


Week 4 – Choose Healthy Carbohydrates




Choose Healthy Carbohydrates

Week 4 – Eight Weeks to Wellness
Prepared by Don Hall, DrPH, CHES


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Healthy Carbohydrates Help Prevent ...

- ❖ Obesity
- ❖ High blood pressure
- ❖ Diabetes
- ❖ Coronary heart disease
- ❖ Certain cancers
- ❖ Strokes
- ❖ Digestive problems such as constipation and diverticulosis



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There are four principles for choosing healthy carbohydrates

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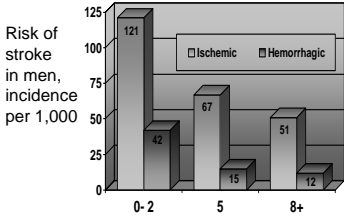
🍏 #1 Eat Many Fruits & Vegetables

- ❖ High in fiber
- ❖ High in antioxidants
- ❖ High in nutrients
- ❖ Low in calories
- ❖ They taste good and are fun to eat!



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Fruit and Vegetable Intake and Strokes, Framingham Study



Servings of Fruits and Vegetables per Day	Ischemic	Hemorrhagic
0-2	121	42
5	67	15
8+	51	12

- ❖ 20 year follow-up of 832 men in the Framingham Study.
- ❖ For each increment of 3 servings of fruits or vegetables per day, there was a 45% decrease in the risk death from stroke.

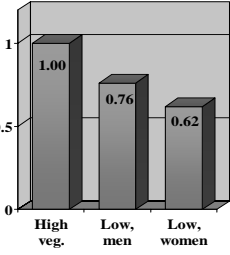
Framingham Study, *JAMA*, Vol 273, No. 14, pp1113-17

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Vegetable Intake and Colon Cancer

Cancer Prevention Study II

- ❖ 764,343 adults in study
- ❖ Risk of colon cancer decreased with the more frequent consumption of:
 - vegetables
 - whole-grain breads and cereals
 - aspirin
 - folic acid



Vegetable Intake/Day	Risk
High veg.	1.00
Low, men	0.76
Low, women	0.62

J of Nat. Cancer Institute, 85(7): 581-2

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Cancer Prevention Guidelines

1. Choose predominantly plant-based diets rich in a variety of vegetables, fruits, and legumes.
2. Maintain a healthy body weight.
3. Take an hour's brisk walk daily.
4. Eat five or more servings of fruits and vegetables daily.

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Aim for 7-10 Servings of Fruits and Vegetables Daily

Emphasize

- ❖ Greens and cabbage family
- ❖ Dark yellow or orange
- ❖ Tomatoes, onions, salads
- ❖ Citrus, berries
- ❖ A wide variety of other colorful fruits and vegetables



Source: MyPyramid.gov © 1997 - 2007 LifeLong Health 8

Ways to Eat More Fruits and Vegetables



- ❖ Keep raw vegetables ready-to-eat in clear containers in the front of your refrigerator for frequent use.
- ❖ Keep a supply of fresh fruit on the table or counter: oranges, bananas, apples, kiwi.
- ❖ Eat more salads and include a variety of vegetables: broccoli, peppers, cabbage, tomatoes, carrots, dark salad greens, onions.
- ❖ Enjoy stir-fry vegetables. Add vegetables to soups.
- ❖ Eat fruit salads and finish a meal with fruit as a natural sweet (e.g. oranges, berries, melon, dates).

© 1997 - 2007 LifeLong Health Source: MyPyramid.gov, 2005 9

#2 Choose Whole Grains

Choose mostly whole grains, at least three or more servings per day:

- Breads
- Cereals
- Brown rice
- Oatmeal
- Whole grain corn
- Rye



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Whole-Wheat Bread and Heart Disease

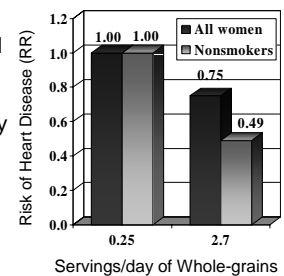


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Whole-grains and Heart Disease

- ❖ Nurses Health Study
- ❖ 75,521 women followed for 10 years
- ❖ Risk of coronary heart disease was reduced by 25% to 50% in those eating more whole-grains; 3 or more servings a day.

