WEIGHTED NUTRIENT ANALYSIS OF SODIUM

It is important to know how much sodium is in your menu. Making small changes to reduce sodium in your menus will ultimately decrease the daily weighted sodium and weekly sodium averages. Weighted nutrient analysis is a great tool to ensure your menus meet the National School Lunch Program (NSLP) and School Breakfast Program (SBP) dietary specifications. Read more to learn how the daily weighted sodium total and weekly sodium average are calculated.

NUTRIENT ANALYSIS

In the NSLP and SBP, nutrients in foods can be calculated by a nutrient analysis—the process of calculating the nutritional content of food. The purpose of a 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. The nutrient analysis of menus averaged over a week is compared to the required nutrient standards for the age/grade group served.

The nutrient analysis of the offered menu must be based on weighted averages. A *weighted nutrient analysis* is the calculation that averages the nutrient content of all foods offered as part of the reimbursable meals. Food items are included based on portion sizes and serving amounts, and are weighted based on their proportionate contribution to the meals offered. This means that food items offered more frequently are weighted more heavily than those not offered as frequently.

ICN's Setting Weekly and Daily Sodium Goals worksheet provides information on how to set goals to meet the sodium limits.

WEIGHTED NUTRIENT ANALYSIS OF SODIUM

Weighted nutrient analysis can be used as a tool to balance sodium within a daily and weekly menu. For example, it can help you see how pairing higher-sodium entrées with fresh and/or frozen fruits and vegetables instead of canned produce or mixed side dishes can reduce the sodium contribution of that particular menu. Weighted nutrient analysis can also help you balance sodium by pairing higher-sodium entrées with popular lower-sodium entrées. This helps reduce the sodium contribution of higher-sodium entrées and also provides students the choice of lower-sodium options.

The weighted nutrient analysis can highlight where you can prepare and serve condiments and where you can make changes in products.

CALCULATING A WEIGHTED NUTRIENT ANALYSIS OF SODIUM FOR A WEEKLY MENU

To calculate a weighted nutrient analysis of a breakfast or lunch weekly menu, you need the following:

- The **estimated feeding figure** and the **number of servings** and **portion size** for each menu item offered.
- **Nutrient (sodium) information** for each menu item offered, including condiments, and any *extra foods, for each age/grade group.

  Noncreditable (extra foods) are foods offered with a reimbursable meal that do not credit toward any food component (e.g., ice cream).

Conduct separate analyses for breakfast and lunch menus, as well as for each established USDA age/grade group.

Nutrition Facts	
Serving Size	**1 Tbsp (17g)**
Amount Per Serving	
Calories	**20**
	% Daily Value*
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 180mg	8%
Total Carbohydrate 5g	2%
Dietary Fiber 0g	0%

STEP 1: Calculate the Daily Weighted Sodium Total

Let's look at an example by calculating the underlined weighted sodium total for a sample daily menu.

On Monday, you plan to offer the **Menu Items** *(column 1)* listed in the table below, and you estimate that 100 middle school students *(feeding figure)* will go through the serving line. Follow the steps below using the table to calculate the weighted sodium average of the menu.

STEP 1A: For each **Menu Item** *(column 1)*, determine the amount of **Sodium (mg) per Serving** *(column 2)* and the **Number of Servings Offered** *(column 3)*.

STEP 1B: Multiply the amount of **Sodium (mg) per Serving** *(column 2)* by the **Number of Servings Offered** *(column 3)* to calculate the **Total Sodium (mg) of Each Menu Item** *(column 4)*.

1	2		3		4
Menu Items	Sodium (mg) per Serving	X	Number of Servings Offered	=	Total Sodium (mg) of Each Menu Item
Spaghetti w/ Meat Sauce (USDA Recipe)	293	X	85	=	24,905
WG Garlic Bread	184	X	75	=	13,800
Tuscan Grilled Cheese Sandwich (USDA Recipe)	301	X	15	=	4,515
Baked Beans (USDA Recipe)	183	X	15	=	2,745
Garden Salad	29	X	50	=	1,450
Garlicky Green Beans	3	X	35	=	105
Mandarin Oranges	0	X	75	=	0
Fresh Apples	0	X	10	=	0
Ranch Dressing (USDA Recipe)	181	X	50	=	9,050
Milk, Chocolate, 1%	130	X	85	=	11,050
Milk, Plain, 1%	105	X	5	=	525
Milk, Plain, Skim	105	X	5	=	+ 525
		Total Sodium (mg) for the Menu		=	68,670

STEP 1C: Determine the **Total Sodium (mg) for the Menu** by adding the **Total Sodium (mg) of Each Menu Item** *(column 4)*.

STEP 1D: Divide the **Total Sodium for the Menu** by the *feeding figure*.

$$68,670 \text{ mg} \div 100 \text{ students} = 686.7 \text{ mg}$$

The underlined weighted sodium total for this menu = 686.7 mg.

