

**Age plus five equals
grams of fiber your
child should eat on
a daily basis.**

DATE _____

NAME _____

HIGH FIBER DIET

Fiber is a general term for the material in plants which is not digested. It provides bulk needed for normal elimination of solid wastes. In addition, it absorbs water and makes the stool softer and easier to eliminate.

In refined grains most of the fiber is removed by milling; some fiber is removed from fruits and vegetables by peeling. Whole grains are the major source of fiber. Some legumes, fruits and vegetables also contain fiber. Eating seeds and skins contributes a significant amount of fiber.

Increasing fiber intake has been shown to give relief from chronic constipation and symptoms of diverticulosis and hemorrhoids.

The following foods are high in fiber content. Select them more frequently.

BREADS, CEREALS, PASTA – at least TWO servings per day.

Whole grain bread, rolls and crackers
Cereals such as crude bran, All-Bran, Bran Buds, Raisin Bran,
Wheat Germ, 40% Bran Flakes, Puffed Wheat, Wheaties,
Shredded Wheat, Old Fashioned Oatmeal (not quick cooking),
Ralston and Wheatena.
Whole grain flours, whole ground cornmeal
Brown and wild rice, whole grain macaroni, spaghetti and noodles.

Crude or unprocessed bran is the outside seed coat of the grain which has removed in milling and has not been additional processed. It is the most concentrated source of fiber. All whole grain products contain more fiber than processed bran.

FRUITS AND VEGETABLES -- at least TWO servings per day

Apples with skin	Greens-dandelion, kale, mustard
Artichoke	Okra
Avocado	Parsnips
Beans: Green, wax, kidney, lima beans,	Pears- unpeeled
Lentils, Pinto beans, soybeans, peas-chick peas	Peppers
Garbanzos, black-eyed peas and green peas	Popcorn
Berries: Blackberries, blueberries, strawberries	Pumpkin
Brussel Sprouts	Rutabagas
Cauliflower	Squash- winter, acorn, yellow
Dried fruits- Especially Dates, apricots and raisins	

NUTS AND SEEDS

Nuts: all kinds including peanut butter
Seeds such as: pumpkin, sunflower, sesame, etc.

MEAT, FISH, POULTRY AND DAIRY PRODUCTS (less than 3 small servings)

Dairy, milk and cheese- 2 servings
Meat, fish, poultry- 1 serving
Provide very important nutrients and energy, although they are low in fiber.
It is important to include these foods in your diet daily.

FATS, OILS AND SUGARS (6 oz only)

Low in fiber and nutrient content. They are high in calories so use sparingly if you are overweight.

LIQUIDS

Plain water, flavored water (Fruit₂0), Crystal light and if the patient will not drink water, you may use watered down juice (as watered down as possible). NO apple juice.

REMEMBER FOR GOOD NUTRITION, EAT A VARIETY OF FOODS.

In addition, choose one serving of citrus fruits or juices such as orange, lemon, grapefruit, tomato or broccoli as a good source of Vitamin C.

Although many cereals with “healthy” sounding names are indeed high in fiber and low in sugar, others- especially bran cereals and granolas – can have a lot of sugar. The cereals here are listed in order of how much sugar they contain. Those marked with an asterisk are good choices – low in sugar and high in fiber. Cereals that contain more than 10% sugar should not be eaten every day; and ones higher than 30% sugar should be left on supermarket shelves.

<i>CEREAL</i>	<i>SERVING SIZE</i>	<i>SUGAR (gms)¹</i>	<i>FIBER (gms)²</i>
Cereals containing approximately 10% sugar or less			
Oatmeal Oats *	½ cup, cooked	-	2.9
Puffed Wheat *	¼ cup	-	3.4
Shredded Wheat *	1 biscuit	-	2.8
Ralstons *	½ cup, cooked	1	2.1
Cheerios *	1 cup	1	2.5
Chex, Corn *	2/3 cup	1	2.6
Chex, Wheat *	½ cup	1	2
Corn Flakes *	2/3 cup	1	2.6
Grape Nuts *	3 Tbsp.	1	2.7
Nutri-Grains *	½ cup	1	2
Corn Bran *	½ cup	2	4.4
Grape Nut Flakes *	2/3 cup	2	2.5
Oat Bran *	¼ cup	2	5.3
Total *	¼ cup	2	2.5
Wheaties *	¼ cup	2	2.6
Cereals containing approximately 30 to 40% sugar			
40 % Bran Flakes *	2/3 cup	4	3
Bran Chex*	½ cup	4	4.1
Most *	1/3 cup	4	3
All Bran*	1/3 cup	5	9
Honey Bran	2/3 cup	5	2.4
Frosted Mini-Wheats	2 ½ biscuits	5	1.3
Cracklin' Bran	1/3 cup	5	3
Raisin Bran	3/4 cup	8	3.4
Cereals containing approximately 30 to 40% sugar			
Wheat & Raisin Chex	½ cup	6	2
Bran Buds	1/3 cup	8	8

FIBER

FIBER FACTS: Dietary fiber is the part of food that is not digested by enzymes in the small intestine, where most food is digested. Fiber is found in most foods that come from plants. Fiber can do several things in our bodies to promote good health. Some fiber speeds the movement of food through the digestive tract, absorbing water and increasing fecal bulk to promote good bowel function. These benefits are especially important for people with diabetes:

1. Fiber can help to control blood glucose levels. Eating high fiber foods slows down the absorption of carbohydrates from the intestine. This causes less of a rise in blood glucose after eating.

FOR EXAMPLE: Eating an orange with the fibrous pulp will cause less of a rise in blood sugar than will drinking the strained juice from that same orange.

2. Fiber can help to lower fat (cholesterol and triglycerides) in the blood and reduce the risk of heart and artery disease.
-

CHOOSE FROM THESE HIGH FIBER FOODS:

LEGUMES: Kidney beans, lima beans, lentils, pinto beans.

FRUITS: Apples with skin, berries, oranges, pears, plums, apricots, raisins, prunes, cherries, bananas.

VEGETABLES: Broccoli, spinach, cabbage, cauliflower, carrots, tomatoes, squash, parsnips, eggplant, string beans.

STARCHY VEGETABLES: Potatoes with skin, sweet potatoes, winter squash, baked beans.

GRAINS: Oatmeal, wheat bran products, whole wheat bread, whole grain rye bread, brown rice, whole grain crackers and cereals, popcorn, oat bran, wheat germ.

NUTS AND SEEDS: All varieties of nuts contain fiber as do pumpkin, sesame and sunflower seeds. 1 tablespoon of nuts or seeds = 1 fat exchange.



TIPS FOR ADDING FIBER TO YOUR MEAL PLAN:

1. Eat complex carbohydrates in their natural fibrous coatings: brown rice, whole wheat bread, crackers, cereals, popcorn.
2. Choose vegetables and fruits with edible skins and seeds. Eat more fruits instead of juice.
3. Add fiber to your diet slowly. Start by eating a high fiber food 2-3 times daily. Gradually work up to including high fiber foods in all meals and snacks. Remember, these are not extra foods. Use high fiber foods in place of low fiber foods in your meal plan.
4. Drink more fluids (WATER) when you eat more fiber, otherwise, fiber can cause constipation.
5. Legumes (dried beans and peas) may be hard to digest and cause intestinal gas if you aren't used to eating them. Start with the most easily digested kinds, such as lentils, split peas and lima beans.