Amer J Clin Nutr 1999;70:412-9 © 1997 - 2007 LifeLong Health

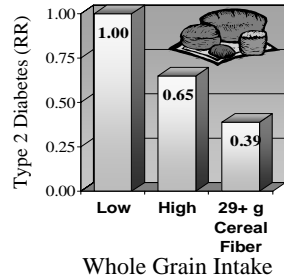


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Whole Grains and Type 2 Diabetes

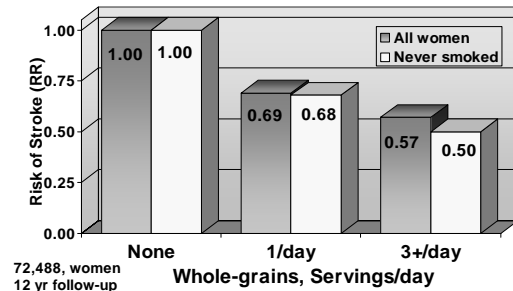
- ❖ Finnish study, 4,300+ men/women, 10 yr study:
- ❖ Those eating the most whole-grains had 35% less type 2 diabetes.
- ❖ Those with highest cereal fiber intake had 61% less diabetes.



Amer J Clin Nutrition, March 2003
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Whole Grains & Risk of Stroke



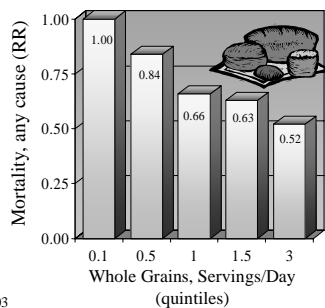
72,488, women
12 yr follow-up

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JAMA Sep 27, 2000; 284:1534-40 14

Whole Grains and Total Mortality

- ❖ ARIC study, 15,792 people 45-64, 11 yrs
- ❖ Those eating the most whole-grains had a 48% decrease in mortality.
- ❖ After adjusting for BMI, exercise, cholesterol, etc. they still had a 23% lower risk of dying from any cause.



Amer J Clin Nutrition, September 2003

Choose a Variety of Grains

- ❖ Whole-grain breads
- ❖ Multi-grain breads
- ❖ Oatmeal breads and cereals
- ❖ Whole-grain rye
- ❖ High fiber cereals
- ❖ Brown rice
- ❖ Pasta
- ❖ Barley cereal



At least three or more servings/day of whole-grains are recommended

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#3 Avoid High Glycemic Foods

Low glycemic foods protect against...

- Obesity
- High blood sugar
- Heart disease
- Diabetes



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High Glycemic Meals

- ❖ Eating high glycemic foods compared to lower glycemic foods results in:
 - Higher 24-hour blood sugar levels
 - Higher insulin levels
 - Higher glycosylated hemoglobin levels (HbA1c)
 - Increased hunger following reactive low blood sugar

