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Increasing Powerhouse Vegetables



The Health Benefits of Dark Yellow and Orange Vegetables

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Dark yellow/orange vegetables lower a person's risk for some types of cancer and heart and eye disease.

Key Points

- Dark yellow/orange vegetables contain carotenoids and antioxidants.
- Dark yellow/orange vegetables lower a person's risk for some types of cancer and heart and eye disease.

Dark Yellow and Orange Vegetables

These vegetables get their color from plant pigments known as carotenoids. Examples of dark yellow/orange vegetables are:

- Carrots
- Butternut squash
- Sweet potatoes
- Yams
- Pumpkins

Health Benefits

Dark yellow/orange vegetables are good sources of beta carotene, a carotenoid and antioxidant that protects against free-radical damage. Beta carotene is converted to Vitamin A in the body, and Vitamin A helps in the differentiation of normal cells (epithelial). Lack of differentiation is a feature of cancer cells. Therefore, Vitamin A may prevent the development of cancer.

Orange vegetables also contain alpha carotene. Alpha carotene (also a type of Vitamin A) stops cancer cells from dividing and taking over other cells in the body. When this happens, it stops the growth of cancer.

The carotenoids present in dark yellow/orange vegetables may also be good for heart health. Studies show that when men with high cholesterol ate a high amount of these dark yellow/orange vegetables, they lowered their chances of getting a heart attack and dying more than men who did not eat these vegetables.

Dark yellow/orange vegetables are important in eye health. Studies have shown that people who eat a diet high in these vegetables experience a 43 percent decreased risk of macular degeneration, an eye disease that leads to blindness in older individuals.

Vegetable Requirements

Each week, teens and adults should eat 4 to 6 cups of red and orange vegetables. Children ages 4 to 8 should eat 3 cups of these vegetables, and children ages 2 to 3 should eat $2\frac{1}{2}$ cups.



Buying Kentucky Proud is easy. Look for the label at your grocery store, farmers' market, or roadside stand.



Purchasing Dark Yellow and Orange Vegetables

When carrots are purchased, look for a firm texture without rootlet. Carrots should be small, bright orange, smooth, and without cracks. When possible, buy carrots in bunches with their leafy green tops still attached. The top maintains the freshness and moisture of the carrots. Remove the tops after purchasing, and store in plastic bags in the refrigerator.

Sweet potatoes should be uniformly light tan in color when purchased. Look for firm sweet potatoes with smooth, bright, uniformly colored skins, free from signs of decay. Avoid sweet potatoes with worm holes, cuts, grub injury, or any other defects which penetrate the skin.

When buying squash, look for a hard, tough rind and a squash that is heavy for its size. These signs let you know the squash has reached full maturity and has more edible flesh. A tender rind indicates immaturity, which is a sign of poor eating quality. Slight variations in skin color do not affect the flavor of squash. Choose squash that have long, fat necks as they have more "meat." The seed and membrane are found in the bulbous lower part. Avoid squash with cuts, punctures, sunken spots, or moldy spots on the rind. These are indications of decay.

Storing Vegetables

In general, dark yellow/orange vegetables should be stored at temperatures slightly lower than room temperature (60°-65°F). These vegetables should be stored away from ethylene-producing fruits and vegetables such as apples and tomatoes. Carrots stay fresh longer when stored in the refrigerator. Sweet potatoes should not be stored in the refrigerator as they can give off an odd flavor. Butternut squash can be stored in a cool, dry place (basement or kitchen closet) for two to three months. Pumpkin is best stored at 60°-65°F with a humidity of 65 percent to 70 percent for long-term storage. Higher humidity levels are acceptable for short-term storage.

Preparing Dark Yellow and Orange Vegetables

When preparing dark yellow/orange vegetables, wash thoroughly before cooking or consuming. When preparing squash, the rinds may be removed before or after cooking. Sweet potatoes are better prepared whole when possible and peeled after cooking.

To prepare fresh pumpkin, slice pumpkin in half, remove seeds, pulp and stringy parts. Cut pumpkin into smaller segments and peel. Steam or boil until tender and mash or puree in a food processor. Pureed pumpkin can



be used in pies and other recipes. The pumpkin seeds may be rinsed to remove pulp then dried with an absorbent towel. Seeds may be tossed in seasonings and oil then roasted. The browned, crunchy seeds may be enjoyed as a snack that is rich in manganese, phosphorus, protein, and zinc.

How Can I Eat More Dark Yellow and Orange Vegetables Each Day?

- Use pumpkins and squash in soups.
- Grill dark yellow/orange vegetables, and serve them with meat.
- Dice or shred vegetables, and add to rice and pasta dishes.
- Use pureed pumpkin and squash in smoothies.
- Use dark yellow/orange vegetables when baking quick bread or dessert.
- Stir fry vegetables, and serve as a side dish. Add basil or parsley for extra flavor.
- Substitute baked sweet potato fries and baked sweet potato for the traditional potato fries and baked potato.
- Use carrots for snacks and in salads.

Glazed Butternut Squash with Carrots and Turnips

Ingredients

- 1½ cups cubed butternut squash
- 1½ cups sliced carrots
- 1½ cups cubed peeled turnips
 - 4 teaspoons oil
- ½ teaspoon salt
- ½ teaspoon pepper Cooking spray
- 2 tablespoons maple syrup

Directions

- Preheat oven to 450 degrees.
- · Cut vegetables into half-inch pieces.
- Coat a 9 x 13 baking dish with cooking spray.
- Combine the first 6 ingredients.
- Bake for 10 minutes.
- Stir in syrup and bake an additional 20 minutes.

Yield: Eight half-cup servings.

Nutritional Analysis: 60 calories, 2.5 g fat, 0g sat fat, 1 g protein, 9 g carbohydrate, 0 mg cholesterol, 170 mg sodium, 2 g fiber.

References

1039.

Steinmetz, K. A., & Potter, J. D. (1991). Vegetables, fruit and cancer. I. Epidemiology. Cancer Causes Control, 2, 324-57. Steinmetz, K. A., & Potter, J. D. (1996). Vegetables, fruit, and cancer prevention: A review. Journal of the American Dietetic Association, 96, 1027-

United States Department of Agriculture. Choose MyPlate. 10 Tips Nutrition Education Series. Accessed September 1, 2012 at http://www.choosemyplate.gov/food-groups/ downloads/TenTips/DGTipsheet2AddMoreVegetables.pdf.

Van Duyn, M. S., & Pivonka, E. (2000). Overview of the health benefits of fruits and vegetables consumption for the dietetics professional: Selected literature. Journal of the American Dietetic Association, 100, 1511-1521.

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