

USDA Nutrition Standards



Nutrition and the Vegetable Sub Groups



USDA Nutrition Standards

Vegetable Subgroups

Overall Objectives

- **Module 1:** Vegetable Sub Group recommendations from the *2015 Dietary Guidelines for Americans* (DGA) and the USDA National School Lunch Program (NSLP)
- Nutrients in Vegetable Subgroups
- **Module 2:** Vegetable Logistics: Receiving and Storing
- **Module 3:** Implementing and Promoting vegetables in NSLP: Menu Planning and Record Keeping, Salad and Theme Bars, and Presentation
- **Module 4:** Cooking Vegetables for Optimal Nutrition: Moist-Heat and Dry-Heat





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Module 1 Objectives

- Vegetable Sub Group recommendations from the 2015 *Dietary Guidelines for Americans* (DGA) and the USDA National School Lunch Program (NSLP)
- Nutrients in Vegetable Subgroups



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Vegetable Subgroups

Vegetable Sub Groups

- Vegetable sub group recommendations are the same from the 2015 DGA and the NSLP including a variety from all of the five vegetable subgroups:
 - **Dark Green**
 - **Red/Orange**
 - **Beans/Peas**
 - **Starchy**
 - **Other**





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Nutrients in Vegetables

Vegetables are nutrient powerhouses that are **low in calories and full of fiber**, which expand in the digestive tract and sends the "I'm satisfied and full" signal to your brain. As a result, you get full on fewer calories, and consume many **important vitamins and minerals** including: potassium, vitamin A, vitamin C, vitamin K, copper, magnesium, vitamin E, vitamin B6, folate iron, manganese, thiamin, niacin, and choline.





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Why are vegetable sub groups so important?

- o Those who choose a variety of colorful vegetables on a weekly basis are potentially benefiting their health by consuming a variety of nutrients that are found in the various colorful vegetables





USDA NSLP Nutrition Standards:

Vegetable Daily Minimums

- **Lunch Vegetable:** Offer a Daily Minimum*
 - K-8: $\frac{3}{4}$ cup per day
 - 9-12: 1 cup per day
- **Each subgroup to be offered each week**
 - K-8: $\frac{1}{2}$ cup all except $\frac{3}{4}$ cup Red/Orange
 - 9-12: $\frac{1}{2}$ cup all except 1 $\frac{1}{4}$ cup red Orange, and $\frac{3}{4}$ cup other

*To learn more about how many and how much weekly vegetable requirements need to be offered for Offer vs Serve, visit our *Offer vs Serve Training* and the SDE webpage at:

<http://www.sde.idaho.gov/cnp/sch-mp/guide.html>



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Vegetable
Subgroups

Dark Green Vegetables

Dark green vegetables are the lowest in calories and among the highest in nutrients. They're brimming with vitamins C, E, and K; vitamin A as beta-carotene; several B vitamins including folate, which helps prevent certain birth defects; and magnesium. Some offer bone-building calcium as well. Those in the dark green subcategory -- unfortunately are also those that Americans are least likely to consume.





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Dark Green Vegetables

- Arugula
- Broccoli
- Spinach
- Bok Choy/Chinese Cabbage
- Romaine Lettuce
- Other Dark Green Leafy Vegetables
- Kale
- Swiss chard





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Red/Orange Vegetables

Orange vegetables are great sources of vitamin A as beta-carotene, a powerful cell-protecting antioxidant. The body turns beta-carotene into vitamin A, which plays a role in healthy eyes, skin, and bones. Orange vegetables are commonly eaten thanks to carrots, but others in this group include sweet potatoes, tomatoes, yams, winter squash, and pumpkin.