HOW MUCH FIBER SHOULD I EAT?

A goal to work toward is a diet that contains 10-15% of the carbohydrate calories as fiber.

FOR EXAMPLE:

If your diet is planned to provide 1800 calories per day, 50% of the calories are carbohydrate = 900 calories. 10% of the 900 calories = 90 calories from fiber. There are 4 calories in every gram of fiber, so $\frac{90}{4} = 23$ grams of fiber.

4

* Use the chart below to estimate the grams of fiber in your diet.

<u>FOOD</u>	<u>FIBER CONTENT</u>
Fruit	2 grams
Vegetable	2 grams
Starchy vegetable	3 grams
Legumes	8 grams
Whole grain breads/other grain products	2 grams
Cereals	3 grams
Bran cereals	8 grams
Nuts and seeds (1 oz.)	3 grams

SNACKING THE HIGH FIBER WAY:

There are many good tasting snacks that are also high in dietary fiber and fit into your daily meal plan.

TRY SOME OF THESE FOR A CHANGE AT SNACK TIME:

- Vegetable soup 1 cup = 1 bread exchange
- Lentil or bean soup ½ cup = 1 bread exchange
- Bran muffin
- Corn muffin
- Baked apple with skin
- Oatmeal cookies (see recipe)
- Apple smacks (see recipe)
- Raw vegetables and yogurt dip
- Carrot-raisin salad
- 100% whole wheat pita bread with cheese
- Yogurt mixed with fruit plus whole wheat croutons
- 1 T sunflower seeds or chopped nuts

THE PROMISE OF FIBER

When nutritionists create diets for people with diabetes, they search for foods that will keep people in good health as well as in good control.

One of the groups of foods now under investigation is that group containing dietary fiber, a nutrient that is found in foods already naturally low in sugar, fat, and cholesterol.

Fiber is the part of food not digested in the small intestine and it's found mainly in foods such as fruits, vegetables, whole grains, cereals and beans. Nutritionists recommend increasing the fiber in the diet, therefore the 1986 revised ADA Exchange Lists use a stalk of wheat to help you identify high-fiber foods.

There are two types of fiber. Water soluble fiber, found in fruits, beans and oat products, forms a gel during digestion and may help control blood sugar and blood fats like cholesterol. Water-insoluble fiber adds bulk and promotes regularity. Whole grain breads and cereals as well as fruits and vegetables are good sources of water-insoluble fiber. Both types are found in foods from plants.

Fiber Finds

Research conducted since 1974 at the University of Kentucky and Veteran's Administration Medical Centers in Lexington suggest that a high-carbohydrate, high-fiber (HCF) diet improves blood-sugar control. What's more, high-fiber dieters may have lower requirements for insulin or other medications. The research found that people with insulin-dependent diabetes could sometimes reduce their insulin dosage by following an HCF diet. In one study, 25 insulin-dependent people on the HCF diet had an average insulin dosage reduction of 38%, with average fasting blood sugars about 20% lower than those on a tradition diet.

People with non-insulin-dependent diabetes also may benefit from a high-fiber diet. In one group of insulin-taking lean patients with type 1 diabetes placed on the HCF diet during hospitalization, all but one were able to discontinue insulin therapy while in the hospital. Fasting blood sugars dropped an average of 15 %. When they returned home, those people followed the HCF diet with continued good control.

In other research the HCF diet helped over-weight people with type II diabetes. Among 25 non-insulin-dependent obese men on insulin, hospitalized for weight-loss treatment, 52 percent were able to maintain an average weight reduction of 15 pounds over two-and-one-half years eating high-fiber foods. About half were also able to discontinue insulin therapy.

How does fiber help people lose weight? For one thing, fiber is bulky and helps to fill you up. For instance, two small apples contain the same number of calories as one cup of apple juice. But which is more likely to make you feel full? Try those high-fiber apples. Both types of fiber are important. The water-insoluble fibers are bulky, letting fewer calories bring on a full feeling. The water-soluble fibers exit from the stomach more slowly than many other foods, keeping you fuller longer.

But The Jury's Still Out

Although results are promising, it is not yet clear whether substituting fiber for other carbohydrates in the daily diet will give everyone the best results.

Scientists who met recently at the National Institutes of Health to discuss diet and exercise in people who have non-insulin-dependent diabetes. High fiber studies should continue because the findings, though hopeful, are still not conclusive.

These experts suggested that when you consider adding fiber to your diet you should remember the following:

- The effect of high-fiber foods and other nutrients in the diet is not yet clear.
- A high-fiber diet is not recommended for people who have autonomic neuropathy.
- Purified fiber supplements should not be used for diabetes therapy.
- High-fiber foods should not be taken *in addition* to the carbohydrates already in the diet.
- The amount of fiber in your diet should be increased *gradually*, allowing your body time to adjust.

Fat vs. Fiber

Research also seems to show that improved blood-glucose control may not be the only benefit of water-soluble fiber. Although diabetes has a tendency to raise blood fats like cholesterol and triglycerides, water-soluble fiber may decrease those levels, helping prevent heart attacks and strokes. In one study, patients who started with high cholesterol levels lowered those levels 20 to 30 % by eating daily helpings of bean or oat products, which are primary sources of water-soluble fiber.

Although a high-fiber diet may bring a healthier heart and better diabetes control, increasing dietary fiber requires planning. Current fiber goal recommendations are 20 to 25 grams or up to 50 grams per day.

You might start adding fiber with a breakfast of high-fiber cereals, muffins and fresh fruits.

For lunch, crunch raw vegetables and include sandwiches on whole grain breads. High-fiber soups like vegetable or bean, especially home-made with little salt, also help. Again fresh whole fruits are a good choice.

And That Ain't Hay

Contrary is a way many people think, high-fiber foods need not be course, dry or bland. A high-fiber diet draws on fresh fruits and vegetables, which can make your meal tasty, colorful and unusual.

The two sample menus below show the range of foods under the high-fiber heading. They are only examples of how fiber can be worked into 1,500 or 2,000 calorie plan; your doctor or dietitian can help fit fiber with your personal dietary needs.

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FIBER IN YOUR DIET

WHAT IS FIBER?

Fiber is the portion of plant foods that our bodies can't digest. There are two basic types.

Insoluble fibers, the kinds usually referred to as "roughage," include the woody or structural parts of plants, such as fruit and vegetable skins and the outer coating (bran) of wheat kernels.

Soluble fibers are substances that dissolve and thicken in water to form gels. Beans, oatmeal, barley, broccoli, and citrus fruits all contain soluble fiber, and oat bran is an especially rich source.

WHY IS FIBER GOOD FOR YOU?

