

## Procedures for Determining Equivalent Meat/Meat Alternates

The unit of measure for the meat/meat alternate component is "oz equivalents." To be CN labeled, a serving of a product must provide a minimum of 0.50 oz equivalent meat/meat alternate and credit must be expressed in 0.25-oz increments. Any of the following can contribute to the meat/meat alternate component of the Child Nutrition meal pattern requirements: lean meat, poultry, fish, cheese, cheese substitutes, eggs, cooked dry beans and peas, alternate protein product, peanut butter, or any combination of these. Enriched macaroni with fortified protein when made and used according to USDA regulations can also be used to meet part of the meat/meat alternate component. Additional information on use of enriched macaroni with fortified protein products is available from the Child Nutrition Division, FNS, USDA, 3101 Park Center Drive, Room 632, Alexandria, VA 22302.

There are four general steps used in determining the total ounces of equivalent meat/meat alternate in a serving of a product:

Step 1: Determine which allowable meat/meat alternates are used in the product being labeled

Step 2: Calculate the oz equivalent meat/meat alternate in each category. (Procedures for determining this are on the following pages.)

Step 3: Total the oz equivalent meat/meat alternate calculated under each category

Step 4: Round down to the nearest 0.25 oz equivalent meat/meat alternate.

### Calculating the Contribution of Meat

1. Multiply the raw serving size (in ounces) by the percent of meat in the raw formula:

$$\text{oz raw serving size} \times \% \text{ raw meat} = \text{oz raw meat/serving}$$

2. Multiply the ounce raw meat/serving by the cooking yield<sup>5</sup> as stated in the Food Buying Guide:

$$\text{oz raw meat/serving} \times \text{FBG cooking yield}^5 = \text{oz equivalent meat/serving}$$

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<sup>5</sup> See Pages 24 through 27 for FBG cooking yields of selected meat products.

## Calculating the Contribution of Alternate Protein Product (APP)

Before starting the calculation, check to make sure that the APP documentation attached with your application shows that the APP you are using meets ALL of the following criteria:

- a) A statement that the APP meets the requirements found in Appendix A of 7 CFR Parts 210, 220, 225, and 226.
- b) Show that the product has been processed so that some portion of the nonprotein constituents has been removed.
- c) Provide the Protein Digestibility Corrected Amino Acid Score (PDCAAS). The PDCAAS is required to be greater than 80 percent of casein. You may be required to show how the PDCAAS was determined.
- d) Show that the protein level of the APP is at least 18 percent by weight when fully hydrated or formulated. (Show the ratio of dry APP to water to provide a product hydrated to 18 percent protein.)
- e) Provide the protein level of the APP on an "as-is" basis for the as-purchased product. Protein is often provided on a moisture free basis "mfb" which is not the information FNS requires.

### Calculate the contribution of alternate protein products as follows:

1. Multiply the raw serving size (in ounces) by the percent of dry alternate protein product to obtain the ounces of dry alternate protein product per portion:

$$\text{oz raw serving} \times \% \text{ dry APP} = \text{oz dry APP/serving}$$

2. Divide the percent protein on an as-is basis (from documentation) by 18 to determine the hydration factor to fully hydrate the APP to 18 percent protein:

$$\frac{\% \text{ as-is protein}^6 \text{ of dry alternate protein product}}{18\% \text{ minimum protein}^7} = \text{hydration factor}$$

3. Multiply the ounces of dry alternate protein product per serving by the hydration factor to obtain the unrounded ounces equivalent meat alternate per serving:

$$\text{oz dry APP/serving} \times \text{hydration factor} = \text{oz unrounded equivalent meat alternate/serving}$$

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<sup>6</sup> As-is/as-purchased; including added flavors, colors, or other added substances.

<sup>7</sup> The regulations provided for appropriate hydration of alternate protein products by setting quantity requirements for a product when hydrated at 18 percent by weight.

4. Round down to the nearest 0.25 oz equivalent meat alternate per serving.  
**NOTE:** You can determine the ratio of dry APP to liquid (allowed for full hydration) by using the following formula:

a. 
$$\frac{\% \text{ as-is protein in dry alternate protein product}}{18\% \text{ minimum protein}} = \frac{\text{total parts hydrated product}}{\text{product}}$$

b. 
$$\text{total parts hydrated product} \text{ MINUS } 1 \text{ part APP} = \text{parts liquid allowed for full hydration}$$

c. The ratio allowed for full hydration is:

“1 part dry APP” : “total parts hydrated product – 1”

To obtain the percent of water allowed for full hydration, multiply the percent of dry APP in the formula by the parts liquid for full hydration:

$$\% \text{ APP} \times \text{parts liquid for full hydration} = x^8 \text{ (total percentage of liquid allowed for full hydration)}$$

### Calculating the Contribution of Dry Beans or Peas

1. Multiply the raw serving size<sup>9</sup> (in ounces) by the percent of dry beans or peas in the raw formula:

$$\text{oz raw serving} \times \% \text{ dry beans} = \text{oz dry beans/serving}$$

2. Convert the ounce dry beans per serving to pound dry beans/serving by dividing by 16 ounces/pound:

$$\text{oz dry beans/serving} \div 16 \text{ oz/lb} = \text{lb dry beans/serving}$$

3. Multiply the pound dry beans per serving by the number of 1/4-cup servings per purchase unit. (e.g., 1 pound as purchased = 21.0 1/4-cup servings cooked dried pinto beans = FBG yield). 1/4 cup cooked dry beans = 1.00 oz equivalent meat alternate:

$$\frac{\text{lb dry pinto beans/serving}}{\text{servings/lb}} \times 21.0 \text{ 1/4-cup servings/lb} = \text{No. 1/4-cup servings cooked dry pinto beans or oz equivalent meat}$$

<sup>8</sup> The percentage of liquid in the formula in excess of “x” will not be given credit toward the meal pattern requirement.

