# Chapter 1

## Nutrient Standards

CHAPTER OBJECTIVES

**After reading this chapter, you will understand how to:**

- **Explain USDA's SMI nutrient standards.**
- **Describe nutrient standards for food-based and nutrient-based menu planning options.**
- **List exceptions and modifications on age/grade grouping.**

## What is a Nutrient Standard?

While the nutrition standards include all of the nutrition goals for school meals, a ***nutrient standard*** is the required levels of calories and key nutrients *for a specific grade or age group* for breakfast or lunch.

Note: Nutrient standards have not been established for infants and children younger than age 2 because the Dietary Guidelines do not apply to children under 2 years of age.

### Calories and Nutrients in the Nutrient Standards

**Minimum levels for**

- Calories
- Protein
- Calcium
- Iron
- Vitamin A
- Vitamin C

**Maximum levels for**

- Percentage of calories from total fat (≤ 30%)
- Percentage of calories from saturated fat (< 10%)

**NOTE**

Nutrient standards are the minimum levels of nutrient and caloric levels as indicated in the charts in the next few pages

NSLP Regulations require that breakfast and/or lunch menus, when averaged over a school week, meet the nutrient standards for the appropriate age or grade group. *Meeting these standards is the goal for all menu-planning options.*

### Other Important Nutrients and Dietary Components Analyzed During Nutrient Analysis

- Cholesterol
- Dietary fiber
- Sodium
- Carbohydrate

While the nutrient standards do not specify required levels for cholesterol, sodium, carbohydrate, and dietary fiber, these nutrients are included in the analysis. High dietary intake of

cholesterol and salt or sodium has been associated with hypertension and development of coronary heart disease, in some individuals. While no target levels have been established in the *Dietary Guidelines* for these dietary components, the SMI goal is to reduce the amount of cholesterol and sodium in school meals and increase the amount of dietary fiber over time.

The menu planner and State agency staff evaluate these nutrients to make sure cholesterol and sodium levels are *decreasing*, and dietary fiber levels are *increasing* over time. During an SMI review, State staff will compare results from the previous review with current levels. While some State agencies have established State targets for these dietary components, they are not required or encouraged to do so. The *Dietary Guidelines* do not set target levels for these components. The goal is to monitor improvement over time for the levels of cholesterol, sodium, and fiber in school meals.

Although there is no quantitative level of carbohydrate established for school meals, carbohydrate is important to a healthy diet. The *Dietary Guidelines* emphasize that plant foods such as grains and fruits and vegetables be the foundation of the diet, which is why these foods are at the base of the Food Guide Pyramid. Grain products and fruits and vegetables are low in fat and high in dietary fiber. Offering a variety of grains (especially whole grains), fruits, and vegetables is the basis of healthy eating, accompanied by a moderate amount of low-fat foods from the milk and meat and beans group.

**NOTE**

The *Dietary Guidelines* do not set targets for cholesterol, sodium and fiber. However, several national health organizations and/or Federal agencies have established recommended levels for cholesterol and sodium, and dietary fiber. For comparison, menu planners and State agency staff may want to review Appendix A for these reference values.

## Which Nutrient Standards Should You Use?

Know which menu planning approach you are using.

- Traditional or Enhanced approach — The SFA/school must use the nutrient standards for the *established grade groups* used in planning meals for the SFA/school. There is an

approved modification for nutrient standards available under certain conditions for SFAs/schools using Traditional Food-Based Menu Planning. Refer to pages 13—17 for more information.

- NSMP or ANSMP Use:
  - ¥ *Established Grade groups;*
  - ¥ *Established Age groups* (optional); or,
  - ¥ *Customized Age groups* (optional) developed for the age groups in your SFA/school.

## How Are the Nutrient Standards Derived?

The nutrient standards for each specific age or grade group are calculated by:

1. Adding together the daily requirements for calories and each nutrient, for each age and gender within the age/grade group;

2. Averaging these daily calories and nutrients; and

3. Dividing each average by 3 for lunch and 4 for breakfast.

**NOTE**

Because of the averaging process, the broader the range of each age/grade group used, the more likely the menus will not meet the needs of the older children and may provide too many calories for the younger children.

