meat from the raw amount.
- Step 2** Select *Beef, ground, 85% lean meat/15% fat, crumbles, cooked, pan-browned* from the ingredient database.
- Step 3** Then refer to the FBG to obtain a factor to convert the raw ingredient amount to a cooked ingredient amount.
- Step 4** In the FBG, you find that 1 lb AP (“as purchased”) Beef, ground, fresh or frozen no more than 15% fat yields 0.75 pounds cooked, drained, lean meat.
- Step 5** For this recipe:
- Take 8 lb 8 oz raw ground beef and convert to total ounces
 $1 \text{ lb} = 16 \text{ oz}$
 $8 \text{ lb} \times \frac{16 \text{ oz}}{1 \text{ lb}} = 128 \text{ oz}$
Add remaining 8 oz $\longrightarrow 128 \text{ oz} + 8 \text{ oz} = 136 \text{ oz}$ raw ground beef
 - Convert raw meat weight to cooked meat weight.
 $136 \text{ oz raw} \times \frac{0.75 \text{ cooked}}{\text{raw}} = 102 \text{ oz cooked meat}$
 $102 \text{ oz} \times \frac{1 \text{ lb}}{16 \text{ oz}} = 6.375 \text{ lb (or 6 lb 6 oz)}$
- Step 6** Enter 102 oz (or 6 lb 6 oz or 6.375 lb) of *Beef, ground, 85% lean meat/15% fat, crumbles, cooked, pan-browned* into the nutrient analysis recipe.



Ingredient #2 – Raw Onion (5 oz raw to 3.9 oz cooked)

- Step 1** Select the cooked equivalent of this item from the software program's database. In this example, *Onions, cooked, boiled, drained, without salt* is used.
- Step 2** Then refer to the FBG information to obtain a factor to convert the raw ingredient amount to a cooked ingredient amount. The yield factor for onions, cooked, pieces is 0.78.
- Step 3** Multiply 5 oz x 0.78 = 3.9 oz cooked
- Step 4** Enter 3.9 oz of *Onions, cooked, boiled, drained without salt* into the nutrient analysis recipe.



Ingredient #3 – Raw Green Pepper (5 oz raw to 3.65 oz cooked)

- Step 1** Select the cooked equivalent of this item from the software program's database. In this example, *Peppers, sweet, green, cooked, boiled, drained, without salt* is used.
- Step 2** Then refer to the FBG information to obtain a factor to convert the raw ingredient amount to a cooked ingredient amount. The yield factor for Peppers, Bell, fresh, cooked, drained vegetable is 0.73.
- Step 3** Multiply 5 oz x 0.73 = 3.65 oz
- Step 4** Enter 3.65 oz of *Peppers, sweet, green, cooked, boiled, drained, without salt* into the nutrient analysis recipe.



Ingredient #4 – Raw Carrots (1 lb 4 oz raw to 1 lb 2.4 oz cooked)

Step 1 Select the cooked equivalent of this item from the software program's database. In this example, *Carrots, cooked, boiled, drained, without salt* is used.

Step 2 Then refer to the FBG information to obtain a factor to convert the raw ingredient amount to a cooked ingredient amount.

Step 3 In the FBG, you find that 1 lb of carrots, shredded, ready-to-use yields 0.92 lb cooked carrots.

Step 4 Convert pounds and ounces to ounces only

1 lb 4 oz

$$1 \text{ lb} \times \frac{16 \text{ oz}}{1 \text{ lb}} = 16 \text{ oz}$$

Add remaining 4 oz \longrightarrow 16 oz + 4 oz = 20 oz of carrots

Step 5 Convert raw carrots to cooked carrots

$$20 \text{ oz raw} \times \frac{0.92 \text{ cooked}}{\text{raw}} = 18.4 \text{ oz cooked carrots}$$

Step 6 Enter 1 lb 2.4 oz (or 18.4 oz) of *Carrots, cooked, boiled, drained, without salt* into the nutrient analysis recipe.



Ingredient #5 – Whole wheat Spaghetti (3 lb 2 oz dry to 25.56 cups cooked)

Step 1 Select the cooked equivalent of this item from the software program's database. In this example, *Pasta, whole wheat, cooked* is used.

Step 2 Then refer to the FBG information to obtain a factor to convert the dry ingredient amount to a cooked ingredient amount.

Step 3 In the FBG, you find that 1 lb of pasta, spaghetti, whole wheat, regular, dry yields about 8.5 cups cooked pasta.

