Center for Nutrition, Diet and Health

Spinach

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What's Inside

UNIVERSITY OF THE DISTRICT OF COLUMBIA

What's So Great about Spinach?

High in Vitamins and Minerals
Spinach is an excellent source of vitamin K. Vitamin K is needed for blood clotting. Spinach is an excellent source of vitamin A in the form of beta-carotene. Spinach is a good source of folate. Like most vegetables, spinach is low in calories, fat free, and a good source of fiber.

Always Available
Spinach is available year-round. At the market, spinach can be found in the fresh produce section of the market in bunches or bags. Spinach can be found frozen and canned.

Many Uses
Spinach can be eaten raw in a salad or sandwich in place of lettuce. It can be eaten cooked as a side dish, or mixed with other foods as part of a main course.

Selecting and Storing Spinach

Look for
Leaves that are fresh, young, tender, and mostly whole (not torn). Look for dark green leaves and lighter green stems.

Avoid
Leaves with thick, tough stems, yellowishgreen color, softness or a wilted condition. These are all signs of decay.

Storage
Keep bunched spinach in plastic bags. Keep prepackaged spinach in the bag it came in. Place in the vegetable crisper of the refrigerator. Spinach will keep in the refrigerator for 3 to 4 days.

Varieties of **Spinach**

<< Savoy
Savoy has crinkly, curly leaves with a dark green color. Savoy is often sold in fresh bunches. Springy and crisp, savoy spinach is good in salads.

Semi-savoy >>
Semi-savoy spinach has crinkled leaves. The leaves have some texture, but are not as hard to clean as the savoy.

<< Flat or smooth-leaf
Flat or smooth-leaf spinach has smooth, spade-shaped leaves. These leaves are easier to clean than savoy. Flat-leaf spinach is used for canned and frozen spinach. It can also be found in soups, baby foods, and other processed foods.

Baby >>
Baby spinach is very young spinach, usually the flat leaf type. Being very tender, baby spinach is often used in salads since it is very tender.

Did you know?

What is beta-carotene?
Beta-carotene is an antioxidant and a part of the carotenoid vitamin family. Carotenoids are found in brightly colored green, red, and orange vegetables, and red or orange fruits. The brighter the color of a fruit or vegetable, the more beta-carotene it has. Our bodies use beta-carotene to make vitamin A. Vitamin A is important for vision, immune function, and skin and bone health. Some studies show beta-carotene may reduce the risk of heart disease. Spinach is an excellent source of beta-carotene.

Preparation **Tips**

Trimming and Washing
Fresh spinach has sand trapped in the leaves and stems. Be sure to wash it well before eating. If washed far in advance, spinach will begin to rot, even if placed back in the refrigerator. Fresh spinach also can have thick stems and roots attached. These should be removed, especially if the spinach will be eaten raw. Bunch spinach usually has longer stems than bagged spinach.

To wash, drop the spinach leaves into a large bowl of lukewarm water, stir them gently with your hands, and then lift out the leaves to let the sand and grit settle. Next, empty and refill the bowl with clean water and wash the leaves again. Repeat this until there is no sand or grit on the bottom of the bowl and the spinach is clean. Although bagged spinach is often labeled "pre-washed," it still should be rinsed to clean away any sand and grit.

Sautéing
Spinach can be sautéed quickly in a small amount of oil. Sautéing works well if the spinach has just been washed. Use a nonstick pan and 1 teaspoon of oil for 3 cups of chopped spinach. Be careful to stir and toss the leaves constantly. The cooking time is short, only 2-3 minutes. Spinach can also be sautéed in broth or stock. Be prepared to add more stock to the pan as it evaporates.

Steaming
Cook in a steamer over boiling water for 3-5 minutes.

Microwaving
Microwaving can be used in place of steaming. It is also one of the

most healthful ways to cook spinach because almost none of the nutrients are lost. Wash but do not dry 1/2 pound of spinach. Place it in a microwaveable dish. Cover loosely with plastic wrap. Cook until tender. Cooking time will take about 4-5 minutes.

Fitting Sweet Potatoes into MyPyramid

The **GREEN** triangle of MyPyramid is the vegetable section. Vegetables may be raw or cooked; fresh, frozen, or canned. Age, gender, and level of physical activity determine the daily vegetable need. About 2 ½ cups of vegetables are recommended for a 2000-calorie per day diet. On MyPyramid, spinach is a dark green vegetable. For a 2000-calorie diet, 3 cups of dark green vegetables are recommended for women and men per week. That's less than ½-1 cup per day! For more information on vegetable serving sizes visit www.mypyramid.gov.

