Navigating the Maize: Making Sense of the Vegetable Subgroups

Beth Fitzsimmons, MS, RDN
Illinois State Board of Education
Agenda

- Background information
- Meal pattern requirements
- Vegetable subgroup specifics
- Scenario activity
Background

- Current vegetable subgroup categories come from the 2010 Dietary Guidelines for Americans
- The vegetable subgroups became effective July 1, 2012\(^1\)
- The vegetable subgroups, when incorporated into a healthy diet, provide 3 major benefits:
  - Contain numerous vitamins and minerals
  - Correlate with reduced risk of certain chronic diseases
  - Provide fewer calories than many other food items\(^2\)
## NSLP Meal Pattern Requirements

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**NSLP Meal Pattern Requirements**

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- “Other” vegetables refer to those that do not meet the classification standards to fall into the dark green, red/orange, beans/peas, or starchy subgroups.
- For the NSLP, the “other” vegetables requirement can be met with additional amounts of dark green, red/orange, and beans/peas.
  - Starchy vegetables cannot be used to meet “other” vegetable requirements.
NSLP Meal Pattern Requirements

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- “Additional” vegetables refer to those that are needed to meet the total vegetable requirements
- Between dark green, red/orange, beans/peas, starchy, and “other” vegetable weekly requirements for each grade group, that adds up to:
  - 2.75 cups for K-5 (3.75 total cups required)
  - 2.75 cups for 6-8 (3.75 total cups required)
  - 3.5 cups for 9-12 (5 total cups required)
- Any vegetable subgroup can be offered to meet the total weekly vegetable requirement\(^3\)
SBP Meal Pattern Requirements

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<tr>
<td>Fruit</td>
<td>5 cups (1)</td>
<td>5 cups (1)</td>
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<tr>
<td>Vegetables</td>
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<td>0</td>
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- Vegetables can be substituted to meet the weekly fruit requirements in the SBP

- If substituting vegetables for fruits, the first two cups each week must come from the following subgroups:
  - Dark green
  - Red/orange
  - Beans/peas (legumes)
  - “Other”
  - Starchy vegetables cannot be credited within the first 2 cups of fruit substitutions each week³
Crediting

• All vegetables are credited based on their volume as served
  – Exceptions: raw leafy greens and tomato paste and puree
• The minimum amount of any vegetable that can credit towards daily or weekly totals is 1/8 cup
• ½ cup serving of vegetables or fruit is required for a reimbursable meal under Offer vs Serve
• No more than half of the weekly amount of vegetables can come from juice
  – Must be 100% vegetable juice
Crediting

• Raw leafy vegetables only credit as half the amount served
  – 1 cup of romaine lettuce credits as ½ cup
  – ½ cup cooked spinach credits as ½ cup

• Tomato paste is credited as twice the amount served
  – 1/16 cup of tomato paste credits as 1/8 cup
Crediting

- **Food items that cannot** be credited towards vegetable meal pattern requirements:
  - Snack-type foods made from vegetables, such as potato chips
  - Pickle relish, jam, or jelly
  - Tomato catsup and chili sauce (tomato paste in chili is creditable)
  - Home canned products
  - Dehydrated vegetables used for seasoning

\(^5\)
## Breaking Down the Subgroups

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Dark Green

- All fresh, frozen, and canned dark-green leafy vegetables and broccoli, cooked or raw

- Broccoli
- Spinach
- Romaine
- Collard, turnip, mustard greens
- Kale
- Bok Choy

2

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Whole Child ● Whole School ● Whole Community
Benefits

• Provide the most vitamin K out of all the vegetable subgroups\(^7\)
  – Helps blood clot during bleeding\(^8\)

• Dark green, leafy vegetables are a good source of folate
  – Sufficient folate intake during pregnancy is associated with reduced instances of neural tube defects\(^2\)
  – Supports red blood cell formation and overall cell growth/function\(^8\)

• Many dark green vegetables contain the phytonutrient lutein
  – Promotes eye and heart health and helps protect against cancer