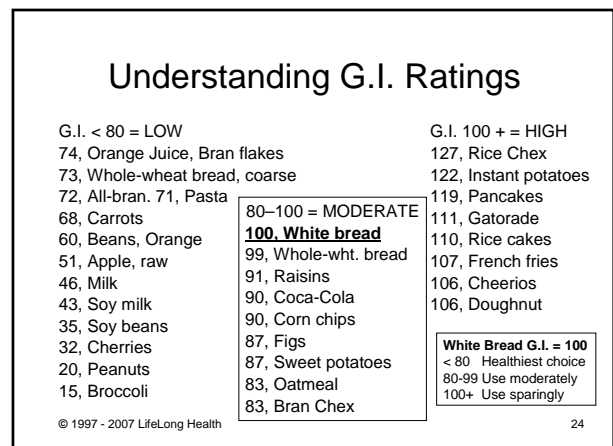
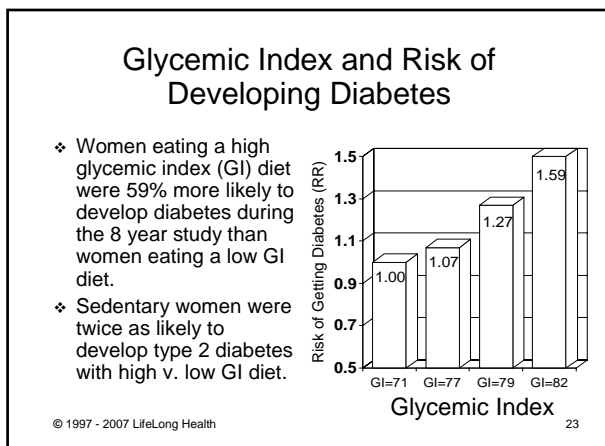
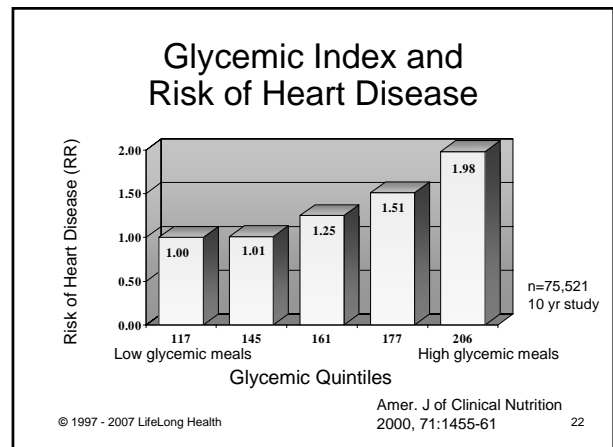
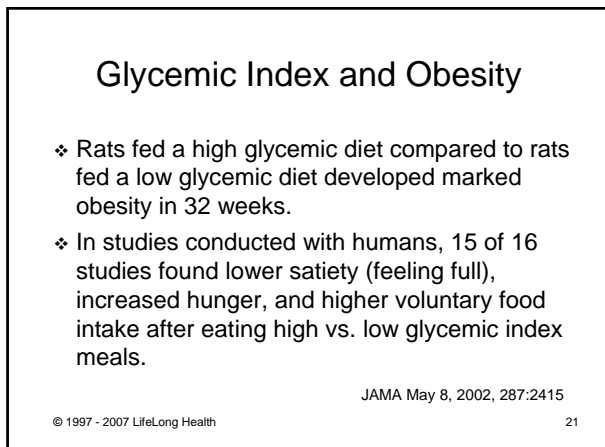
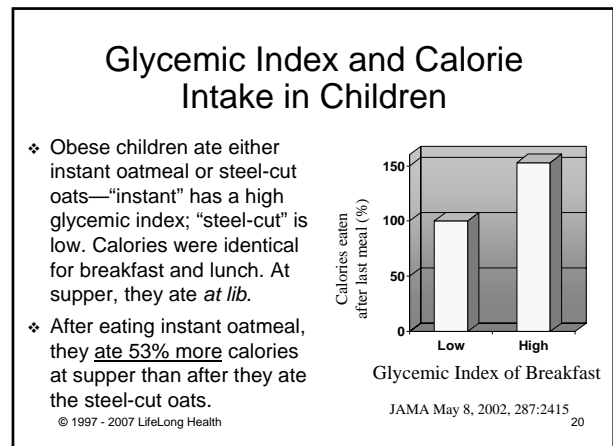
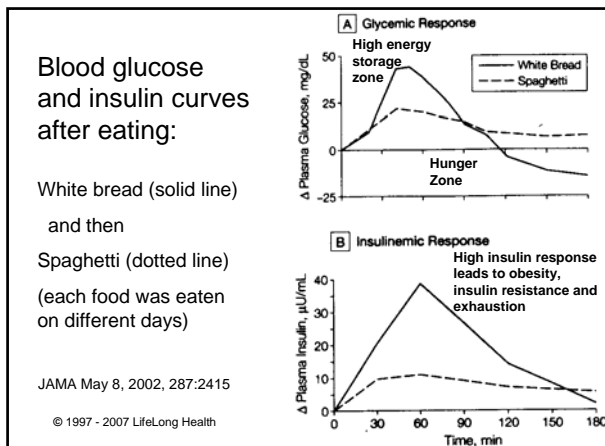


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JAMA May 8, 2002; 287:2415

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Understanding G.I. Ratings

H I G H 100	Instant mshd. potatoes, 122	127, Rice Chex
	Gatorade, 111	119, Pancakes
	French fries, 107	110, Rice cakes, puffed
	White bread, 100	106, Cheerios, Doughnut
	Raisins, 91	99, Whole-wheat bread
	Fig, Sweet potatoes, 87	90, Coca-Cola, Corn chips
	OJ, Bran flakes, 74	83, Oatmeal, Bran Chex
	All-bran, 72	73, Whole-wheat bread, coarse
	Carrots, 68	71, Pasta
	Apple, raw, 51	60, Beans, Orange
Soy milk, 43	46, Milk	
Cherries, 32	35, Soy beans	
Broccoli, ~15	20, Peanuts	

White Bread G.I. = 100
 < 80 Healthiest choice
 80-99 Use moderately
 100+ Use sparingly

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Glycemic Index Summary

High Glycemic Foods

- ❖ Snack foods
- ❖ Fast foods
- ❖ Pastry, cookies
- ❖ Sweets
- ❖ Soda pop
- ❖ White bread/rice
- ❖ Refined carbohydrates
- ❖ Potatoes

Low Glycemic Foods


- ❖ Fresh fruit & Vegetables
- ❖ Legumes, peas, beans, garbanzos, soy, tofu
- ❖ Nuts
- ❖ Whole-grain breads and cereals including oatmeal and brown rice
- ❖ Protein rich foods
- ❖ Healthy fats

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#4 Eat More Foods High in Fiber

Foods high in fiber help protect against ...