Insoluble fibers tend to speed the passage of material through the digestive tract, while soluble fibers tend to slow it down. However, since both forms of fiber absorb water, they both combat constipation by softening and enlarging the stool.

There is evidence, as well, that soluble fiber may be helpful in reducing blood cholesterol levels. Insoluble fiber is helpful in preventing and treating constipation.

WHAT FOODS CONTAIN FIBER?

Beans. One of the best sources of both soluble and insoluble fiber. A half-cup serving of cooked kidney, navy, pinto, or lima beans supplies around four to seven grams of fiber, roughly half of which is soluble.

Bran. Wheat bran is almost entirely insoluble and is excellent for relieving constipation; it's found in whole-wheat products. Oat bran is also very high in fiber, more than half of it soluble.



Fruits. Eaten with the skins intact, fruits are excellent sources of insoluble fiber. In addition, the fiber in apples, peaches, plums, bananas, and citrus fruits is more than half soluble.

Whole grains. Choose whole-grain cereals, breads, and crackers when possible. Brown rice or wild rice will add fiber (mostly insoluble) and variety to a meal.

Vegetables. All vegetables add some degree of insoluble fiber to the diet. Broccoli, raw carrots, and cabbage are sources high in soluble fiber.

Popcorn. A great high-fiber and (when air-popped and unbuttered) low-calorie snack.

HOW TO ADD FIBER TO YOUR DIET

Increase fiber gradually. Too much too fast can cause gas, cramps, diarrhea, and discouragement.

Get fiber from a variety of sources. Experiment with different fruits, vegetables, and grains, to help ensure a variety of nutrients.

Drink lots of water. Fiber, especially soluble, absorbs large amounts of water; a high-fiber diet can actually constipate if not accompanied by plenty of fluid (six

HIGH-FIBER FAVORITES

Food	Portion size	Fiber (grams)
banana	1 medium	2.4
orange	1 medium	2.6
peach	1 medium	1.9
carrots	½ cup	2.3
corn	½ cup	3.6
green peas	½ cup	3.6
potato, with skin	1 medium	2.5
beans, cooked:		
lima	½ cup	4.5
navy	½ cup	6.0
kidney	½ cup	7.3
bran flakes	¾ cup	4.0
shredded wheat	1 biscuit	3.0
air-popped popcorn	1 cup	1.0
whole-wheat bread	1 slice	1.4

Source: National Cancer Institute

SAMPLE MENU

1,500 CALORIES This menu contains 39 grams of fiber.

Breakfast

Whole grain muffin* with 1 1/2 tsp. cream cheese
1/2 cup Cream of Wheat cereal with 6 Tbsp. blueberries
1 cup skim milk

2 Starch/Bread Exchanges;
1 Fat Exchange; 1/2 Fruit; 1
Skim/Very Lowfat Milk Ex.

Lunch

1/2 cup tuna with 2 tsp. mayonnaise, chopped celery and
pimento stuffed in a whole wheat pita bread.
Garden Vegetable Soup*

2 Starch/Bread Exchanges; 4
Vegetables Exchanges; 2 Meat
Exchanges; 2 Fat Exchanges

Iced Tea

Dinner

Sole Florentine*
1/2 cup corn with 1 tsp. margarine
1 whole wheat roll with 1 tsp. margarine
Pears with Raspberry Sauce*

2 Starch/Bread Exchanges; 2
Vegetable Exchanges; 1 1/2
Fruit Exchanges; 2 Lean meat
Exchanges; 2 Fat Exchanges

Iced Tea

Snack

1 cup plain low-fat yogurt with 3 Tbsp. Grape Nuts Cereal
2 Tbsp. raisins and 6 whole almonds

1 Starch/Bread Exchange; 1
Fruit Exchange; 1 Fat Exchange;
1 Lowfat Milk Exchange

2,000 Calories This menu contains 50 grams of fiber.

Breakfast

Three-Grain Waffles with Hot Orange Sauce*
1 cup skim milk

2 Starch/Bread Exchange; 1
Fruit Exchange; 1 Fat Exchange;
1 Very Lowfat Milk Exchange

Snack

Small fresh apple
1 1/2 Graham cracker squares

1/2 Starch/Bread Exchange;
1 Fruit Exchange

Lunch

Lentil Soup
1 cup raw carrots
2 oz. turkey with 1 tsp. mayonnaise on 2 slices
whole wheat bread

4 Starch/Bread Exchanges; 1
Vegetable Exchange; 3 Meat
Exchanges; 2 Fruit Exchanges;
1 Fat Exchange

Fresh banana Diet soft drink

7.

Dinner

Tijuana Pie* 3 Starch/Bread Exchges; 4
Large sliced tomato Vegetables Exchges; 4 Meat
1 cup steamed broccoli with 1 Tbsp. sesame seeds Exchges; 2 Fat Exchges
Iced tea

Snack

Apple crisp* 1/2 Starch/Bread Exchge; 1
1 cup skim milk Fruit Exchge; 1 Milk Exchge

*RECIPES INCLUDED IN THIS ARTICLE

Hot Orange Sauce (for 8 servings)

1 Tbsp. margarine 1 cup orange juice
1 Tbsp. vegetable oil 1 cup peeled, diced orange
2 Tbsp. whole wheat flour pinch of mace

Heat margarine and oil in a small saucepan over medium heat. Stir in flour. Cook, stirring, 2 minutes or until bubbly. Stir in orange juice. Bring to a boil. Reduce heat and simmer until thick and creamy. Let cool, Stir in orange and mace.

One serving (1/4 cup) = 1 Fruit Exchange: 58 calories; 7 gm carbohydrate, 0.6 gm protein, 3 gm fat, 0 mg cholesterol, 0.6 gm fiber, 20 mg sodium.

WHOLE GRAIN MUFFINS (for 12 muffins)

1 1/2 cups skim milk 1Tbsp. plus 1 tsp. vegetable oil
3/4 cup uncooked oat bran cereal 1 cup quick cooking oats or old
1/4 cup egg substitute fashioned rolled oats
Artificial brown sugar equivalent 1 cup whole wheat flour
to 1/4 cup sugar 1 Tbsp. baking powder

Heat oven to 400 degrees

Spray 12 (2 1/2 in.) muffin cups with nonstick vegetable coating or line with paper baking cups. In a medium bowl, mix the milk and oat bran cereal. Add the egg substitute, brown sugar substitute, and oil. Mix well. In a small bowl, combine the remaining ingredients. Add to oat bran mixture, mixing just until dry ingredients are moistened.

Spoon into prepared muffin cups, filling cups two-thirds full. Bake about 20 minutes or until light golden brown.

One serving (1 muffin) = 1 Starch/Bread exchange; 1/2 Fat Exchange; 103 calories; 13 gm carbohydrate. 5 gm protein, 3gm fat, 1mg cholesterol, 3gm fiber, 132 mg sodium.

8.