Step 4 Convert pounds and ounces to pounds only

3 lb 2 oz

$$2 \text{ oz} \times \frac{1 \text{ lb}}{16 \text{ oz}} = 0.125 \text{ lb}$$

Add remaining 3 lb \longrightarrow 3 lb + 0.125 lb = 3.125 lb of dry pasta

Step 5 Convert dry pasta to cooked pasta

$$3.125 \text{ lb dry} \times \frac{8.5 \text{ cups cooked}}{1 \text{ lb dry}} = 25.56 \text{ oz cups cooked}$$

Step 6 Enter 25.56 cups of *Pasta, whole wheat, cooked* (spaghetti, not packed) into the nutrient analysis recipe.





Reminder

Since the water absorbed by the pasta is included in the cooked spaghetti ingredient, the actual ingredient of cooking water should not be included in the nutrient analysis recipe. In this recipe, salt is not added to the cooking water for the pasta. If salt is added to the cooking water, the salt also should not be included in the nutrient analysis recipe. Instead, a cooked pasta that was cooked with salt added should be used for the nutrient analysis.

Including the additional water and salt would increase the gram weight of the final product, as well as inflate the sodium content of the final recipe “as consumed.”

Remember that to obtain an accurate nutrient analysis, you must use both the “as prepared” (or “as consumed”) ingredient AND the yield-adjusted amount. Since the other ingredients in this recipe (tomato puree, broth, and spices) are not significantly affected by preparation, those ingredients may be entered as they appear on the production recipe.

Special Topics for Recipe Analysis

How the Software Calculates the Nutrient Analysis

When recipes are entered into the software, both a serving size and a recipe yield (the number of servings a recipe makes) are entered. It is important to know that the software calculates the nutrients in a serving based on the number of servings in the recipe (the yield), not based on the size of the serving entered. In addition, total nutrients in the recipe are divided by the number of servings to get the “per serving” analysis.

If the recipe has been entered accurately using the ingredient amounts adjusted for the yield of the ingredient in the prepared recipe, the gram weight of one serving as calculated by the software should be close to the average actual gram weight of one serving.

When your own standardized recipes are entered and saved to the recipe database in the software, it produces consistently good results and yields every time when using the same procedures, equipment, and quality and quantity of ingredients. Additionally, it will:

- Provide consistent calories, saturated fat, and sodium,
- Yield the same quantity of product each time, and
- Predict the number of portions from each recipe accurately.

Creating a Salad Bar or Theme Bar Recipe

Standardized recipes can be developed from production records for salad bars and other food bars, such as pasta bars, taco bars, deli bars, potato bars, and so forth, and entered into your software. The recipe entered in your software should be based on a “typical day.”

The standardized recipe of the food bar and its nutrient analysis are based on historical usage of food bar items.

To develop a standardized recipe for a theme bar:

Step 1

Determine the number of servings the recipe produces (yield).

This would be the number of people who use the food bar.

Step 2

Determine the serving size.

The serving size is the minimum quantity that the student must select to meet the meal pattern for the reimbursable meal. For example, for an entrée salad, the minimum quantity might be 1 cup.

Step 3

Determine the amount of each ingredient in the recipe:

- Measure the amount of each ingredient placed on the food bar on a typical day (the amounts placed on the bar at the beginning of the meal service plus any additions to the bar during the meal service).
- Measure the amount of each ingredient left over on the food bar at the end of the meal service.
- To determine the amount of each ingredient to enter for the recipe, subtract the amount left over from the amount placed on the food bar for each ingredient.

After the recipe is entered into the software's database, it can be used in planning or analyzing a day's menu. The number of servings entered into the menu for nutrient analysis would be the estimated number of students who are expected to select a reimbursable meal from the food bar (or the estimated number of servings of the menu item that will be selected as part of a reimbursable meal, if the food bar does not offer a full meal).

A separate recipe must be developed for each variation of the food bar. For example, if you rotate two salad bars, one that features iceberg lettuce and another that features fresh spinach, two separate recipes need to be developed. If other ingredients vary, each combination would need a separate recipe.

Check Your Nutrient Analysis Recipes

It is important to review your nutrient analysis recipes after you finish entering them. The following are areas where errors are common:

- Incorrect food item or ingredient selected.
- Incorrect measurements, such as weight or volume errors.
- Incorrect recipe serving sizes.
- “As purchased” weight used rather than edible portion (Ingredient amount not adjusted for prepared yield).
- Data entry errors, such as accidentally entering an extra digit for a number or entering an incorrect number.

Reminders:

- Carefully select the correct prepared or cooked food item from the software's database, closely matching the cooking/preparation method in the recipe to your food item selection from your software's database.
- Be sure to include all ingredients, for example, a recipe for rolls must include the butter or margarine, brushed on top of rolls.
- Choose the correct measurement for each ingredient.