### Special Caloric Needs

The greatest differential in caloric needs occurs between ages 10-11, or between grades 5-6. A one-year age difference does not make a great difference in the RDA requirements for each nutrient when weighted for the predominant group. However, when several ages are added in on either side of the 10-11 age break, either too few nutrients and calories will be provided for those children ages 11 and above or too many calories and nutrients will be provided for children 10 years and under.

# Nutrient Standards: Food-Based Menu Planning

For Food-Based Menu Planning, the nutrient standards are designed to reflect the differing nutrient and calorie needs of younger and older children while also accommodating the grade structure of the majority of schools.

## Traditional Meal Pattern: Lunch

Required Grade Groups

- Preschool
- Grades K-3
- Grades 4-12
- Optional Grades 7-12

Minimum Nutrient and Calorie Levels for School Lunches
Traditional Menu Planning Approach
(School Week Averages)

| Nutrient and Energy Allowances | Preschool | Grades K-3 | Grades 4-12 | Optional Grades 7-12 |
|---|---|---|---|---|
| Energy Allowances (calories) | 517 | 633 | 785 | 825 |
| Total fat | [1] | [1] | [1] | [1] |
| Saturated fat | [2] | [2] | [2] | [2] |
| Protein (g) | 7 | 9 | 15 | 16 |
| Calcium (mg) | 267 | 267 | 370 | 400 |
| Iron (mg) | 3.3 | 3.3 | 4.2 | 4.5 |
| Vitamin A (RE) | 150 | 200 | 285 | 300 |
| Vitamin C (mg) | 14 | 15 | 17 | 18 |

[1] Total fat not to exceed 30 percent of calories
[2] Saturated fat to be less than 10 percent of calories

## Enhanced Meal Pattern: Lunch

Required Grade Groups

- Preschool
- Grades K-6
- Grades 7-12
- Optional Grades K-3

Minimum Nutrient and Calorie Levels for School Lunches
Enhanced Menu Planning Approach
(School Week Averages)

| Nutrient and Energy Allowances | Preschool | Grades K-6 | Grades 7-12 | Optional Grades K-3 |
|---|---|---|---|---|
| Energy Allowances (calories) | 517 | 664 | 825 | 633 |
| Total fat | [1] | [1] | [1] | [1] |
| Saturated fat | [2] | [2] | [2] | [2] |
| Protein (g) | 7 | 10 | 16 | 9 |
| Calcium (mg) | 267 | 286 | 400 | 267 |
| Iron (mg) | 3.3 | 3.5 | 4.5 | 3.3 |
| Vitamin A (RE) | 150 | 224 | 300 | 200 |
| Vitamin C (mg) | 14 | 15 | 18 | 15 |

[1] Total fat not to exceed 30 percent of calories
[2] Saturated fat to be less than 10 percent of calories

## Traditional and Enhanced Meal Patterns: Breakfast

Required Grade Groups

- Preschool
- Grades K-12
- Optional Grades 7-12 for Enhanced Food-Based Menu Planning.

**Minimum Nutrient and Calorie Levels for School Breakfast Enhanced and Traditional Food-Based Menu Planning Approach (School Week Averages)**

| Nutrient and Energy Allowances | Preschool | Grades K-12 | Optional Grades 7-12 for Enhanced Meal Pattern |
|---|---|---|---|
| Energy Allowances (calories) | 388 | 554 | 618 |
| Total fat | [1] | [1] | [1] |
| Saturated fat | [2] | [2] | [2] |
| Protein (g) | 5 | 10 | 12 |
| Calcium (mg) | 200 | 257 | 300 |
| Iron (mg) | 2.5 | 3.0 | 3.4 |
| Vitamin A (RE) | 113 | 197 | 225 |
| Vitamin C (mg) | 11 | 13 | 14 |

[1] Total fat not to exceed 30 percent of calories
[2] Saturated fat to be less than 10 percent of calories

## Using the Established Grade Groups

For Food-Based Menu Planning, the nutrient standards have been established for the meal patterns. SFAs may not customize the grade grouping or the nutrient standards when using the Food-Based Menu Planning approach but may use an approved modification to age/grade groupings. USDA-approved modifications for the Traditional and Enhanced Food-Based Menu Planning approaches are included below.

State agencies may establish guidelines for using these modifications and may or may not require prior approval. Check with your State agency before implementation.

**Caution: Neither the menu planner nor the State reviewer can customize grade groups or nutrient standards for the grades when using the Food-Based Menu Planning approach.**

Menus must be analyzed according to the grade group(s) used by the SFA for menu planning not by the grades in the review school.