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Red/Orange Vegetables

- Carrots
- Sweet Potato
- Pumpkin
- Winter Squash
- Butternut Squash
- Salsa
- Tomatoes
- Red Peppers
- Orange Peppers
- Yams





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Legume Vegetables

Legumes are fiber-rich and a good protein source. But when you eat legumes, count them only as vegetable or protein, not both. Legumes are packed with fiber, particularly soluble fiber -- the kind that helps your body get rid of artery-clogging cholesterol. But it also contains insoluble fiber, the kind that swells and keeps you feeling fuller, longer. Legumes provide iron and magnesium, too -- minerals that are often in short supply.





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Legume Vegetable

- Pintos/Refried Beans
- Garbanzo/Chickpea
- Lentils
- Split Pea
- Refried Beans
- Kidney Beans
- Black Beans
- Navy Bean
- Other Mature legume seeds
- Soy Beans/Edamame





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Starchy Vegetables

Starchy vegetables are a good source of carbohydrate that your body needs to make energy. Starchy vegetables have relatively fewer calories compared to other foods. They contain good amounts of potassium and fiber, too. Diets rich in potassium may help to maintain healthy blood pressure.



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Starchy Vegetables

- White Potatoes
- Corn
- Green Peas
- Plantains
- Parsnips
- Jicama
- Green Lima Beans
- Water chestnuts





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Other Vegetables

All the other vegetables, which don't fit into one of the above subgroups, add a great variety of tastes, textures, and colors to our eating routine. Eat a wide variety of them to get an abundance of different nutrients as well as potassium and fiber, which are found in all vegetables.



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Vegetable
Subgroups

Other Vegetables

- Asparagus
- Beets
- Brussels sprouts
- Cabbage
- Cauliflower
- Celery
- Cucumber
- Eggplant
- Green Beans
- Iceberg lettuce
- Mushrooms
- Onions
- Snap peas
- Green peppers
- Radish
- Zucchini/summer squash





Vegetable Logistics

Module 2 Objectives

- Vegetable Logistics
 - Receiving
 - Storing





Storing Produce

- Mark Date Received for all produce
 - Extra care for leafy greens
 - Use FIFO (First-In, First-Out) storing method
- Do NOT wash before storing
- DO wash before preparation
- Cross contamination– never store under things that may leak or drip
 - Cooler fans
 - Meat, poultry



Storing

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Vegetable
Subgroups

- Fruits and vegetables that produce ethylene gas should be separated from those that are sensitive to ethylene (see the next slide for a list)
- Fruits and vegetables that give off odors should be stored separately in plastic bags or outside of the refrigerator
- Remember, cold storage is <41 degrees and **cool storage is 60-70° F degrees**





Storing

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- Ethylene Gas
 - Producers: Mango, kiwi, cantaloupe
 - Sensitive: lettuce, carrots, cauliflower
 - Not affected: grapes, corn
- Odors
 - Onions, garlic, shallots, green onion
 - Store in closed plastic if in cold storage – short term
- Cold Storage: <41 degrees
- Cool Storage: 60-70 degrees



Storing

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Vegetable
Subgroups

Refrigerate these gas releasers:

- Apples
- Apricots
- Cantaloupe
- Figs
- Honeydew

Don't refrigerate these gas releasers:

- Avocados
- Bananas, unripe
- Nectarines
- Peaches
- Pears
- Plums
- Tomatoes



Keep these away from all gas releasers:

- Bananas, ripe
- Broccoli
- Brussels sprouts
- Cabbage
- Carrots
- Cauliflower
- Cucumbers
- Eggplant
- Lettuce and other leafy greens
- Parsley
- Peas
- Peppers
- Squash
- Sweet potatoes
- Watermelon



Implementing and Promoting Vegetables

Module 3 Objectives

- Implementing and Promoting vegetables in NSLP
 - Menu Planning
 - Record Keeping
 - Salad and Theme Bars
 - Presentation



Implementing and Promoting Vegetables

Vegetable
Subgroups

Menu Planning

- A variety of vegetables in school meals should reflect all the colors of the rainbow
- Introduce new and unique vegetables
- Include vegetables as part of the main entrée
- Add seasonal and local vegetables
- Use Smarter Lunchroom techniques that *Promote Vegetables and Salads*
 - See the trainings on Smarter Lunchrooms for more information