Nutrition Facts
1 cup raw Spinach

Serving Size 1 cup 30g (30 g)
Servings per container 1

Amount Per Serving	
Calories 7	Calories from Fat 1
	% Daily Value*
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat	
Cholesterol 0mg	0%
Sodium 24mg	1%
Total Carbohydrate 1g	0%
Dietary Fiber 1g	3%
Sugars 0g	
Protein 1g	
Vitamin A 56% • Vitamin C	14%
Calcium 3% • Iron	5%

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.

Recipe Collection

Lemon Spinach Sauté

Makes 4 servings

INGREDIENTS

1 bunch (1 pound) of fresh spinach
1/4 teaspoon black pepper
1 Tablespoon lemon juice

Estimated Cost: Per Recipe: $1.07
Per Serving: $0.27

INSTRUCTIONS

1. Wash the spinach. Trim off the stems.
2. Put the spinach, black pepper, and lemon juice in a pan.
3. Cook over medium heat. Let the spinach sauté for about 3 minutes, until just tender.

Nutrition Facts
¼ cup Spinach Sauté

Serving Size (25g)
Servings Per Container

Amount Per Serving	
Calories 45	Calories from Fat 10
	% Daily Value*
Total Fat 1.0g	2%
Saturated Fat 0.5g	3%
Cholesterol 5mg	2%
Sodium 115mg	5%
Total Carbohydrate 5g	2%
Dietary Fiber 0g	0%
Sugars 0g	
Protein 2g	
Vitamin A 10% • Vitamin C 15%	
Calcium 6% • Iron 2%	

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories	2,000	2,500
Total Fat	Less Than	65g	80g
Saturated Fat	Less Than	20g	25g
Cholesterol	Less Than	300mg	300 mg
Sodium	Less Than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Calories per gram:
Fat 9 • Carbohydrate 4 • Protein 4

Spinach Skillet

Makes 4 servings

INGREDIENTS

1 package (10 ounce) frozen spinach (mustard greens, collard greens, or broccoli also work well in this recipe)
1 can (32 ounces) stewed tomatoes
1 can (15 ounces) white beans
1 cup brown rice, cooked black pepper to taste, other spices to taste (oregano, basil, or hot pepper) optional

Estimated Cost: Per Recipe: $3.13
Per Serving: $0.78

INSTRUCTIONS

1. Put stewed tomatoes in a medium saucepan, pot, or electric skillet. Turn the heat to medium-high.
2. Put the greens into the tomatoes and cook 10 to 20 minutes stirring gently. Cook until soft.
3. Drain the beans and add to the spinach-tomato mixture.
4. Add the cooked rice and seasonings.
5. Cook until heated through.

Nutrition Facts
1 ½ cup Spinach Skillet

Serving Size (463g)
Servings Per Container

Amount Per Serving	
Calories 260	Calories from Fat 10
	% Daily Value*
Total Fat 1.0g	2%
Saturated Fat 0g	0%
Cholesterol 0mg	0%
Sodium 55mg	2%
Total Carbohydrate 50g	17%
Dietary Fiber 12g	48%
Sugars 9g	
Protein 13g	
Vitamin A 90% • Vitamin C 70%	
Calcium 25% • Iron 40%	

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories	2,000	2,500
Total Fat	Less Than	65g	80g
Saturated Fat	Less Than	20g	25g
Cholesterol	Less Than	300mg	300 mg
Sodium	Less Than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Calories per gram:
Fat 9 • Carbohydrate 4 • Protein 4

Hot Spinach Dip

Makes 8 servings

INGREDIENTS

1 (8 ounce) package cream cheese, softened
1/2 cup mayonnaise
1/4 cup grated Parmesan cheese
1 (10 ounce) package frozen chopped spinach, thawed and squeezed dry
1 cup shredded mozzarella cheese

Estimated Cost: Per Recipe: $1.07
Per Serving: $0.27

INSTRUCTIONS

1. In a small mixing bowl, beat the cream cheese, mayonnaise and parmesan cheese until blended. Stir in spinach and mozzarella cheese. Spoon into an ungreased microwave-safe 9-inch pie plate.
2. Microwave, uncovered, on high for 4-5 minutes or until bubbly, stirring twice. Serve with crackers or vegetables.

This recipe was tested in a 1,100–watt microwave.

Grow Your Own Spinach

The first planting can be made as soon as the soil is prepared in the spring. For fall and early winter harvest, plant spinach again in late summer. Plant 12 to 15 seeds per foot of row. Cover 1/2 inch deep with soil. When the plants are one inch tall, thin to 2 to 4 inches apart. The rows may be as close as 12 inches apart. In beds, plants may be thinned to stand 4 to 6 inches apart in all directions. Spinach may be harvested whenever the leaves are large enough to use. This is when there are at least five or six leaves. Late in the season, the whole plant can be harvested and eaten. Cut the plants at or just below the soil surface. Spinach is of best quality if cut while young. For more information, contact your local Cooperative Extension Educator in the phone book or at http://www.extension.psu.edu/.