• Beta-carotene is a phytonutrient found in dark green, leafy vegetables, like spinach and kale
  – Helps improve the immune system, vision, and skin and bone health\(^9\)
## Breaking Down the Subgroups

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Red/Orange

- All fresh, frozen, and canned red and orange vegetables, cooked or raw^2

- Tomatoes
- Sweet Potatoes
- Pumpkin
- Acorn Squash
- Red Peppers
- Carrots^6
Benefits

• Provide the most vitamin A out of all the vegetable subgroups\(^7\)
  – Plays an important role in eyesight
  – Helps keep the immune system strong
  – Promotes healthy skin\(^8\)

• Many orange vegetables, like carrots and sweet potatoes, also contain the phytonutrient beta-carotene

• Certain red vegetables, like tomatoes and red peppers, contain a phytonutrient called lycopene
  – Protects against prostate cancer and heart disease\(^9\)
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Beans & Peas (Legumes)

- Dry/mature beans and peas

- Black Beans
- Black-eyed Peas (mature, dry)
- Garbanzo Beans (chickpeas)
- Kidney Beans
- Lentils
- Pinto Beans
- Soy Beans
- White beans
- Navy Beans
Beans & Peas (Legumes)

• Dry/mature beans and peas may be offered as either a meat alternate or as a vegetable

• Edamame (immature soybeans) are the only example of beans that are creditable as if they are dry, mature beans/peas

• Peanuts and peanut butter do not count as legumes – they are considered meat/meat alternates\(^1\)
Benefits

• Provide the most dietary fiber out of all the vegetable subgroups\(^7\)
  – Can help lower cholesterol levels
  – Can help control blood sugar levels\(^10\)
  – Promotes bowel regularity

• Contain protein, which promotes satiety\(^10\)
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Starchy

- All fresh, frozen, and canned starchy vegetables$^2$

- Corn
- Green Peas
- White Potatoes
- Green Lima Beans
- Water Chestnuts
- Black-eyed Peas (not dry)$^3$
Benefits

• Provide the most potassium out of all the vegetable subgroups\(^7\)
  – Can help lower blood pressure
  – Reduce the risk of developing kidney stones
  – Decrease bone loss\(^2\)

• Provide fiber\(^{10}\)
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Other

- All other fresh, frozen, and canned vegetables, cooked or raw
Benefits

Mushrooms
- Contain niacin and riboflavin
- Riboflavin helps the body metabolize other B vitamins
- Niacin helps the body use nutrients to produce energy

Green Peppers
- Contain vitamin C
- Promotes gum health and a healthy immune system
- Helps heal wounds

Avocados
- Good source of vitamin E, which is an antioxidant
- Promotes a healthy immune system
- Helps fight cell damage
Scenario activity!
Scenario 1

Q: Mary has an excess of black beans in her inventory. In order to move more beans, she plans to serve an extra large portion of black beans so that the beans can count as both a vegetable and a meat/meat alternate during lunch. Will this meet the vegetable and meat/meat alternate meal pattern requirements?
Scenario 1

Q: Mary has an excess of black beans in her inventory. In order to move more beans, she plans to serve an extra large portion of black beans so that the beans can count as both a vegetable and a meat/meat alternate during lunch. Will this meet the vegetable and meat/meat alternate meal pattern requirements?

A: While beans can be served as both a meat/meat alternate and a vegetable during the same meal, this scenario does not meet meal pattern requirements. In order to be counted as a meat/meat alternate and a vegetable, the beans must be contained in 2 distinct dishes. For example, legumes may be offered as part of a salad (vegetable) and as part of a chili/bean soup (meat alternate). Another example would be a black bean burger (meat alternate) with hummus and veggie sticks (vegetable).
Scenario 2

Q: Tom has noticed that vegetable sales increase when 2 different options are offered to the students during lunch. He wants to test if mixed vegetables will sell as well as having 2 different options, so he plans on incorporating a mixed vegetable dish as part of next week’s menu. How should Tom credit the mixed vegetable dish?
Scenario 2

**Q:** Tom has noticed that vegetable sales increase when 2 different options are offered to the students during lunch. He wants to test if mixed vegetables will sell as well as having 2 different options, so he plans on incorporating a mixed vegetable dish as part of next week’s menu. How should Tom credit the mixed vegetable dish?