Implementing and Promoting Vegetables

Vegetable
Subgroups

Subgroups Record Keeping

- Production records are required to keep track of all foods being prepared, offered, and served
- Some schools use an additional chart as a checkoff to be sure that all vegetable subgroups have been offered and served on a weekly basis (see table on the next slide – Note, this is an *optional* chart)



Implementing and Promoting Vegetables

Vegetable Subgroups

Promoting Vegetables to Students

- There are various ways to encourage students to choose more vegetables:
 - Expose them to new vegetables and name them kid friendly names
 - Provide salad bars and/or theme bars
 - Feature a vegetable each month
 - Harvest of the Month, Farm to School
 - Focus on the colors and seasonal vegetables that have visual appeal, contrasting colors, fun shapes



Implementing and Promoting Vegetables

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Salad Bars Promote Vegetables



<http://www.saladbars2schools.org/>



Implementing and Promoting Vegetables

Salad Bars and Theme Bars

- Seasonal vegetables – farmers' market
- Baked potato bar with three bean chili
- Legume taco bar with taco flavored lentils, black beans, and garbanzo beans as meat alternate
- Sandwich bar with various vegetable toppings: cucumber slices, green, yellow, and red pepper rings, spinach, thinly sliced onions, tomato slices, sliced mushrooms, and fresh herbs



Implementing and Promoting Vegetables

Vegetable
Subgroups

Make Presentation Fun!

- PRESENTATION!
 - Make Food Fun!
 - Visual appeal
 - Use contrasting colors
- Make fruits and vegetables the highlight of the menu



Bonneville Child
Nutrition
Facebook
4/21/2016



Implementing and Promoting Vegetables

Tips for Promoting Vegetables

- Include Parents, Teachers, Administrators
- Promote daily menu during morning announcements
- Advertise menus in the classrooms, hallways, and lunchroom
- Get your staff excited about fruits and veggies, and your students will be next



Tips for Promoting Vegetables

- Pre-plate mainline menu so students can visualize their meal
- Make fruits and vegetables the most attractive items on the serving line
 - Place fruits and vegetables first on the serving line, before the main entrée
 - Garnish the fruits and vegetables
 - Pre-Portion in plastic soufflé cups
 - Use signs or pictures on the lunch line to draw attention to the fruits and vegetables
 - Mark healthier menu items, such as fruits and veggies, with a symbol
 - Use descriptive language on the menus to make fruits and vegetables more appetizing



Implementing and Promoting Vegetables

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Verbal Ques

- Foodservice staff ALWAYS offer the fruit and vegetable to students
- Customer Friendly phrasing
 - “Your meal comes with a fruit and a vegetable, would you like to try the ___?”
- How many more students would take fruits and vegetables if they were verbally offered to them every day?





Implementing and Promoting Vegetables

Ques

- Packaging
 - Prepackaged salads- Grab and go
 - Plastic soufflé cups
 - Arrange fruits and vegetables with contrasting colors
 - Layer different colors of canned fruits in clear soufflé cups
 - Add fresh fruit to canned fruits, such as strawberries or grapes to canned peaches
 - Pre-portion a variety of dips
 - Low-fat Ranch
 - Hummus
 - Salsa
 - Peanut butter



Implementing and Promoting Vegetables

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What is going on in your school?

- Any other ideas to promote, market, or present fruits and vegetables?
- What are you currently doing in your school?
 - What has worked?
 - What hasn't worked?



Gooding
School
District



Promoting³ Veggies

Most Importantly, Make Food Fun!