GARDEN VEGETABLE SOUP (for 6 servings)

1 beef bouillon cube	2 cups tomato juice
3 cups water	2 medium potatoes, diced
2 medium carrots, diced	1 cup diced green beans
1 medium onion, diced	1 medium zucchini, diced
2 celery stalks, diced	1/2 green bell pepper, diced
1/4 tsp. dried leaf basil	1/4 tsp. dried leaf marjoram

In a large pot over medium heat dissolve bouillon cube in tomato juice and water. Add the vegetables and herbs. Bring to a boil. Reduce heat. simmer until the vegetables are tender, about 20 minutes.

One serving (1 /3 cup) = 4 Vegetable Exchanges or 1 Starch/Bread Exchange; 97 calories; 19 gm carbohydrate; 4 gm protein, 0.5 gm fat, 0 mg cholesterol, 7 gm fiber, 463 mg sodium.

SOLE FLORENTINE (for 8 servings)

10 oz. pkg. frozen chopped spinach	3 Tbsp. Margarine
1 cup sliced mushrooms	1/2 cup chopped green onions
1 1/2 cups oat bran cereal or quick cooking oats or old fashioned rolled oats	1/4 cup egg substitute.
1 tsp. salt, if desired	1/4 cup lemon juice
Paprika	8 sole or flounder fillets

Thaw spinach, reserving liquid. Heat oven to 375 degrees.

In medium skillet over medium heat, melt margarine. Add mushrooms and green onions, saute 3 to 4 minutes. Remove from heat.

Add oat bran cereal, egg substitute, 2 Tbsp. lemon juice, spinach with reserved liquid and salt, if desired, Mix well. Lay fillets flat on a work surface. Divide oat mixture evenly among the fillets, spreading to within 1/2 inch of edges. Roll up each fillet. Place seam-side down in an ungreased 13 by 9 pan.

7.

RECIPE FOR BRAN MUFFINS

Yield: 12 muffins, Each serving: 1 muffin, Each serving may be exchanged for:
1 Bread, 1/2 Fat

INGREDIENTS:

1/2 cup all-purpose flour	1 teaspoon baking soda
2 cups bran flakes	1 cup buttermilk
1 egg, slightly beaten	1/4 cup reduced-calorie margarine, melted
6 tablespoons raisins	Liquid sugar substitute to equal 1/2 cup sugar.

STEPS IN PREPARATION:

1. Sift flour and soda together into medium-sized mixing bowl; add branflakes.
2. Combine buttermilk, egg, margarine and sugar substitute.
3. Add milk mixture to dry ingredients, stirring only enough to mix the ingredients slightly.
4. Add raisins.
5. Spoon 2 1/2 tablespoons-batter into each of 12 nonstick muffin cups.
6. Bake at 400 degrees for 18-20 minutes.

RECIPES

CARROT-RAISIN SALAD

Yield: 7 Servings
Each Serving: $\frac{1}{2}$ cup
Each serving may be
exchanged for: 1 Fruit
1 Vegetable

INGREDIENTS:

2 cups grated carrots
1 cup unsweetened crushed
pineapple, drained
 $\frac{1}{2}$ cup raisins
1 (8 oz.) carton plain
low-fat yogurt
7 Lettuce leaves (optional)

STEPS IN PREPARATION:

1. Combine carrots, pineapple and raisins; mix well.
2. Chill for 2 to 3 hours.
3. Stir in yogurt, and serve on a lettuce leaf, if desired.

OATMEAL COOKIES

Yield: 60 cookies
Exchanges per 2 cookie serving:
1 Bread, 1 Fat, $\frac{1}{2}$ Fruit
Estimated nutrients per serving:
CAL 134 FAT 6
CHO 18 Na 243
PRO 2 K 85

INGREDIENTS:

$\frac{3}{4}$ cup vegetable shortening
 $\frac{1}{2}$ cup brown sugar
 $\frac{1}{2}$ cup granulated sugar
1 egg
 $\frac{1}{4}$ cup water
1 teaspoon vanilla
1 cup flour
1 teaspoon salt
 $\frac{1}{2}$ teaspoon baking soda
1 cup raisins
3 cups rolled oats, quick cooking
or regular

METHOD:

1. Preheat oven to 350°F
2. Beat together shortening, sugars, egg, water and vanilla until creamy.
3. Combine flour, salt and soda. Add to creamed mixture. Add raisins and rolled oats. Mix well.
4. Drop by rounded teaspoonfuls onto ungreased cookie sheet

BRAN MUFFINS

Yield: 12 muffins
Each Serving: 1 muffin
Each service may be
exchanged for: 1 Bread, $\frac{1}{2}$ Fat

INGREDIENTS:

$\frac{1}{2}$ cup all-purpose flour
1 teaspoon baking soda
2 cups bran flakes
1 cup buttermilk
1 egg, slightly beaten
 $\frac{1}{2}$ cup reduced-calorie margarine, melted
Liquid sugar substitute to equal $\frac{1}{2}$ cup
sugar
6 tablespoons raisins

STEPS IN PREPARATION:

1. Sift flour and soda together into medium-size mixing bowl; add bran flakes.
2. Combine buttermilk, egg, margarine and sugar substitute.
3. Add milk mixture to dry ingredients stirring only enough to mix the ingredients slightly.
4. Add raisins.
5. Spoon $2\frac{1}{2}$ tablespoons batter into each of 12 nonstick muffin cups.
6. Bake at 400° for 18-20 minutes.

NACHO SANDWICH

Yield: 2 sandwiches
Each sandwich may be
exchanged for: 2 Bread, $\frac{1}{2}$ Meat, $\frac{1}{2}$ Fat

INGREDIENTS:

2 flour tortillas
 $\frac{1}{2}$ cup refried beans
 $\frac{1}{4}$ cup shredded cheddar cheese - 1 oz.
 $\frac{1}{4}$ cup shredded lettuce
 $\frac{1}{4}$ cup chopped tomato
2 cbs. plain yogurt

STEPS IN PREPARATION:

Fill flour tortillas with ingredients in order given. Fold over one end of each tortilla and roll up.



What is Fiber ?

Fiber is the part of plant food that's not digestible. Often called roughage, fiber has minimal calories and adds bulk to the diet by absorbing water.

There are two kinds of fiber: soluble, which dissolves in water and insoluble, which does not. Foods that are high in soluble fiber include oats, barley, peas, beans, and citrus fruits. Good sources of insoluble fiber include wheat bran and some vegetables.

Soluble and insoluble fibers work differently.

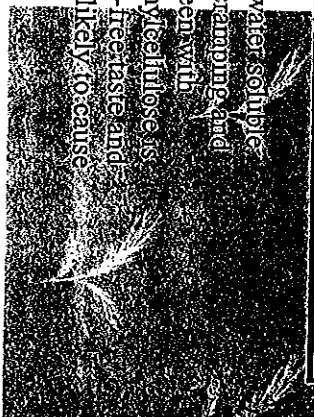
Insoluble fiber, like a sponge, absorbs water to create softer, larger stools. Soluble fiber, on the other hand, is more like toothpaste, in that it gels.