**A:** Since both vegetables are part of the red/orange subgroup, Tom can credit the mixed vegetable dish as the volume served and count it towards the weekly red/orange subgroup requirements.
Scenario 3

**Q:** The following week, Tom wants to serve a mixed vegetable dish containing broccoli, carrots, and cauliflower. How should he credit this mixture?
Scenario 3

Q: The following week, Tom wants to serve a mixed vegetable dish containing broccoli, carrots, and cauliflower. How should he credit this mixture?

A: In this scenario, crediting depends on the amount of each vegetable present in the mixed dish. Remember, the minimum amount of any vegetable that can credit towards daily or weekly totals is 1/8 cup.

E: If Tom’s dish contains 0.25 cups of each vegetable, then he can count 0.25 cups toward the weekly dark green, red/orange, and “other” subgroup requirements.

E: If Tom’s dish contains 0.25 cups broccoli, 0.25 cups cauliflower, and less than 1/8 cup carrots, then the carrots cannot be credited. The broccoli and cauliflower can each be credited toward their respective subgroups as well as the daily vegetable requirement.

E: If Tom does not know the amount of each vegetable in his mixture (and it is not specified on the label), the vegetable mixture can count as “additional vegetables”
Scenario 4

Q: The foodservice at Blue Pond High School has recently received equipment that allows them to incorporate a salad bar into the NSLP. Lori, the foodservice director, plans to incorporate a wide variety of vegetables on the salad bar each day that meet the weekly vegetable subgroup requirements. How can she be sure that students are receiving the appropriate amount of vegetables to meet the quantity requirements?
Scenario 4

**Q:** The foodservice at Blue Pond High School has recently received equipment that allows them to incorporate a salad bar into the NSLP. Lori, the foodservice director, plans to incorporate a wide variety of vegetables on the salad bar each day that meet the weekly vegetable subgroup requirements. How can she be sure that students are receiving the appropriate amount of vegetables to meet the quantity requirements?

**A:** There are several ways foodservice staff can ensure students are taking appropriate portion sizes: 1) use specific serving size utensils (not required), 2) pre-portion/package items available on the salad bar, and 3) train cashiers to visually identify the correct portions.
Scenario 5

Q: Stan has noticed vegetable sales have decreased on the days that beans are served. In order to increase student consumption of beans, he wants to add pureed white beans into the macaroni and cheese. How should Stan credit the beans?
Scenario 5

**Q:** Stan has noticed vegetable sales have decreased on the days that beans are served. In order to increase student consumption of beans, he wants to add pureed white beans into the macaroni and cheese. How should Stan credit the beans?

**A:** The beans can be credited one of two ways: 1) The beans can be credited towards the beans/peas subgroup if there is an identifiable vegetable present in the dish, such as broccoli florets or 2) the beans can be credited as a meat alternate due to the recognizable cheese (also a meat alternate) in the dish. Serving identifiable vegetables encourages students to both recognize and increase consumption of vegetables. Remember: the minimum amount of vegetables that count towards meal pattern requirements is 1/8 cup.
Scenario 6

Q: The students liked the addition of pureed beans in the macaroni and cheese so much that Stan now wants to add pureed black beans into the brownies. How should Stan credit the pureed black beans?
Scenario 6

Q: The students liked the addition of pureed beans in the macaroni and cheese so much that Stan now wants to add pureed black beans into the brownies. How should Stan credit the pureed black beans?

A: Stan should not credit the beans! While adding the beans would make the brownies more nutritious, they cannot be counted towards the requirements because brownies are considered a dessert item and do not serve as part of the meal pattern.
Next Steps

1. Review Resources
2. Plan Menus
3. Choose Products
4. Serve Meals!
Thank you!
Resources


3. “Nutrition Standards in the National School Lunch and School Breakfast Programs; Final Rule.” 77 *Federal Register* 17 (26 Jan 2012). ([7 CFR Parts 210 and 220])