- Constipation
- High cholesterol
- Heart disease
- High blood sugar
- Diabetes
- Certain cancers
- Obesity

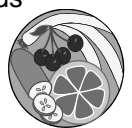


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Dietary Fiber

Dietary fiber is found only in plant-based foods, primarily unrefined foods

- Fruits
- Vegetables
- Legumes (peas and beans)
- Whole grains
- Nuts and seeds



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Recommended Fiber Intake

Dietary Fiber

- ❖ Men 38+ gm/day
- ❖ Women 25 gm/day
- ❖ Current average intake is only 10-15 grams/day

Soluble Fiber (best for lowering cholesterol)

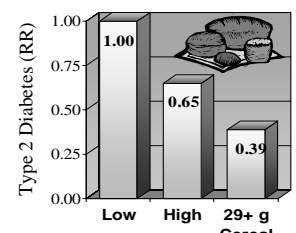
- ❖ 10-25 grams/day
- ❖ Examples: oats and oat bran, psyllium, barley, oranges, bananas, apples



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Whole Grains and Type 2 Diabetes

- ❖ Finnish study, 4,300+ men/women, 10 yr study:
- ❖ Those eating the most whole-grains had 35% less type 2 diabetes.
- ❖ Those with highest cereal fiber intake had 61% less diabetes.



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Soluble or Viscous Fiber

Goal

Increase to 10-25 grams per day



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Soluble Fiber grams

Barley, ½ cup cooked	1
Oatmeal, 1 cup cooked	2
Psyllium seeds, ground 1T	5
Apple, banana, peach	1
Orange, grapefruit, pear	2
Beans, cooked, 1 cup	4-6
Broccoli, ½ cup cooked	1
Brussels Sprouts, ½ cup ckd	3
Carrots, ½ cup cooked	1

Source: ATP 3 TLC Guidelines

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Practical Steps To Increase Your Intake of High-Fiber Foods

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1 Eat More Fruit

Fruit is a good source of fiber; low in fat and calories, and cholesterol-free.

Two to four servings of fruit per day are recommended.

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Fruits fiber, g

Apple, 1 medium	3.3
Applesauce, canned 1/2 C	1.5
Apricots, 3 medium	3.8
Banana, 1 medium	3.1
Blackberries, fresh, 1 C	7.6
Blueberries, frozen, 1 C	4.2
Cantaloupe, 1 C pieces	1.4
Kiwi, 1 medium	2.6
Orange, 1 medium	3.1
Peach, 1 medium	1.5
Pear, 1 small	4.6
Prunes, 1/2 C cooked	4.7
Strawberries, raw, 1 C	3.1

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2 Eat More Vegetables

Vegetables are low in fat and calories and high in fiber, vitamins, and minerals.

Three to five or more servings of vegetables per day are recommended.

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Vegetables fiber g

Asparagus, ½ C cooked	1.8
Broccoli, ½ C cooked	2.6
Brussels sprouts, ½ C ckd	2.0
Carrot, ½ C cooked	2.3
Coleslaw, ½ C	0.9
Green beans, ½ C cooked	2.0
Green peas, ½ C cooked	4.4
Greens, ½ C cooked	2.1
Potato, baked, 1 medium	3.8
Summer squash, ½ C ckd	1.3
Winter squash, ½ C baked	2.9
Sweet potato, 1 med. baked	3.8
Tomato, fresh, 1 medium	1.5

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3 Eat More Whole Grains

Whole grains are a good source of fiber. They are usually low in fat, and they tend to fill you up.

Three or more servings of whole grains per day are recommended.

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Grains fiber g

Bran Flakes cereal, 3/4 C	5.3
Grape-Nuts, 1/4 C	2.5
Oatmeal, 3/4 C, cooked	3.0
Pancakes, three 4" cakes	1.5
Pasta, 1C, cooked	2.5
Rice, brown, 1C cooked	3.5
Rice, white, 1C cooked	1.4
Shredded wheat, 1 C	5.0
Tortilla, 1, whole corn	1.5
Wheaties, 1 C	3.0
White bread, 1 slice	0.6
Whole-wheat bread, 1 slice	1.7

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5 Choose Fruit/Vegetable Juice

Pure fruit and vegetable juices contribute some fiber and are good sources of vitamins. Look for juices without added sugar.