Methylcellulose, the ingredient found in

CITRUCEL[®], is one

of the few fibers that is completely water soluble. It is less likely to create abdominal cramping and excess gas, side effects commonly seen with patients taking psyllium fibers. Methylcellulose is also easier to take because of its grit-free taste and texture. And, methylcellulose is less likely to cause allergic reactions.

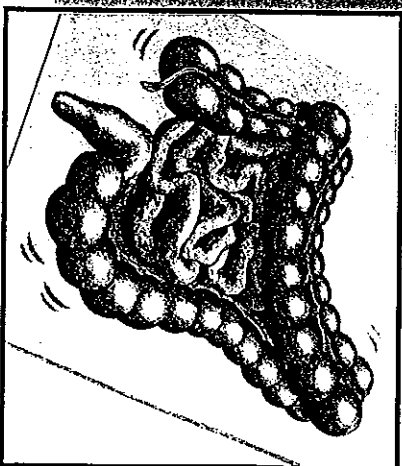
	Psyllium	Methylcellulose
100% water soluble		✓
Non-allergenic		✓
Does not cause excess gas/bloating		✓
Taste preferred		✓



Why is Fiber Important ?

Fiber can absorb up to 30 times its own weight in water. The body doesn't actually absorb fiber. It adds bulk and texture to food as it passes through the body, keeping your system regular. Because of this, many doctors recommend fiber for the treatment or prevention of some digestive tract problems, like hemorrhoids, diverticular disease, irritable bowel syndrome, and even rectal cancer.

Fiber keeps your stools from becoming either too loose, or dry and hard. If you suffer from diarrhea, fiber may "slow you down." If you have difficulty with constipation, fiber may "speed you up." It may actually "normalize" bowel activity.

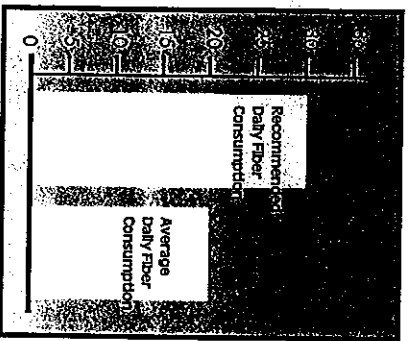


**Fiber regulates—
naturally.**

How Much Fiber Should I Get? Can I Get Too Much?

There aren't any official guidelines, but the National Cancer Institute recommends between 20-30 grams of fiber a day. Unfortunately, most of us get only 5 to 20 grams of fiber daily. Too much fiber may make you feel bloated and uncomfortable, but it's highly unlikely that you'll get too much. You would have to eat more than 50 grams a day—or about 18 apples, 12 small potatoes, 50 tablespoons of raisins, or an entire box of high-fiber cereal to exceed your daily limit.

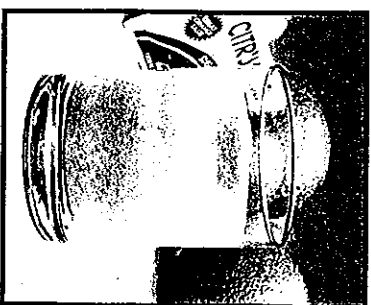
**The National Cancer
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fiber a day.**



If I'm Not Getting Enough Fiber, How Can I Get More?

Try to include more high-fiber foods in your diet. There's a chart which lists foods that are high in fiber in this booklet. Also, eat potatoes, apples and other foods with skin, which are good sources of fiber.

When people increase the amount of fiber in their diet, they sometimes complain about having gas and cramping. To avoid this, you can increase your fiber gradually, so your body has time to adjust to the additional fiber. You may consider avoiding psyllium, a popular fiber supplement that can ferment in the colon and may cause additional gas and cramping. Remember to drink plenty of water or juice, or the added fiber can actually make you constipated. Many doctors now recommend a therapeutic fiber product called CITRUCEL®, because it contains methylcellulose. It's made from an ultra-pure plant fiber that's 100% soluble. Therapeutic fiber which is non-allergenic and non-systemic, like CITRUCEL, can help to treat the irregularity that comes along with some bowel problems (when recommended by a doctor). The fiber in CITRUCEL mixes easily, dissolves completely in water and has less chance of causing gas and cramping. CITRUCEL comes in a great-tasting orange flavor, with or without sugar.



**Many doctors now
recommend a
therapeutic fiber
product called
CITRUCEL®**

What's the best source of fiber?

All fiber is good for you—whether it comes from food or a therapeutic fiber. If your doctor has recommended a therapeutic fiber, remember, not all are created equal. In selecting a therapeutic fiber, consider the following:

- A therapeutic fiber only works if you take it, so taste matters.
- A therapeutic fiber may be just as effective in helping you to stay regular as high-fiber food, but most people don't get enough fiber through their diet.
- A soluble fiber, such as CITRUCEL, may help ensure you get enough fiber each day.
- A therapeutic fiber can be a safe, natural way to stay regular.

Getting more fiber is an important first step to better health.

Regular exercise also helps.



FIBER SOURCES

Source	Portion	Approximate Grams Fiber *
Apple	Small	2.8
Banana	Medium	2.0
Beans (kidney)	1/2 cup	5.5
Beans (lima)	1/2 cup	4.4
Bread (whole wheat)	Slice	2.0
Broccoli	3/4 cup	5.0
Carrots (raw)	4 sticks	1.7
Green Beans	1/2 cup	2.1
Green Peas (canned)	1/2 cup	3.0
Oat Bran	1/2 cup	3.0
Orange	Small	3.0
Peach	Medium	2.0
Pear	Small	3.0
Potato	Small	4.2
Rice (brown)	1/2 cup	5.5
Watermelon	Thick slice	2.8

*Fiber values are approximate and may vary.



DIETARY FIBER - WHAT IS IT?

Dietary fiber can be defined as the part of a plant that

cannot be digested by humans. Fiber is what

gives plants their strength and structure. Fiber

is found in grains, cereals, fruits, vegetables,

nuts, seeds and legumes (dried beans, peas and

lentils). Another source of fiber is the psyllium

husk which comes from a plant grown in India.

Fiber comes only from plants - meat, fish and

milk products do not contain fiber.

SOLUBLE AND INSOLUBLE FIBER

There are two kinds of fiber and most sources of fiber contain a mixture of both types.

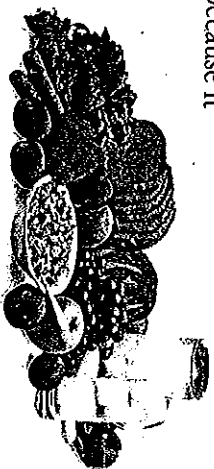
Both types of fiber help your body, but in different ways, so it is best to eat a variety of high fiber foods.

SOLUBLE FIBER absorbs water, and becomes bulky in the stomach and works throughout the intestinal tract. Soluble fiber promotes good intestinal health by increasing bowel motility and enhances transit through the intestinal tract. Recent research suggests that increasing soluble fiber in the diet plays an important role in decreasing the incidence of colon cancer, controlling blood cholesterol levels, improving the control of diabetes, and aiding in weight control.