Considerations for USDA Recipes

As discussed earlier, for USDA standardized recipes, only the *nutrients*, not the *production recipes*, are included in the CN Database and are required to be included in the approved nutrient analysis software's database. If you follow the standardized recipe as provided by USDA, you may use the nutrients in your software for these recipes without entering a separate nutrient analysis recipe (or you may use the ingredient for the standardized recipe as the only ingredient in your nutrient analysis recipe).



Key Point

Some software companies enter the USDA recipes as production (cook's) recipes into the local database of their approved nutrient analysis software.

- This data entry may help schools easily modify the recipe for variations using alternate or optional ingredients.
- The user can simply copy and edit the recipe, instead of entering the entire recipe with the alternate ingredient or variation.
- State agencies and SFAs must review these recipes to ensure they have been entered according to nutrient analysis protocols to obtain an analysis of the “as prepared” (“as consumed”) product.
- Changes to the recipe may require the recipe to be restandardized to ensure that the recipe is providing the serving size and meal pattern contributions stated.

Some approved nutrient analysis software programs have functionality that allows the yield factors and cooked ingredients for the nutrient analysis to be incorporated into the recipe, so that two recipes do not have to be entered.

Summary

Steps to enter a recipe for nutrient analysis

Here is a summary of the steps for entering a recipe for nutrient analysis. Please follow your software's directions for entering recipes for nutrient analysis, as the functionality may differ between programs.

Step 1

Enter recipe number.

Most software programs will automatically assign a number as each new recipe is added.

Step 2

Enter the recipe name.

Remember to develop a system that will help you locate your recipes.

Step 3

Identify the recipe category.

For example, entrees, salads, or vegetables. This will also help when searching for a recipe.

Step 4

Identify the source of the recipe.

Step 5

Enter the serving or portion size.

For example, ½ cup, 2.25 oz patty, 1 each.

Step 6

Enter the number of servings the recipe makes (this is the yield).



Helpful Tip

Remember to save your recipe frequently as you are entering it!

Step 7

Select the correct ingredients, along with the correct amount.

For example, 3 lbs + 2 oz carrots, shredded, raw.

Step 8

Compare the recipe entered in the software to your cook's (production) recipe and notes to be sure that information is correct for the:

- Yield;
- Serving size;
- Ingredients selected from the software's ingredient database to reflect the prepared recipe;

Also, check to be sure:

- All ingredients are included and prepared ingredients are used where appropriate.
- The yield-adjust ingredient amounts are correct and the amount of each ingredient has been adjusted for preparation and cooking, if needed.
- Check for any data entry errors, such as entering extra numbers, data in the wrong field, skipping a field, etc.

Step 9

Review the nutrient analysis.

Use your knowledge to assess if the nutrient values make sense. If they do not, re-check for data entry errors.

Analyzing Menu Plans and Special Considerations

Chapter Objectives

After reading this chapter, you will be able to:

- ✓ Understand how to create a menu plan for nutrient analysis that includes menu names, age/grade group, and meal type.
- ✓ Learn to use weighted nutrient analysis using the number of offered servings and feeding figure.
- ✓ Enter the portion size of each menu item.

Menus are planned to meet the nutrient levels of each USDA established age/grade group and menu type offered for breakfast and lunch. The planned menu is what is intended to be offered to the students. It is usually based on forecasting from historical records. For most USDA required nutrient analyses, an analysis of the offered menu, or the menu prepared and set on the line, is used for the nutrient analysis. You also may wish to do a nutrient analysis of your planned menus to help with ensuring that you meet the requirements, but this is not required. Each nutrient analysis software program will have a different order of steps necessary to analyze menu plans, but the following steps will be common to all the software. The result will be the same, a weighted nutrient analysis of your menu.

Step 1

Identify Your Menu Names and Sites

Identify the menu name and school or site for the menu you want to analyze. If your menus are not yet entered into the software, follow the software program's instructions for entering your menus. (See Step 4.)

Some software allows menus to be created and then allows the menu planner to assign them to schools (sites) and age/grade groups. Other software requires establishing the menu name and age/grade group prior to entering menu data. Follow the procedures of your software.

It may not be necessary to re-enter menus for each age/grade group. All software allows the user to copy a menu and adjust portions or change menu items, as needed.



Key Point

Menu Name and Site are terms used by various software programs to identify your menus. The terms may refer to an actual meal site or it may be used to refer to an age/grade group served at a site.

Step 2

Identify Menu or Meal Types

The type of meal offered must be entered because there are dietary specifications for each meal:

- Lunch
- Breakfast

State agencies and SFAs may not combine breakfast and lunch nutrient analyses. Separate analyses make it easier to identify problems and target technical assistance.

Step 3

Associated Age/Grade Nutrient Standards

Assign a USDA age/grade group to each menu that you want to analyze. Please see current guidance for age/grade group flexibilities. See **Appendix A** for the complete meal pattern.