ACTIVITY ALLEY

Spinach Stories

Directions: Spinach is a very healthy food. It can be used in many ways. It can be eaten fresh or cooked. It can be eaten on sandwiches, in soups and salads, with meat, or by itself. Never eaten spinach? Then write or draw about a way you would like to try to eat spinach.

ACTIVITY ALLEY

Spinach Word Search

Directions: Find the spinach-related word in the puzzle below.

X T P F J W B E Y S L V Q Z X V R I V H V I R P T
L A H U T S A O V T U M D J S M R C T Y C T A M J
L U Z R A H V D Y I P S B Q T C O C S L C H A H N
H P V V E A S G F Q R H T H G C E Z L T P S L R L
Q R O G S E A E B G Z N P O O K K B O O A G A E E
S Y T I S Z C F R C L N K A K V N K V E W Z S K K
N D M C K T Y U A F F P M A L T V I W N L K P S K
V E X F P R I H P I L S V N A X H K E E W A R M C
S P S K F R I G C S A I G N I H S A W T D W I E D
D A R K G R E E N Y T F C I E E I J Y O O L N T M
E S O C X Y U Z T A L L Q P T T D M O R O R G S S
O Y W B C R U F M D E A X G A P X O V A L T P Z T
E F Z A Y Q Y I N S A K S I L T Y H J C T W D B B
B O H H S O N A J Y F O Y Q O E C B M A B C G Q Y
Q E K C Z C S V O P B J E K F W K X X T M O M I C
C A N N E D G F X E Q E V I Y H P W Y E U X A T X
F G U X E U C E U O X V N I D L V D Y B Y P T H H
M S C I J D O V I C L E E O A F E N V P P H D X G
X Q O Z R R O V B I Z V Q Z W O U A T U H K W X R
H H S G R V C N A O W D E V I I W A V Y Y Y O P P
K Z B H L Q Y L R Y U Y G E F H L D A E J D O M T
W W M L C P Y F D X V R D S G F F M Y H S G A G P
N X T W J L Z X N R R W P O V L B Z J K T J D R I
W I L L M T R O A U U R L J Q P M E S F K F M I B
P I K M F F V K C R D T K R E B I F W P Q N U F Q

Beta-carotene
Canned
Dark green
Fiber
Flat-leaf
Folate
Fresh
Frozen
Leaves
Protein
Sand
Savoy
Semi-savoy
Spring
Stems
Three cups
Vitamin C
Wash

References

Pennsylvania Nutrition Education Tracks, Pennsylvania State University, Cooperative Extension, State College, Pennsylvania, 2007.

P. Basiotis, A. Carlson, S. Gerrior, W. Juan, and M. Lino, The Healthy Eating Index 1999-2000, CNPP-12, Center for Nutrition Policy and Promotion, USDA, December 2002.

Prior, R. L. Fruits and Vegetables in the Prevention of Cellular Oxidative Damage, American Journal of Clinical Nutrition, 2003; 78, (Supplement) 570S-8S.

Nutrition for Everyone: Eat Your Fruits and Vegetables, Division of Nutrition, Physical Activity and Obesity, National Center for Chronic Disease Prevention and Health Promotion, Center for Disease Control and Prevention: May 2008.

2005 Dietary Guidelines for Americans, Center for Nutrition Policy and Promotion, US Department of Agriculture.

Krebs-Smith, S. M. and others. Fruits and Vegetable Intakes of Children and Adolescents in the United States, Archives of Pediatrics and Adolescent Medicine. Volume 50, Number 1, January 1996.

Krebs-Smith, S.M. and others. Choose a Variety of Fruits and Vegetables Daily: Understanding the Complexities, Journal of Nutrition. 2001; 131; 487S-501.

Gillman, H. Enjoy Your Fruits and Vegetables, British Medical Journal. 1966; 313, 765-766.

Hung, H.C. and others. Fruits and Vegetables Intake and Risk of Major Chronic Disease, Journal of National Cancer Institute. 2004; 96: 1577-84.

Krinsky, N.I. Biologic Mechanisms of the Protective Roll of Lutein and Zeaxanthin in the Eyes, Annual Review of Nutrition. 2003; 23: 171-201.

Christen, W. G. and others. Fruit and Vegetable Intake and the Risk of Cataracts in Women, American Journal of Clinical Nutrition. 2005; 81: 1417-22.

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DC Supplemental Nutrition Assistance Program-Education. This material was funded by USDA's Supplemental Nutrition Assistance Program (SNAP). SNAP provides nutrition assistance to people with low income. It can help buy nutritious foods for a better diet. To find out more contact the Income Maintenance Administration at 202-724-5506 to help identify how to get services.