Good sources of soluble fiber include:

- Psyllium
- Oatmeal and Oat bran
- Legumes (dried beans, peas and lentils)
- Fruits and most vegetables

INSOLUBLE FIBER absorbs little water and adds bulk only in the lower intestine. Although insoluble fiber is less effective than soluble fiber at promoting good bowel health, insoluble fiber is still important in your diet because it improves the transit time necessary to move fecal material through the colon.



Good sources of insoluble fiber include:

- Whole grains (wheat bran, whole grain breads)
- Fruits & vegetables with edible skins and seeds (apples, pears, strawberries and tomatoes)

WHO NEEDS TO INCREASE DIETARY FIBER?

While there is no RDA (Recommended Daily Allowance) for dietary fiber, the National Cancer Institute has recommended eating 25-35 grams of fiber a day as a step toward preventing colon cancer. Most Americans consume only 10-15 grams of fiber per day. Thus, most people are 15-20 grams short of the daily 25-35 grams of fiber goal.

Experts urge healthy individuals to add fiber through a well-balanced diet containing high fiber foods (both soluble and insoluble sources of fiber). Sometimes that is difficult to do even for the most healthy and disciplined eaters. 25-35 grams of fiber are approximately equivalent to 9-13 apples per day or 12 bowls of raisin bran or 12-16 slices of whole wheat bread. Fiber supplements can be the way to rectify the lack of fiber in an otherwise healthy diet.

HOW CAN I INCREASE MY FIBER INTAKE?

In conjunction with increasing the amount of fiber in the diet, it is also recommended to decrease fat intake. You can do this with diet alone or with diet and a fiber supplement. When you decide to increase the amount of fiber in your diet, it is advisable to increase the level slowly. Too much fiber all at once, may cause bloating, flatulence (gas) and/or cramping. When fiber-rich foods and/or fiber supplements are added to the diet gradually, the body will adjust more easily, enabling the digestive system to work smoothly and comfortably.

chemical or stimulant laxatives, fiber supplements are bowel normalizers and are all natural. These will not cause you to have sudden or unexpected bowel movements. Instead, you will experience easier elimination (less straining) in a pattern that is normal to you.

HOW WILL INCREASED FIBER BENEFIT YOU?

Once you have achieved a consistent daily intake of 25 - 35 grams of fiber, you may notice improvements in the following conditions:

CONSTIPATION:

Fiber increases the amount of water content in fecal matter, creating more bulk and softer, well-formed stools. It helps bowel system function naturally, and avoids the harsh, irritating effects of habit forming, stimulant laxatives.

HEMORRHOIDS:

The enlarged veins of the rectum and anus, produced by strain during elimination of waste material, are often further irritated by constipation. Fiber produces a softer fecal mass and encourages better regularity with less straining and irritation.

DIVERTICULAR DISEASE:

Approximately 50 million Americans suffer from diverticulosis, where small bulges or sacks are created in the walls of the colon. Sufferers may experience constipation alternating with diarrhea and may have pain in the

lower left abdomen. Doctors have found that a diet high in fiber is beneficial in relieving the symptoms in most cases.

IRRITABLE BOWEL SYNDROME (IBS):

This disorder is characterized by the irregularity of muscular contractions which normally move fecal mass through the colon, resulting in diarrhea, constipation or both. IBS may coincide with a high degree of emotional distress. Dietary fiber seems to reduce the abdominal discomfort and allows the colon to relax, resulting in consistent bowel movements on a regular basis.

COLON CANCER:

It is believed by some experts that dietary fiber may absorb and remove toxic substances that are deposited in the intestines, reducing the amount of time these substances are in contact with the colon and thereby reducing the potential for colon cancer. KONSYL may be prescribed for high risk individuals to help prevent or reduce the risk of developing colon cancer in the future.

CARDIOVASCULAR DISEASE:

Recent studies indicate that soluble fiber (as in KONSYL) may lower overall cholesterol levels. These reports show that decreasing fat intake, and increasing consumption of soluble fiber, induces lowering the level of "LDL - the 'bad'" cholesterol in the blood. LDL is the type of cholesterol which can clog arteries and can lead to heart disease.



Products	Size of Serving	Fiber Grams Per Serving	Calories Per Serving
BREAD			
Whole Wheat	1 slice	2.11	70
Rye	1 slice	1.72	70
White	1 slice	.50	70
CEREAL			
Oat Bran	1 ounce	4.06	110
Shredded Wheat	1 ounce	2.64	90
Corn Flakes	1 ounce	.45	110
RICE			
Brown	1/2 cup	5.27	109
White	1/2 cup	1.42	133
SPAGHETTI	2 ounces	2.56	220
VEGETABLES			
Broccoli	1/2 cup	2.58	22
Brussels Sprout	1/2 cup	2.00	30
Corn	1/2 cup	3.03	89
Egg Plant	1/2 cup	.96	13
Green Peas	1/2 cup	3.36	67
Lettuce (raw)	1/2 cup	.24	5
Potato (baked w/ skin)	1/2 cup	2.97	57
Spinach	1/2 cup	2.07	2
Squash (baked)	1/2 cup	2.87	57
Tomato (raw)	1/2 cup	1.17	19
Zucchini	1/2 cup	1.26	24
BEANS			
Green (canned)	1/2 cup	1.39	26
Kidney	1/2 cup	5.48	100
Lima	1/2 cup	4.25	96
Pinto	1/2 cup	5.33	101
FRUITS (raw)			
Apple (with peel)	1 medium	2.76	81
Apricots	1 cup	3.13	74
Banana	1 medium	2.19	105
Blackberries	1 cup	7.20	74
Boysenberries	1 cup	7.20	74
Grapefruit	1 medium	3.61	92
Grapes	1 cup	1.12	114
Orange	1 medium	3.14	65
Pear (with peel)	1 medium	4.32	98
Prunes (canned)	1 cup	13.76	246
Raspberries	1 cup	7.50	62
Strawberries	1 cup	3.87	46
Watermelon	1 slice	1.93	152
KONSYL	1 tsp.	6.00	3

Adding a teaspoon of KONSYL to your daily diet will surely help to attain the healthful goal of 25-35 grams of fiber a day.

Please note the chart on the back, and

estimate how many grams of fiber you are currently consuming. Then use the same chart to make a plan for increasing the fiber in your diet. How close will you come to reaching the goal of 25-35 grams of fiber each day?



► Here are a few reminders when increasing fiber in your diet:

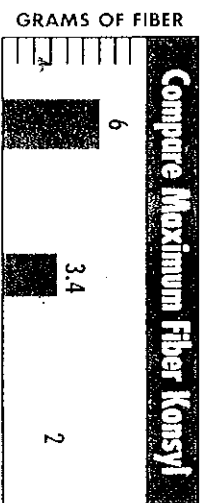
- Add fiber to the diet gradually
- Drink plenty of water: 8 glasses of water per day while consuming a high fiber diet will prevent constipation.
- Good sources of fiber are whole grain cereals, beans, peas and lentils; fruits and vegetables, and whole grain breads, brown rice and whole grain flours.
- If you are falling short of the goal of consuming 25-35 grams of fiber daily, consider adding a fiber supplement, KONSYL (6 grams of soluble fiber), to your daily routine.