- Here is what is going on in other schools:



*Vegetable
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Provo Utah
Facebook
4/12/2016

Vegetable
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Wilder School
District
10/23/2015





Cooking Vegetables

Module 4 Objectives

- Cooking Vegetables for Optimal Nutrition
 - Moist-Heat
 - Dry-Heat





Cooking Vegetables

Preserve Vitamins in Vegetables

- Understanding proper preparation and cooking techniques can be important to preserve the vitamins in the vegetables





Cooking Vegetables

Moist-Heat Cooking Definitions

- **Blanch**: to cook an item partially and very briefly, usually in water
 - Place the item in rapidly boiling water and return the water to the boil. Remove the item and cool in cold water
- **Steam**: to cook foods by exposing them directly to steam
 - Usually done in special steam cookers or on a rack above boiling water

Resource: Professional Cooking, 5th Edition, Wayne Gisslen.
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Cooking Vegetables

Dry-Heat Cooking Definitions

- **Roast**: to cook foods by surrounding them with hot, dry air, in an oven or on a spit over an open fire
- **Sauté**: to cook quickly in a small amount of fat
 - Preheat the pan before adding the food to be sautéed. The food must start cooking at high heat or be crowded in the pan, or it will begin to simmer in its own juices

Resource: Professional Cooking, 5th Edition, Wayne Gisslen.
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Cooking Vegetables

Washing Produce

- The main goal when preparing vegetables is to maintain quality and nutrients
- Wash fresh produce right before using, not before storing

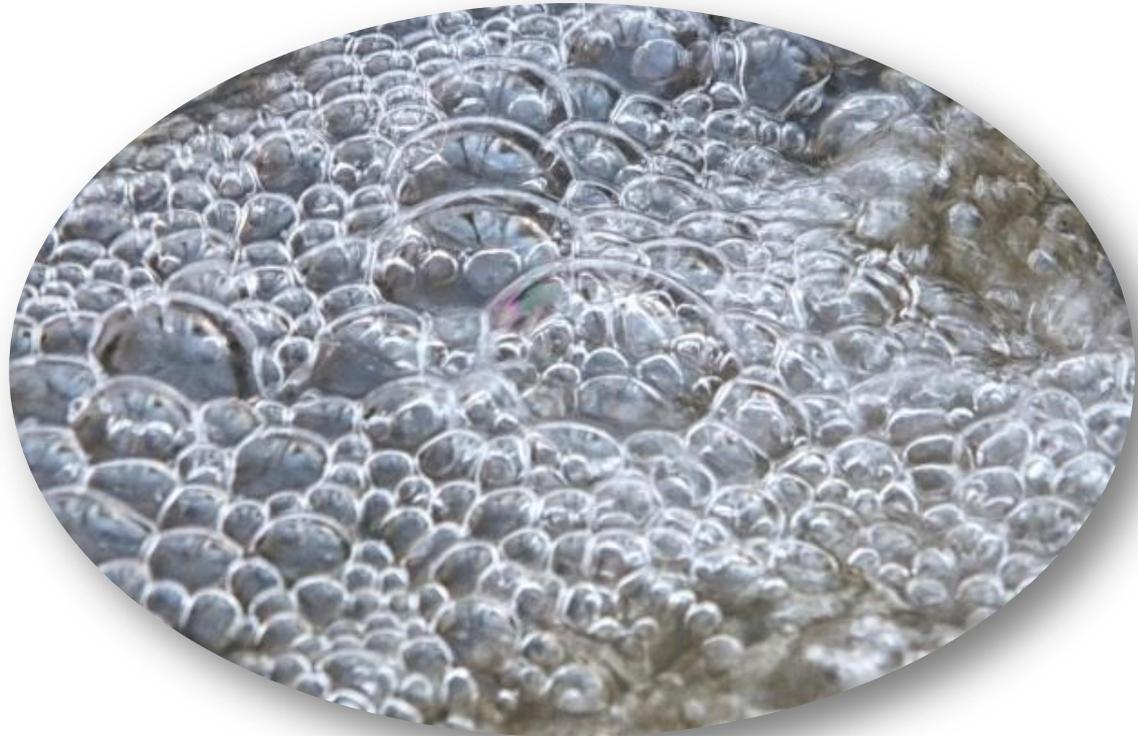




Cooking Vegetables

Cooking to Preserve Nutrients

- When cooking vegetables, vitamins can be destroyed by two sources:
 - Water
 - Heat