Examples are:

- Lunch K – 5
- Breakfast 6 – 8
- Lunch 9 – 12

Step 4

Enter the Recipes or Menu Items

If you have not yet entered your menus, identify the menu items (including recipes and condiments) to be included for each menu. The software allows you to search for the recipes or menu items either by identification code or by name of food or recipe.

Each software will have specific instructions on how to enter recipes and items to create a menu. Please use those instructions to include all menu items for the menu, include condiments and any non-creditable extras.

For offered menus, be sure to edit the menu to reflect any last-minute changes to the menu on the day of service, such as substitutions.

Step 5

Determine the Date Range for Analysis

Determine the date range for analysis. A week for nutrient analysis purposes is 3-7 consecutive school days. If there are fewer than 3 consecutive days in a week, those days are combined with the previous or subsequent week for analysis.



Q & A

What is a school week?

For the purposes of nutrient analysis, a school week represents a normal school week of five consecutive days. To accommodate weeks that are either shorter or longer than the five consecutive days, the analyzed week should contain a minimum of three consecutive days and a maximum of seven consecutive days. When school lunches are offered less than three times in a week, combine these menus with either the previous week's menus or the subsequent week's menus.

Step 6

Verify the Serving Sizes (Portions) of Menu Items

For each item or recipe on the menu, you must verify the serving size. Make sure the serving size entered or selected is correct for the age/grade group and item offered that day. Many recipes or menu items will have multiple serving sizes available. Select the size you offered during the meal. The serving size will be used in combination with the number of servings to calculate the nutrient analysis.

Step 7

Determine Number of Servings of Menu Items and Number of Students

Only menu items and recipes offered as part of reimbursable meals are analyzed. To conduct a weighted nutrient analysis, you must enter the number of servings offered (prepared), or put on the serving line, for each menu item. You also need the number of students or feeding figure/count for the meal period. The software will calculate the analysis based on weighted averages (i.e., give more weight to menu items that students select more often). Usually this information can be pulled or copied from the production records for the meal.

Step 8

Create Applicable Reports for Review

- Daily Analysis
- Weekly Analysis

The software allows the user to create various reports as needed for record-keeping and documentation. Reports can also be used to check data entry errors, review the reports, and make any needed changes.



Key Point

Weighted averages must be used for nutrient analyses. This means that all menu items must be weighted, including milk types and condiments/accompaniments.

Common Errors in Data Entry of Menus

These are common errors that can affect your nutrient analysis results. Use this list as a way to check your menus and analysis results.

- Incorrect food item/recipe selected from database
- Wrong serving sizes
- Incorrect feeding figure or number of servings for weighted averaging
- Missing condiments/accompaniments or non-reimbursable items, e.g., mayonnaise, mustard, and/or catsup for hamburgers
- Missing menu items, such as a bun for hamburger; cream cheese or jelly with a bagel; or salad dressing for salads

Special Considerations for Analyzing Menu Plans

Substitutions

Occasionally it may be necessary to make a substitution. This is a concern because:

- Substitutions change the nutrient content; and
- Meals may or may not continue to meet the dietary specifications.

If a substitution is made to the menu, the substitution must be reflected in the offered menu and included in the nutrient analysis. SFAs are expected to make substitutions only due to unforeseen circumstances. Some examples include:

- Food shortage (food not delivered);
- Improper delivery (incorrect product delivered);
- Crop failure (food unavailable);
- Significant cost increase in food items; and
- Effective use of leftovers.

Documentation of substitutions must be maintained by making notes on the menu production records.

Leftovers

If leftovers are being offered to students on the serving line on another day as part of the reimbursable meal, they must be included in weighted nutrient analyses and are subject to the weekly dietary specifications. Leftovers offered to students during the same meal in which items initially offered are considered seconds.

Documentation of leftover usage must be maintained by making notes on the menu production records.

Adjusting Future Menus

Menus need to be edited and analyzed again whenever:

- Menu/food items change;
- Food products change, including commercially prepared products;
- Recipes change;
- Change in number of menu items selected, which changes the weighting;
- Changes in participation (feeding figure, count); and
- Any change that will affect the nutrient content of the meals.



Helpful Tip

For any questions that may arise about food items, recipe analysis, or menu analysis that have not been addressed in this manual, program operators should contact their State agency and the State agency should contact their FNS Regional Office.

Administrative Review

When the State agency validates or conducts a nutrient analysis as part of an Administrative Review of an SFA, State staff will choose 1 week within the review period to evaluate the dietary specifications for breakfast and lunch at the selected school. The site is selected based on results from the *Meal Compliance Risk Assessment Tool*. The State agency will collect the menu documentation for each USDA established age/grade group offered at breakfast and lunch, and validate the SFA's weighted nutrient analysis (or conduct a weighted nutrient analysis) of all

menu and food items (including condiments and non-reimbursable extras, such as ice cream) offered as part of the reimbursable meal. In other words, a separate weighted nutrient analysis is required for each age/grade group at the selected review site and if the review site has different menu offerings for different segments of students in the school, separate analyses are required for each population segment. For questions about the administrative review, schools should contact their State agency, and State agencies should contact their FNS Regional Office.