STEP 2: Calculate the Weekly Weighted Sodium Average

Calculate the <u>weekly sodium average</u>:

(from the example in Step 1)	Day 1 =	686.7 mg
	Day 2 =	988.9 mg
	Day 3 =	843.6 mg
	Day 4 =	1,041.9 mg
	Day 5 =	1,069.4 mg

STEP 2A: Add the daily weighted sodium totals:

686.7 mg + 988.9 mg + 843.6 mg + 1,041.9 mg + 1,069.4 mg = 4,630.5 mg

STEP 2B: Divide the sum by the number of menu days in the analysis:

4,630.5 mg ÷ 5 days = 926.1 mg

The <u>weekly sodium average</u> = 926.1 mg.

USDA-APPROVED NUTRIENT ANALYSIS SOFTWARE

- State agencies must use USDA-approved software when conducting a nutrient analysis as part of the Administrative Review process. For School Food Authorities (SFAs) that choose to conduct nutrient analysis, only USDA-approved software is considered an allowable cost to the nonprofit school food service account. Many of the USDA Approved Nutrient Analysis Software are also approved for menu planning (certification of compliance).

- Nutrient analysis of menus by SFAs is not required. However, many SFAs choose to conduct nutrient analysis as a program management option.

- USDA's Nutrient Analysis Protocols: How to Analyze Menus for USDA's School Meal Programs (NAP Manual) provides technical guidance for State agency or school nutrition professionals on calculating accurate nutrient analyses of school menus using their software. If you have nutrient analysis software, the nutrient analysis will be calculated for you. These steps and examples can help explain how a nutrient analysis is done. This manual is useful for guidance and understanding the process.

USDA 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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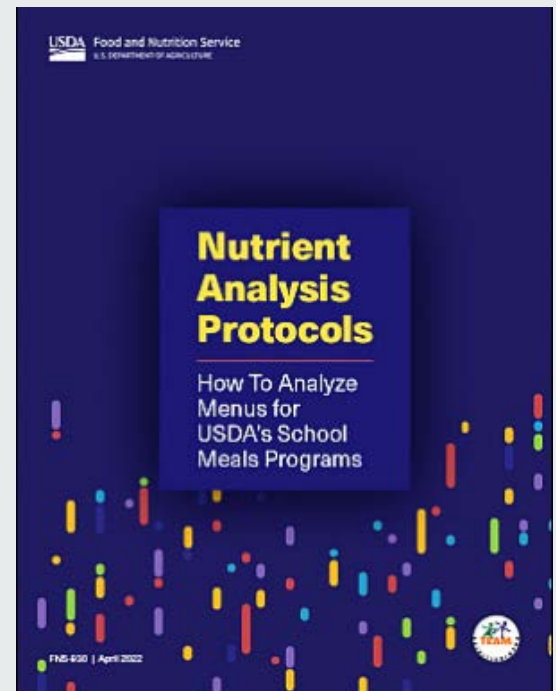
WEIGHTED SODIUM ANALYSIS EXAMPLE

A popular menu item, burgers, provides an opportunity to showcase how a small change can help reduce sodium within a daily menu.

> **Scenario:** *In years past, a cheeseburger on a whole grain-rich bun (630 mg of sodium) was planned as the only entrée on a particular menu. One hundred students typically went through the serving line, and 90 selected the cheeseburger.*
>
> *To reduce sodium, the menu planner decided to provide a build-your-own burger bar, offering plain hamburgers with a whole grain-rich bun (396 mg of sodium), American cheese (234 mg of sodium), and an assortment of *condiments and fresh toppings. After trialing the burger bar several times, the menu planner utilized their production records to plan 90 plain hamburgers, 75 slices of cheese, and an assortment of condiments and fresh toppings.*

Let's examine how removing the cheese from the entrée and providing it as an optional accompaniment reduced the total sodium of the following menu items:

Old Menu

Cheeseburger:

630 mg of sodium x 90 planned servings = 56,700 mg of sodium

56,700 mg of sodium ÷ 100 *(feeding figure)* = 567 mg of sodium

New Menu

Hamburger: 396 mg of sodium x 90 planned servings = 35,640 mg of sodium

American cheese: 234 mg of sodium x 75 planned servings = 17,550 mg of sodium

$$\begin{array}{r} 35,640 \text{ mg of sodium (Hamburger)} \\ + \ 17,550 \text{ mg of sodium (American cheese)} \\ \hline 53,190 \text{ mg of sodium} \end{array}$$
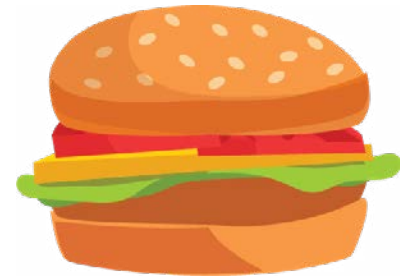
53,190 mg sodium ÷ 100 (feeding figure) = 531.9 mg of sodium

The weighted sodium contribution of the cheeseburger was 567 mg.

The weighted sodium contribution of the hamburger and American cheese offered separately is approximately 532 mg.

The new menu reduced the sodium content by 567 mg - 532 mg = 35 mg of sodium.

*To simplify this activity, we only analyzed the sodium contribution from the cheeseburger (with whole grain-rich bun), hamburger (with whole grain-rich bun), and American cheese. Any condiments and fresh toppings offered will also need to be included in the weighted sodium analysis.