FIBER SUPPLEMENTS

So you probably need a fiber supplement. **All fiber supplements are not equal!**

When a physician recommends a fiber supplement, it is likely to be a psyllium-containing supplement. Psyllium is a rich source of SOLUBLE fiber. Physicians, pharmacists and dietitians recommend KONSYL because it is the **ONLY** fiber supplement that contains 100% psyllium providing 6 grams of soluble fiber per dose. Also, unlike many other fiber supplements, KONSYL contains no sugar and no sugar substitutes. KONSYL is all natural and is safe to use daily during pregnancy and while nursing.

One dose of KONSYL provides 6 grams of psyllium compared to others that supply 3.4 grams per dose or less. Thus, with KONSYL the patient gets more fiber per dose, requiring fewer doses each day.



MetamucilSM, CitrucelSM and FiberconSM are registered trademarks of Procter & Gamble, Inc. SanitidineSM is a trademark of Parke-Davis Corporation.

WHEN SHOULD A FIBER SUPPLEMENT BE TAKEN?

KONSYL, and other fiber supplements, may be taken at any time of the day. Unlike harsh

FIBER FACTS

Straight Talk About Dietary Fiber

DIETARY FIBER - WHAT IS IT?

- SOLUBLE FIBER
- INSOLUBLE FIBER

WHO NEEDS TO INCREASE DIETARY FIBER?

HOW CAN I INCREASE MY FIBER INTAKE?

WHEN SHOULD A FIBER SUPPLEMENT BE TAKEN?

HOW WILL INCREASED FIBER BENEFIT YOU?

A discussion by
 Michele L. Phillips, RD,
 Clinical Nutrition Manager
 Washington Adventist Hospital
 Takoma Park, Maryland



Fiber is nature's remedy.

Fiber may help fight or even prevent some of the most common digestive ailments.

WHAT IS IT?

WHO DOES IT AFFECT?

WHAT'S THE TREATMENT?

HOW DOES FIBER HELP?

Hemorrhoids

Hemorrhoids are caused by blood swelling the delicate tissue in and outside the rectum. Common symptoms include: pain, itching, swelling and bleeding in the rectal area.

All ages, although hemorrhoids are most common in pregnant women and adults over 30.

Your doctor may suggest sitz baths, creams or ointments. He or she may also recommend bulk fiber laxatives to reduce strain on the rectal area.

Fiber may create softer larger stools, reducing straining and helping sensitive tissue heal faster, naturally.

Anal Fissures

Occasional bleeding and discomfort in the rectal area. If bleeding persists for more than a couple of days, you may want to consider consulting your physician.

All ages, although they become more common as people get older.

Normally, fissures should heal themselves within a couple of days; however, if you do continue to experience symptoms, you should see your doctor.

By creating softer, larger stools, fiber can help reduce strain on the rectal area and may reduce the incidence of fissures.

Irritable Bowel Syndrome (IBS)

IBS is a disruption of the digestive system's rhythmic process. When this "syndrome" occurs, a pattern of symptoms such as abdominal pain, constipation, diarrhea and gas may cause discomfort in several areas of the digestive tract.

All ages, although first cases usually present themselves in children and younger adults. Women account for a higher percentage of patients who actually see their doctor for IBS.

Your doctor may recommend a variety of medications, reduction of spicy, greasy, and fatty foods, carbonated beverages, chewing gum and alcohol. A high-fiber diet also may help.

Fiber may regulate bowel movements and create softer, larger stools. As a result, fiber may reduce the strain on abdominal tissue and lessen pain.

Diverticular Disease

Diverticular disease occurs when small pouches, called diverticula, form along the inner lining of the large intestine. Symptoms may include cramping in the abdomen or tenderness on your left side.

All ages, although diverticular disease is most common in people over 40.

If there are no symptoms with uncomplicated diverticula in the colon, there's no treatment necessary. But, uncomplicated diverticulosis can move to more serious diverticulitis, in which bed rest, hospitalization, intravenous feeding, antibiotics and sometimes surgery may be necessary.

Fiber may help the digestive system work more efficiently, thereby reducing strain on the colon.

Constipation

Hard, infrequent stools caused by inefficient water absorption in the stools.

All ages, although irregularity is most commonly associated with diet. Pregnant women and older adults also have a higher incidence.

Bulk fiber and exercise, particularly walking, can play a role in reducing the incidence of constipation.

Fiber regulates naturally by adding bulk to the diet. And, unlike stimulant laxatives, bulk fiber supplements are not habit forming.

You've heard about it and you've read about it. And now your physician is recommending it for you: a high fiber diet.

You're not alone—most Americans would benefit from adding more fiber to their current diet. The good news is, it's easy to do. What's more, a high fiber diet can provide long-term benefits for your health.

In this booklet we provide you with the latest information about dietary fiber: what it is, why it's important, and the best sources for it. Plus, we offer easy and good-tasting ways to add fiber to your diet.

Created with the help of nutritionists and physicians, this booklet is designed to answer some of the most commonly asked questions about fiber and provide you with general guidelines. For specific guidance, follow your physician's instructions completely.

What Is Fiber?

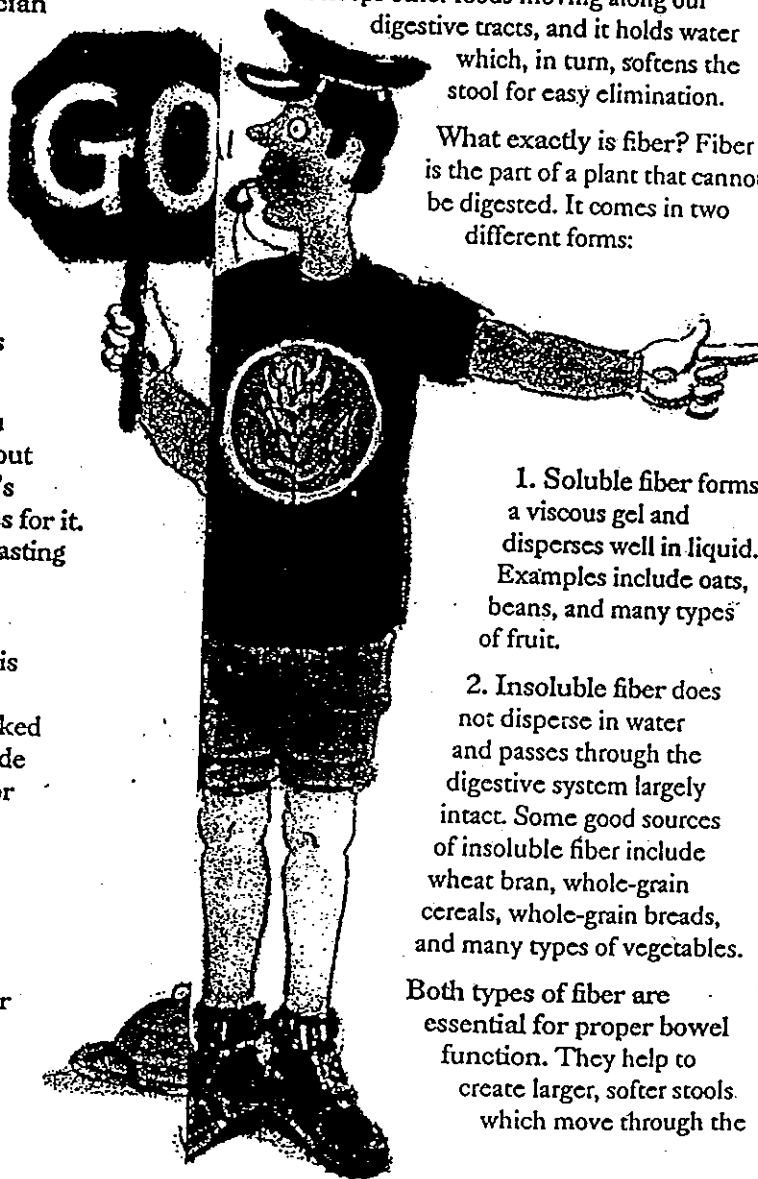
Fiber is an important part of our diet. It furnishes no nutrients, vitamins, or minerals. It isn't even absorbed into our bodies.