Meal Pattern for Required Grade Groups: Breakfast and Lunch (Effective July 1, 2022)

Chart 1A: School Breakfast Program (SBP)

| Meal Components | Grades K - 5 | Grades 6 - 8 | Grades 9 - 12 |
|---|--|-----------------|------------------|
| Amount of Food¹ Per Week (Minimum per day) | | | |
| Fruits (cups) ^{2,3} | 5 (1) | 5 (1) | 5 (1) |
| Vegetables (cups) ^{2,3} | 0 | 0 | 0 |
| → Dark Green | 0 | 0 | 0 |
| → Red/Orange | 0 | 0 | 0 |
| → Beans and Peas (Legumes) | 0 | 0 | 0 |
| → Starchy | 0 | 0 | 0 |
| → Other | 0 | 0 | 0 |
| Grains (oz eq) ⁴ | 7-10 (1) | 8-10 (1) | 9-10 (1) |
| Meats/Meat Alternates (oz eq) ⁵ | 0 | 0 | 0 |
| Fluid Milk (cups) ⁶ | 5 (1) | 5 (1) | 5 (1) |
| Other Specifications: Daily Amount Based on the Average for a 5-Day Week | | | |
| Min - Max Calories (kcal) ^{7,8} | 350-500 | 400-550 | 450-600 |
| Saturated Fat (% of total calories) ⁸ | < 10 | < 10 | < 10 |
| Sodium Target 1 (mg) | ≤ 540 | ≤ 600 | ≤ 640 |
| <i>Trans Fat</i> | Nutrition label or manufacturer specifications must indicate zero grams of <u>trans</u> fat per serving. | | |

¹ Food items included in each group and subgroup and amount equivalents. Minimum creditable serving is 1/8 cup.

² One quarter cup of dried fruit counts as 1/2 cup of fruit; 1 cup of leafy greens counts as 1/2 cup of vegetables. No more than half of the fruit or vegetable offerings may be in the form of juice. All juice must be 100% full-strength.

³ Schools must offer 1 cup of fruit daily and 5 cups of fruit weekly. Vegetables may be substituted for fruits, but the first two cups per week of any such substitution must be from the dark green, red/orange, beans and peas (legumes) or "Other vegetables" subgroups, as defined in §210.10(c)(2)(iii) of this chapter.

⁴ At least 80 percent of grains offered weekly must meet the whole grain-rich criteria specified in FNS guidance, and the remaining grain items offered must be enriched. Schools may substitute 1 oz eq of meat/meat alternate for 1 oz eq of grains after the minimum daily grains requirement is met.

⁵ There is no meats/meat alternates requirement.

⁶ All fluid milk must be fat-free (skim) or low-fat (1 percent fat or less). Milk may be unflavored or flavored provided that unflavored milk is offered at each meal service.

⁷ The average daily calories for a 5-day school week menu must be within the range (at least the minimum and no more than the maximum values).

⁸ Discretionary sources of calories (solid fats and added sugars) may be added to the meal pattern if within the specifications for calories, saturated fat, *trans* fat, and sodium. Foods of minimal nutritional value and fluid milk with fat content greater than 1 percent milk fat are not allowed.

Chart 1B: National School Lunch Program (NSLP)

| Meal Components | Grades K - 5 | Grades 6 - 8 | Grades 9 - 12 |
|---|--|-----------------|------------------|
| Amount of Food¹ Per Week (Minimum per day) | | | |
| Fruits (cups) ² | 2-½ (½) | 2-½ (½) | 5 (1) |
| Vegetables (cups) ² | 3-¾ (¾) | 3-¾ (¾) | 5 (1) |
| → Dark Green ³ | ½ | ½ | ½ |
| → Red/Orange ³ | ¾ | ¾ | 1-¼ |
| → Beans and Peas (Legumes) ³ | ½ | ½ | ½ |
| → Starchy ³ | ½ | ½ | ½ |
| → Other ^{3,4} | ½ | ½ | ¾ |
| Additional Vegetable to Reach Total ⁵ | 1 | 1 | 1-½ |
| Grains (oz eq) ⁶ | 8-9 (1) | 8-10 (1) | 10-12 (2) |
| Meats/Meat Alternates (oz eq) | 8-10 (1) | 9-10 (1) | 10-12 (2) |
| Fluid Milk (cups) ⁷ | 5 (1) | 5 (1) | 5 (1) |
| Other Specifications: Daily Amount Based on the Average for a 5-Day Week | | | |
| Min - Max Calories (kcal) ⁸ | 550-650 | 600-700 | 750-850 |
| Saturated Fat (% of total calories) ⁸ | < 10 | < 10 | < 10 |
| Sodium Interim Target 1 (mg) ⁸ | ≤ 1,230 | ≤ 1,360 | ≤ 1,420 |
| Sodium Interim Target 1A (mg) ^{8,9} | ≤ 1,110 | ≤ 1,225 | ≤ 1,280 |
| <i>Trans Fat</i> | Nutrition label or manufacturer specifications must indicate zero grams of <u>trans</u> fat per serving. | | |