## Modifications Available to Traditional and Enhanced Food-Based Menu Planning

### Modification for the Majority of the Children—for Traditional and Enhanced Food-Based Menu Planning

- **If only one age/grade** is outside the established levels of the grade grouping, an SFA may use both the meal pattern portion sizes and the nutrient standards for the *majority of the children*

  Example: A school has grades K-4. Only one grade (4th) is outside the established grade group of Grades K-3. Since the majority of the children are in Grades K-3, the school may use the meal pattern portion sizes and nutrient standards for Grades K-3 to plan menus for students in Grades K-4.

- **If more than one age/grade group** is outside the established levels of the grade grouping, a SFA must use two meal patterns and nutrient standards. However, the school always has the option of serving Group IV (Grades 4-12) for all students in the school under the Traditonal Menu Planning approach. Although the regulations allow this, from a nutritional perspective, it is not advised. The broader

the range of age/grade groups, the more likely younger children will receive more calories than needed and older children will receive insufficient calories and nutrients.

### Modification for Portion Sizes and Nutrient Levels—for Traditional Food-Based Menu Planning

Schools using the Traditional Food-Based Menu Planning approach may:

1. Use the portion sizes for the meal pattern for Grades 4-12 for children in Grades K-6, and follow the nutrient standards for children in Grades K-6.

2. Use the portion sizes for the meal pattern for Grades 4-12 for children in Grades 7-12, and follow the nutrient standards for children in Grades 7-12.

## Nutrient Standards: NSMP and ANSMP

For NSMP and ANSMP, the menu planner, at a minimum, must use established nutrient standards for grade groupings. However, the menu planner may use the established optional age levels or may customize the age groups to fit the grade groupings of the school district/school. The menu planner must use more than one group for a K-12 building, so the planner cannot simply customize one age group for a K-12 school.

## NSMP and ANSMP: Lunch

Established Grade Groups

- Preschool
- Grades K-6
- Grades 7-12
- Optional Grades K-3

**Minimum Nutrient and Calorie Levels for Established Grade Groups for School Lunches NSMP/ANSMP Approaches (School Week Averages)**

| Nutrient and Energy Allowances | Preschool | Grades K-6 | Grades 7-12 | Optional Grades K-3 |
|---|---|---|---|---|
| Energy Allowances (calories) | 517 | 664 | 825 | 633 |
| Total fat | [1] | [1] | [1] | [1] |
| Saturated fat | [2] | [2] | [2] | [2] |
| Protein (g) | 7 | 10 | 16 | 9 |
| Calcium (mg) | 267 | 286 | 400 | 267 |
| Iron (mg) | 3.3 | 3.5 | 4.5 | 3.3 |
| Vitamin A (RE) | 150 | 224 | 300 | 200 |
| Vitamin C (mg) | 14 | 15 | 18 | 15 |

[1] Total fat not to exceed 30 percent of calories
[2] Saturated fat to be less than 10 percent of calories

## NSMP and ANSMP: Breakfast

Established Grade Groups

- Preschool
- Grades K-12
- Optional Grades 7-12

**Minimum Nutrient and Calorie Levels for Established Grade Groups for School Breakfast NSMP/ANSMP Approaches (School Week Averages)**

| Nutrient and Energy Allowances | Preschool | Grades K-12 | Optional Grades 7-12 |
|---|---|---|---|
| Energy Allowances (calories) | 388 | 554 | 618 |
| Total fat | [1] | [1] | [1] |
| Saturated fat | [2] | [2] | [2] |
| Protein (g) | 5 | 10 | 12 |
| Calcium (mg) | 200 | 257 | 300 |
| Iron (mg) | 2.5 | 3.0 | 3.4 |
| Vitamin A (RE) | 113 | 197 | 225 |
| Vitamin C (mg) | 11 | 13 | 14 |

[1] Total fat not to exceed 30 percent of calories
[2] Saturated fat to be less than 10 percent of calories

## NSMP and ANSMP: Lunch

Established Age Groups (Optional)

For NSMP and ANSMP, schools have the option to provide the calorie and nutrient levels for school lunches and breakfasts for age groups as shown below:

- Ages 3-6
- Ages 7-10
- Ages 11-13
- Ages 14 and older

Minimum Nutrient and Calorie Levels for Established Age Groups (optional) for School Lunches NSMP/ANSMP Approaches (School Week Averages)

| Nutrients and Energy Allowances | Ages 3-6 | Ages 7-10 | Ages 11-13 | Ages 14 and older |
|---|---|---|---|---|
| Energy Allowances (calories) | 558 | 667 | 783 | 846 |
| Total fat | [1] | [1] | [1] | [1] |
| Saturated fat | [2] | [2] | [2] | [2] |
| RDA for Protein (g) | 7.3 | 9.3 | 15.0 | 16.7 |
| RDA for Calcium (mg) | 267 | 267 | 400 | 400 |
| RDA for Iron (mg) | 3.3 | 3.3 | 4.5 | 4.5 |
| RDA for Vitamin A (RE) | 158 | 233 | 300 | 300 |
| RDA for Vitamin C (mg) | 14.6 | 15.0 | 16.7 | 19.2 |

[1] Total fat not to exceed 30 percent of calories
[2] Saturated fat to be less than 10 percent of calories

## NSMP and ANSMP: Breakfast

Established Age Groups (Optional)

- Ages 3-6
- Ages 7-10
- Ages 11-13
- Ages 14 and older

**Minimum Nutrient and Calorie Levels for Established Age Groups (optional) for School Breakfast NSMP/ANSMP Approaches (School Week Averages)**

| Nutrients and Energy Allowances | Ages 3-6 | Ages 7-10 | Ages 11-13 | Ages 14 and older |
|---|---|---|---|---|
| Energy Allowances (calories) | 419 | 500 | 588 | 625 |
| Total fat | [1] | [1] | [1] | [1] |
| Saturated fat | [2] | [2] | [2] | [2] |
| RDA for Protein (g) | 5.50 | 7.0 | 11.25 | 12.50 |
| RDA for Calcium (mg) | 200 | 200 | 300 | 300 |
| RDA for Iron (mg) | 2.5 | 2.5 | 3.4 | 3.4 |
| RDA for Vitamin A (RE) | 119 | 175 | 225 | 225 |
| RDA for Vitamin C (mg) | 11.00 | 11.25 | 12.50 | 14.40 |

[1] Total fat not to exceed 30 percent of calories

[2] Saturated fat to be less than 10 percent of calories

## NSMP and ANSMP: Lunch and Breakfast

Customized Age Groups (Optional)

The option to customize age groups allows the menu planner to develop menus that are more accurately targeted to the nutritional needs of specific groups of children.

Refer to Appendix B for an age to grade comparison chart.

SFAs/schools can create their own customized age groupings and nutrient standards to match the grade structures of the school(s). The menu planner must use more than one group for a K-12 building, so the planner would not simply customize for the grade groupings to fit the school in this case.

For example, schools within a school district, using NSMP/ANSMP, are divided as follows:

- Preschool and kindergarten (Pre-K to K),
- Elementary (Grades 1-6),
- Junior high school (Grades 7-9), and
- High school (Grades 10-12).

The school district can customize age groups as follows:

- Pre-K to K: Create nutrient standards for ages 3 through 5
- Grades 1-6: Create nutrient standards for ages 6 through 11
- Grades 7-9: Create nutrient standards for ages 12 through 14
- Grades 10-12: Create nutrient standards for ages 15 through 17

Remember, in NSMP/ANSMP, the menu planner must use at least two grade or age groups when planning lunches for students in Grades K-12.

USDA-approved software will calculate the nutrient standards for breakfast and lunch for the customized age groups. By customizing these standards, the menu planner can plan meals to better meet the nutrient needs of students.

## Modifications of Nutrient Standards for the Majority of Children – for NSMP/ANSMP

Not all schools  grade structures will match the nutrient standard for the established grade or age groups.

- **If only one age/grade** is outside the established levels, an SFA may use the nutrient standard levels for the majority of children.

- **When more than one grade or age** is outside of the established levels, the menu planner must use two grade or age groups.

Examples:
Grade groupings for Lunch:

- May use **one** grade group to plan meals for:
  - Grades K—4 ➢ May use K—3
  - Grades 6—9 ➢ May use 7—12

- At a minimum, use **two** grade groups to plan meals for:
  - Grades K—8 ➢ Use K—6 and 7—12
  - Grades 5—8 ➢ Use K—6 and 7—12