<sup>9</sup> For cooked products, determine the ounce raw serving by dividing the following: oz cooked serving ÷ manufacturer’s maximum cooking yield. The manufacturer’s maximum yield is based on cooking tests performed in the manufacturer’s plant and reflects the cooking yield for the total product including beans, spices, water, etc.

- alternate/serving
4. Round down to the nearest 1/8 cup or 0.25 oz.

**NOTE:** Cooked dried beans or peas may count as a meat alternate or a vegetable, but not as both components in the same product.

### Calculating the Contribution of Dry Beans or Peas, Canned

1. Multiply the raw serving size (in ounces) by the percent canned dry beans or peas in the raw formula:

$$\text{oz raw serving size} \times \% \text{ canned beans} = \text{oz canned beans/serving}$$

2. Divide the ounce canned beans/serving by the numbers of ounces in the size can you are using (e.g., a No. 10 can of pinto beans = 108 oz):

$$\text{oz canned beans/serving} \div 108 \text{ oz/can} = \text{the portion (\%)} \text{ of pinto beans/No. 10 can used}$$

3. Multiply the portion (%) of beans per can used by the number of 1/4-cup servings per purchase unit (e.g., No. 10 can pinto beans provides 37.2 1/4-cup servings heated, drained pinto beans - FBG yield):

$$\begin{array}{l} \% \text{ beans/} \\ \text{can used} \end{array} \times \begin{array}{l} 37.2 \text{ 1/4-cup} \\ \text{servings/} \\ 108 \text{ oz can} \end{array} = \begin{array}{l} \text{No. 1/4 cup servings cooked dry pinto beans} \\ \text{or oz equivalent meat alternate/serving} \end{array}$$

### Calculating the Contribution of Cheese/Cheese Substitutes

"Cheese Substitute" must meet the FDA standard for substitute foods. The standard requires that a cheese substitute is not nutritionally inferior to the cheese for which it is substituting. Any item labeled as imitation cheese or cheese product is not in the above category, and is **not** credited in the Meal Pattern Requirements.

1. Multiply the raw serving size (in ounces) by the percent of each cheese or cheese substitute to determine the ounce of meat alternate per serving:

$$\text{oz raw serving} \times \begin{array}{l} \% \text{ cheese/} \\ \text{cheese} \\ \text{substitute} \end{array} = \begin{array}{l} \text{oz cheese/cheese substitute per serving} \\ \text{or oz equivalent meat alternate/serving} \end{array}$$

**NOTE:** Cheese and Cheese Substitutes are calculated based on a 100-percent yield. The credit for cottage cheese, ricotta cheese, cheese food, cheese spread, and their substitutes are calculated based on a 50-percent yield.

### **Calculating the Contribution of Dried Whole Eggs**

1. Multiply the raw serving size (in ounces) by the percent of dried whole eggs in the formula to obtain the ounces of available dried whole eggs:

$$\text{oz raw serving} \times \% \text{ dried whole eggs} = \text{oz dried whole eggs/serving}$$

2. Convert ounce dried whole eggs per serving to pound dried whole eggs/serving by dividing by 16 ounces per pound:

$$\text{oz dried whole eggs/serving} \div 16 \text{ oz/lb} = \text{lb dried whole eggs/serving}$$

3. Multiply the pound dried whole eggs per serving by the servings per pound as found in the FBG (one pound dried whole eggs = 32 large eggs or 64 ounces equivalent meat alternate):

$$1\text{lb dried whole eggs/serving} \times 64 = \text{oz equivalent meat alternate/serving}$$

### **Calculating the Contribution of Frozen Whole Eggs**

1. Multiply the raw serving size (in ounces) by the percent of frozen whole eggs in the formula to obtain the ounce available frozen whole eggs per serving:

$$\text{oz raw serving} \times \% \text{ frozen whole eggs} = \text{oz frozen whole eggs/serving}$$

2. Convert ounce frozen whole eggs per serving to pound frozen whole eggs per serving by dividing by 16 ounces per pound:

$$\text{oz frozen whole eggs/serving} \div 16 \text{ oz/lb} = \text{lb frozen whole eggs/serving}$$

3. Multiply the pound frozen whole eggs per serving by the servings per pound as found in the FBG (one pound frozen whole eggs = 9.00 large eggs or 18 ounces equivalent meat alternate):

$$1\text{lb frozen whole eggs/serving} \times 18 = \text{oz equivalent meat alternate/serving}$$