¹ Food items included in each group and subgroup and amount equivalents. Minimum creditable serving is ⅛ cup.

² One quarter-cup of dried fruit counts as ½ cup of fruit; 1 cup of leafy greens counts as ½ cup of vegetables. No more than half of the fruit or vegetable offerings may be in the form of juice. All juice must be 100% full-strength.

³ Larger amounts of these vegetables may be served.

⁴ This category consists of “Other vegetables” as defined in paragraph (c)(2)(iii)(E) of this section. For the purposes of the NSLP, the “Other vegetables” requirement may be met with any additional amounts from the dark green, red/orange, and beans/peas (legumes) vegetable subgroups as defined in paragraph (c)(2)(iii) of this section.

⁵ Any vegetable subgroup may be offered to meet the total weekly vegetable requirement.

⁶ At least 80 percent of grains offered weekly must meet the whole grain-rich criteria specified in FNS guidance, and the remaining grain items offered must be enriched.

⁷ All fluid milk must be fat-free (skim) or low-fat (1 percent fat or less). Milk may be unflavored or flavored provided that unflavored milk is offered at each meal service.

⁸ The average daily calories for a 5-day school week menu must be within the range (at least the minimum and no more than the maximum values). Discretionary sources of calories (solid fats and added sugars) may be added to the meal pattern if within the specifications for calories, saturated fat, trans fat, and sodium. Foods of minimal nutritional value and fluid milk with fat content greater than 1 percent are not allowed.

⁹ Sodium Interim Target 1A must be met no later than July 1, 2023 (SY 2023-2024).

USDA-Approved Nutrient Analysis Software Requirements



Description of Software Requirements and Functions

Approved nutrient analysis software, which meets the specifications for use in the school meal programs, must comply with the following criteria:

- The software must include the data from the most recent version of the Child Nutrition (CN) Database.
- The software must prevent users from editing information provided from the CN Database, but allow the user to edit user-entered information.
- The user must be able to enter new food items into the database from information provided in a manufacturer's fact sheet or food label in nutrients per serving or specific weight.
- The software must automatically convert measures for weight and volume (if available) at all levels of item entry, recipe creation, and menu planning.
- The user must be able to enter recipes. The software will produce a recipe report that includes the recipe code number, recipe name, serving/portion size, yield of the recipe based on number of servings, ingredients, the amount of each ingredient in units appropriate for food service, preparation instructions, and nutrient value of the recipe per serving.
- The software must include a Recipe Nutrient Composition Report that provides the nutrient value contributed by each ingredient and the total nutrient value of the recipe per serving.

Description of Software Requirements and Functions (continued)

- The software must adjust the yield of recipes with ingredient amounts accurately calculated for the new yield without altering the original recipe.
- The user must be able to create menus for a specific site and copy those menus to another site, age/grade group, or data range.
- The software must have functionality to create a Menu Report listing the offered menu items, number of servings, and serving size along with the feeding figure (count).
- The software must calculate a Weighted Nutrient Analysis of an individual menu or range of menu dates (including the 5-day week). A summary of the calculated nutrient value of the weekly menu must be compared to the nutrient standards of a selected age/grade group and discrepancies highlighted.
- The user can create a report (display or print) of the nutrient composition of selected (or all) food items and recipes in the software's database.
- The software developer must provide clear instructions, such as a user manual, which is presented in a complete, sequential, easy-to-understand format.
- The software programs that have been USDA-approved for nutrient analyses required in the school meal programs may be found at <https://www.fns.usda.gov/tn/usda-approved-nutrient-analysis-software>.