Cooking Vegetables

Moist-Heat Cooking and Nutrients

- Vegetables contain many vitamins that are water-soluble (usually vitamin C and B vitamins), which means that they can dissolve in water
- If you cook vegetables in water, some of the vitamins leak into the water and go down the drain when you throw out the cooking water





Cooking Vegetables

Tips for Moist-Heat Cooking

- Use cooking methods such as **blanching** and **steaming**
- Do not overcook vegetables
- Drain well so that hot water does not continue to cook vegetables during storage
- Steam for the least amount of time to reach tender crisp/brightly colored
- Use a lid to hold in steam to cook faster
- Do not add baking soda to vegetables to retain color, it destroys vitamins





Cooking Vegetables

Tips for Dry-Heat Cooking

- Use cooking methods such as **roasting** and **sautéing**
- Toss with minimal fat (as indicated in your standardized recipe), such as USDA Food Vegetable Oil
- Cook on high heat and turn vegetables during cooking to brown on all sides to create an enhanced caramelized flavor
- Do not overcook or overexpose to heat





Cooking Vegetables

Tips for Dry-Heat Cooking

- Scrub the skin and leave it on when possible
 - Cook with the skin on whenever possible
- If you must peel, peel thinly
- Do not overcrowd vegetables in roasting pan or they will steam from their own liquid
- Keep temperatures high
- Roasting and sautéing enhance the flavor of vegetables





Cooking Vegetables

Cooking Tips for Preserving Nutrients

- Cutting vegetables into larger pieces reduces the surface area of the vegetable that will be exposed to heat and water
- Cook in small amounts of water to no water with short cooking times, such as: blanching, steaming, and roasting
- Cook vegetables to be serve just in time or with short heat holding times





Cooking Vegetables

Not All Nutrients are Created Equal

- Lycopene is a “powerful antioxidant” that is a nutrient which helps fight against cancer and heart disease
- A research study from Cornell University showed that when tomatoes were cooked at 190° F the amount of lycopene increased:
 - 2 minutes = lycopene increased by 54%
 - 15 minutes = lycopene increased by 171%
 - 30 minutes = lycopene increased by 164%

Resource: Friedlander, Blaine. *Italian chefs knew it all along: Cooking plump red tomatoes boosts disease-fighting, nutritional power, Cornell researchers say.*
<http://news.cornell.edu/stories/2002/04/cooking-tomatoes-boosts-disease-fighting-power>. June 13, 2016.





Cooking Vegetables

Tomatoes as an Example

- Cooked tomatoes are found in a variety of foods and dishes that are served in schools:
 - Pizza Sauce
 - Pasta/Marinara Sauce
 - Chili
 - Soups
 - Tomato sauce, canned
 - Diced tomatoes, canned
 - Tomato paste, canned





Eat a Variety of Vegetables

Vegetable Subgroups: Fresh and Cooked

- As you have learned, vegetables can range in nutrients based on color and the way that they are cooked
- This is why eating a variety of all of the vegetable subgroups on a weekly basis is so important
- It is equally important to eat a variety of fresh and cooked vegetables to obtain optimal nutrition





Cooking Vegetables

Cooking too Long

- If vegetables lose their natural bright colors and become soft and mushy, chances are, they have been cooked too long and their nutrients have begun to breakdown





Cooking Vegetables

Cooking for High Quality

- Batch cooking/Staggered cooking
- Strong flavored vegetables should be vented
- Minimize stirring
- Follow Standardized recipes
- Do NOT overcook





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(3) email: program.intake@usda.gov.

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