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Juice fiber g

Apricot nectar, 6 oz	1.1
Grape juice, 1 C	0.3
Grapefruit juice, ½ C	0.1
Orange juice, 1 C	0.5
Pineapple juice, ½ C	0.5
Tomato juice, 1C	1.0
V-8 juice, 1C	1.9
Soft drink*, 1 can	0.0

* Soft drinks are loaded with sugar and calories but not nutrients.

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6 Eat Nuts and Seeds

Nuts are good sources of fiber, protein, and unsaturated fats. Nuts have been found to reduce the risk of heart disease.

Nuts	fiber g
Almonds (23), 1 oz.	3.3
Cashews (18), 1 oz.	0.9
Fiberts (21), 1 oz.	2.7
Mixed nuts, 1 oz. deluxe	1.6
Peanut butter, 2 T	2.6
Peanuts, 1 oz.	2.3
Pecans (15 halves), 1 oz.	2.7
Pistachios (49), 1 oz.	2.9
Sunflower seeds, 1 oz.	2.6
Pumpkin seeds (142), 1 oz.	1.1
Walnut halves, 1 oz.	1.9

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7 Eat Less Refined Foods

Much of the fiber is removed in refined and processed foods. Choose more unrefined, natural foods.

Sample Foods	fiber g
Apple, 1 med.	3.3
Applesauce, canned 1/2 C	1.5
Apple juice, 1 cup	0.2
Soft drink, 1 can	0.0
Whole-wheat bread, 1 slice	1.7
White bread, 1 slice	0.6
Twinkie, 1	0.1
Soft drinks, ice cream, candy sugar, butter, margarine	0.0

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8 Read Food Labels

- ❖ When buying foods, check the label for fiber content.
- ❖ You will soon learn which foods are higher in dietary fiber.

Nutrition Facts	
Serving Size 2.5 oz. (71g)	
Servings per container 4	
Amount Per Serving	
Calories 130	
Calories from fat 25	
% Daily Value	
Total Fat 3g	5%
Saturated fat 1 g	5%
Polyunsaturated fat 0.5g	
Monounsaturated fat 1.5g	
Cholesterol 10 mg	4%
Sodium 290 mg	12%
Total Carbohydrate 18g	6%
Dietary fiber 5g	20%
Sugars 1g	
Protein 8g	

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Estimating Fiber Intake

- ❖ This is a typical eating record for a busy person.
- ❖ Add up how much fiber this person ate for the day.

Foods	fiber g
Egg	_____
Toast, white bread	_____
Butter and jam	_____
Glass of milk	_____
Turkey sandwich	_____
Coke	_____
Chips	_____
Meat loaf	_____
Dinner roll (white)	_____
Salad with dressing	_____
Coffee with cream	_____
Cheese cake	_____
Total fiber intake (g)	_____

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Keep Track of Fiber Intake

Did you come up with the same total?
Is this sufficient fiber for a day?
Keep records on how well you do for a day.

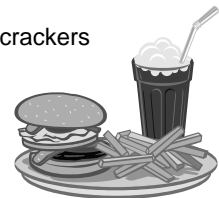
Foods	fiber g
Egg	0
Toast, white bread	0.3
Butter and jam	0.2
Glass of milk	0
Turkey sandwich	1
Coke	0
Chips	0.4
Meat loaf	0
Dinner roll (white)	0.3
Salad with dressing	2
Coffee with cream	0
Cheese cake	0.2
Total fiber intake (g)	4.4

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Unhealthy Carbohydrates

- ❖ Soda pop (soft drinks)
- ❖ Sugar, candy sweets
- ❖ White bread, pastry, soda crackers
- ❖ White rice
- ❖ Refined breakfast cereals
- ❖ French fries
- ❖ Snack foods



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Healthy Carbohydrates Are...

- ❖ Plant foods that have not been highly refined or processed
- ❖ High in dietary fiber
- ❖ High in antioxidants and phytochemicals
- ❖ Absorbed more slowly, normalizing blood sugar and insulin levels
- ❖ Moderate in calories but high in nutrition

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Carbohydrate Quiz

1. Healthy carbohydrates are found mostly in _____ foods that are also high in _____, _____, and _____.
2. Dietary fiber helps prevent _____ and _____, two leading health problems.
3. The recommended intake of fiber is ___ to ___g per day.
4. Examples of unhealthy carbohydrates are ___ and ___.
5. Which food is highest in dietary fiber: an apple, a cup of Wheaties® dry cereal, or 1/2 cup of peas?
6. T or F Nuts and seeds are not a good source of fiber.
7. T or F Whole grains can help lower cholesterol levels.
8. You should eat _____ or more servings of fruits and vegetables (high in dietary fiber) every day.

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