Sample Nutrition Facts Label

| Nutrition Facts | |
|---|----------------------|
| 8 servings per container | |
| Serving size | 2/3 cup (55g) |
| Amount per serving | |
| Calories | 230 |
| % Daily Value* | |
| Total Fat 8g | 10% |
| Saturated Fat 1g | 5% |
| <i>Trans</i> Fat 0g | |
| Cholesterol 0mg | 0% |
| Sodium 160mg | 7% |
| Total Carbohydrate 37g | 13% |
| Dietary Fiber 4g | 14% |
| Total Sugars 12g | |
| Includes 10g Added Sugars | 20% |
| Protein 3g | |
| Vitamin D 2mcg | 10% |
| Calcium 260mg | 20% |
| Iron 8mg | 45% |
| Potassium 240mg | 6% |
| * The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice. | |

For more information on the Nutrition Facts label, visit the FDA website at <https://www.fda.gov/food/food-labeling-nutrition>

Glossary

Approved Software (or USDA-Approved Software or Approved Nutrient Analysis Software)

Software that has been reviewed by USDA and found to meet the standards for nutrient analyses required in the school meal programs.

Administrative Review

The comprehensive offsite and onsite evaluation of all School Food Authorities participating in the Program. The term “Administrative Review” is used to reflect a review of both critical and general areas.

As Consumed

is the form in which the food is consumed. Also known as, “edible portion,” “as served,” or “as prepared.”

As Purchased

is the form in which the food is purchased.

Child Nutrition Database

is a nutrient database of over 10,000 food items required to be included as part of the nutrient analysis software approved by USDA for use in the National School Lunch Program and School Breakfast Program.

Child Nutrition (CN) Labeling

is a program that provides manufacturers the option to include a standardized food crediting statement on their product label. CN labels must be authorized by USDA, Agricultural Marketing Service (AMS) prior to being used. Manufacturers must have an approved quality control (QC) program and inspection oversight that meets FNS, Child Nutrition Programs requirements. CN labeled products are generally purchased by providers for USDA meal programs.

Cycle Menu

is a set of meal components and food items that are different for each day during a set period of time (cycle) and repeated.

Dietary Guidelines for Americans (DGA)

are science-based recommendations issued every 5 years by the U.S. Departments of Agriculture and Health and Human Services which serve as the cornerstone for all Federal nutrition education and program activities; they provide sound advice for making food and physical activity choices that promote good health and a healthy weight, as well as help prevent disease for Americans ages 2 years and over, including Americans at increased risk of chronic disease.

Food Buying Guide for Child Nutrition Programs (FBG)

is the authoritative guide developed by USDA to help child nutrition professionals determine purchase amounts of foods for crediting meal components in food-based menu planning.

Food and Nutrition Service (FNS)

is the agency under the United States Department of Agriculture responsible for administering the National School Lunch, School Breakfast, Special Milk, and other nutrition and food assistance programs.

Food-Based Menu Planning (FBMP)

is the method for meal planning for National School Lunch Program and School Breakfast Program which includes required quantities from specific meal components daily and weekly in meal patterns. These components are: fluid milk, fruits, vegetables (including subgroups), grains (whole grain-rich), and meats/meat alternates. Minimum portion sizes are established by ages and grade groups.

Glossary

Missing Nutrient Value

A missing nutrient value does not mean that there is none of the given nutrient in the food, but rather that information about this nutrient was unavailable or not provided. It is not assumed to be zero.

Offer Versus Serve (OVS)

is a provision that allows students to decline a specific number of meal components/food items depending on the menu planning approach used.

Offered Menu

is what is actually prepared and set out on the serving lines for students. Offered menus may differ from “planned” menus because, for example, a planned food item was not received from the distributor and the menu planner had to offer a different food item.

Planned Menu

is what the menu planner intends to offer to students. It represents the School Food Authority's (SFA's) calculation of the items that will need to be prepared for a school's usual average daily participation (ADP). Ideally, the planned and the offered meals are the same.

Production Recipe (or Cook's Recipe)

The production recipe is used by food service staff to prepare the recipe and includes foods in their unprepared, often raw, state.

School Food Authority (SFA)

The governing body that is responsible for the administration of one or more schools and has the legal authority to operate the program therein or be otherwise approved by USDA, Food and Nutrition Service to operate the program.

Selected/Served Menu

refers to the foods that were actually served to, or selected by, students. Menu planners should use selected/served food item data to inform future menu planning (production records should

be updated based on this data to reflect serving trends) and reduce food waste (i.e., so the school does not offer items that students do not select).

Smart Snacks in School

are nutrition standards that apply to all foods sold to students at school outside of the federally reimbursable meals served through the National School Lunch and School Breakfast Programs.

Standardized Recipe

is a recipe that has been tried, adapted, and retried several times for use by a school nutrition operation. The recipe has been found to produce the same good results and yield every time when the exact procedures are used with the same type of equipment and the same quantity and quality of ingredients.

State Agency (SA)

is the State educational agency or any other agency of the State that has been designated by the Governor or other appropriate executive or legislative authority of the State and approved by the Department to administer the program in schools, as specified in 7 CFR 210.3(b); or the Food and Nutrition Service Regional Office (FNSRO) - where the FNSRO administers the program as specified in 7 CFR 210.3(c).

Weighted Averages

is the method used for nutrient analysis that is based on the offered amount of each food item in the menu, thus giving more ‘weight’ in the analysis to the food items students select more often.

Yield Factor Method

is a method of nutrient analysis for recipes that takes into account the changes to ingredients in both nutrient content and amount that occur during preparation and cooking. It is used to obtain the nutrient analysis of the recipe in the prepared state as it is consumed. It is also referred to as the analysis of the prepared recipe.

Appendix E

Resource List

Administrative Review Materials

Please refer to PartnerWeb for Administrative Review materials.

Child Nutrition Database

The Child Nutrition Database is the required nutrient database in the USDA-approved nutrient analysis software.

<https://www.fns.usda.gov/tn/child-nutrition-database>

Child Nutrition Programs: Transitional Standards for Milk, Whole Grains, and Sodium Final Rule

This new rule establishes standards for milk, whole grains, and sodium for school years 2022-2023 and 2023-2024 to give schools time to transition in the short term. Meanwhile, USDA is working to develop long-term nutrition standards - based on the newest DGA and extensive input from a wide range of partners - that will work for schools, families, and industry alike. USDA expects to publish a proposed rule on the updated standards in fall 2022.

<https://www.fns.usda.gov/cn/fr-020722>

Final Rule: Nutrition Standards in the National School Lunch and School Breakfast Programs

The current regulations for the National School Lunch Program and School Breakfast Program are found here. The Final Rule was published on January 26, 2012.

<https://www.govinfo.gov/content/pkg/FR-2012-01-26/pdf/2012-1010.pdf>

Food Buying Guide for Child Nutrition Programs (FBG)

is a resource to help schools buy the right amount and type of food and determine the specific contribution each food makes toward the meal pattern requirements. The FBG is available as an online interactive tool and a mobile app. The online, interactive FBG includes tools such as a Food Buying Guide Calculator, Exhibit A Grains Tool, and the Recipe Analysis Worksheet (RAW).

<https://www.fns.usda.gov/tn/food-buying-guide-for-child-nutrition-programs>



FoodData Central

is an integrated data system that provides expanded nutrient profile data and links to related agricultural and experimental research. FoodData Central is managed by the USDA, Agricultural Research Service and hosted by the National Agricultural Library.

<https://fdc.nal.usda.gov/>

Menu Planner for School Meals

is a comprehensive guide for local school nutrition professionals to assist them with developing healthy, safe, affordable, and appealing school meals and snacks that meet the meal pattern requirements.

<https://www.fns.usda.gov/tn/menu-planner>

Nutrient Analysis Approved Software List (or USDA-Approved Nutrient Analysis Software)

is a list of software programs that have been USDA-approved for nutrient analyses required in the school meal programs.

<https://www.fns.usda.gov/tn/usda-approved-nutrient-analysis-software>

Appendix E

Nutrition Facts Label Resources

This page links to FDA resources about the current food label (Nutrition Facts).

<https://www.fda.gov/food/food-labeling-nutrition/nutrition-education-resources-materials>

Nutrition Standards for School Meals

This website provides regulations, policy memos, and other guidance materials relating to the nutrition standards for the National School Lunch Program and School Breakfast Program.

<https://www.fns.usda.gov/school-meals/nutrition-standards-school-meals>

- Meal Requirements Under the National School Lunch Program and School Breakfast Program: Questions and Answers for Program Operators Updated to Support the Transitional Standards for Milk, Whole Grains, and Sodium Effective July 1, 2022

<https://www.fns.usda.gov/cn/sp052022-questions-answers-program-operators>

- Clarification on the Milk and Water Requirements in the School Meal Programs
<https://www.fns.usda.gov/cn/clarification-milk-and-water-requirements-school-meal-program>
- Smoothies Offered in Child Nutrition Programs
<https://www.fns.usda.gov/cn/smoothies-offered-child-nutrition-programs>
- Salad Bars in the National School Lunch Program and School Breakfast Program
<https://www.fns.usda.gov/cn/salad-bars-national-school-lunch-program-and-school-breakfast-program>

Performance-Based Reimbursement

Under the Healthy Hunger-Free Kids Act certification of compliance provides additional reimbursement to school districts that certified to be in compliance with the new meal patterns.

<https://www.fns.usda.gov/school-meals/certification-compliance>

Smart Snacks in School

The Healthy, Hunger-Free Kids Act of 2010 requires USDA to establish nutrition standards for all foods sold in schools — beyond the federally supported meals programs. This new rule carefully balances science-based nutrition guidelines with practical and flexible solutions to promote healthier eating on campus.

<https://www.fns.usda.gov/school-meals/smart-snacks-school>