So why do we need fiber? Fiber adds bulk that keeps other foods moving along our digestive tracts, and it holds water which, in turn, softens the stool for easy elimination.

What exactly is fiber? Fiber is the part of a plant that cannot be digested. It comes in two different forms:

1. Soluble fiber forms a viscous gel and disperses well in liquid. Examples include oats, beans, and many types of fruit.
2. Insoluble fiber does not disperse in water and passes through the digestive system largely intact. Some good sources of insoluble fiber include wheat bran, whole-grain cereals, whole-grain breads, and many types of vegetables.

Both types of fiber are essential for proper bowel function. They help to create larger, softer stools which move through the

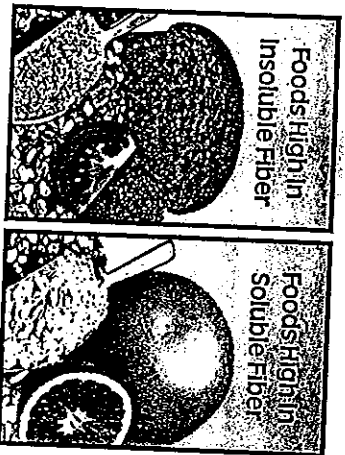


Fiber Facts

Soluble versus insoluble. Soluble fiber, which dissolves in water, is found in citrus fruits, oat bran, peas and beans. Good sources of insoluble fiber include wheat bran and some vegetables. Both types of fiber can promote regularity, but a 100% soluble fiber, like the one in CITRUCCEL, may be easier to take because it is grit-free.

Non-fermentable. Fermentable fibers may be digested by bacteria in the colon and produce gas in the large intestine. People who use these types of fibers may feel bloated or cramped. Non-fermentable fibers, on the other hand, are less likely to produce gas in the large intestine and may be easier on your digestive system. CITRUCCEL (Methylcellulose) is a non-fermentable fiber.

Taste. The better a therapeutic fiber tastes, the more likely you are to take it. And, there are therapeutic fibers available that consumers say taste good.



Nonallergenic. In rare instances, some fibers, such as psyllium, can actually cause severe allergic reactions. There are fibers available that are nonallergenic, such as CITRUCCEL (Methylcellulose).

Effective. A fiber supplement may be just as effective as high fiber food in helping maintain regularity. Follow your doctor's dosage instructions to ensure you're getting the right amount.

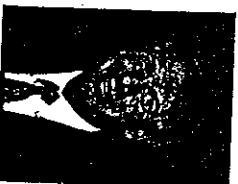
Safe. Therapeutic fibers, as opposed to chemically stimulating laxatives, are a safe, natural way to ensure regularity.

"The Importance of Fiber", Berkeley Wellness Letter, April 1992
"Hemorrhoids", Health News, February 1990, p. 4
The Merck Manual, 1992, pp. 808-810, 854-856, 938

Prevention's New Encyclopedia of Common Diseases, 1984,
pp. 155-157, 204-205, 264-269, 559-561, 688-690

Other data on file at SmithKline Beecham Consumer Healthcare, Inc.

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The High-Fiber Diet

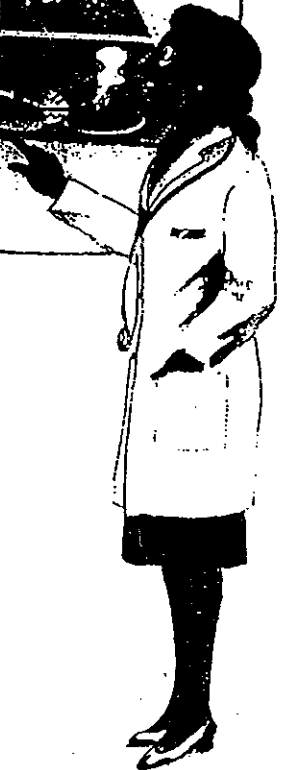
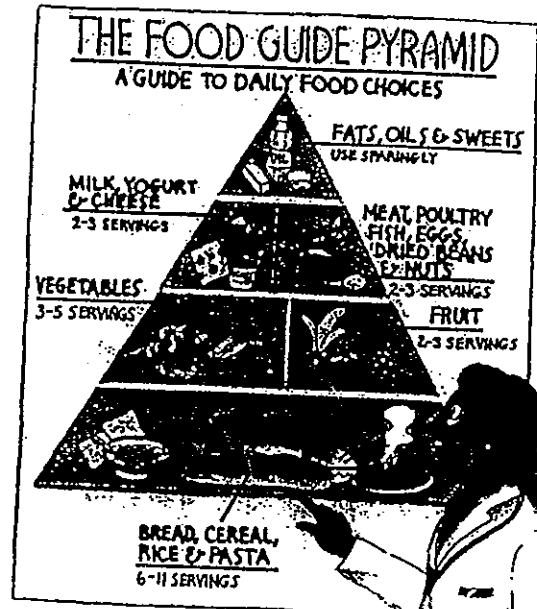
According to many nutrition experts, we should be eating between 20 and 35 grams of fiber daily. If you are like most Americans, however, you're only averaging 10 to 15 grams a day. This means you may need to double or even triple your fiber intake.

You don't have to totally rearrange your diet to accommodate more fiber. You can begin by substituting high-fiber foods for low-fiber ones. Switch your bakery habits from white bread and rolls to whole-grain breads. Try brown instead of white rice. And most easily of all, add fresh fruits and vegetables to your diet.

Your general rule of thumb should be at least one serving of bran or whole grain in every meal. Try this sample menu:

Breakfast—Whole grain cereal and/or toast.
Banana.

Lunch—Sandwich on whole-grain bread.
Carrot sticks.



digestive tract more easily. The secret to getting enough soluble and insoluble fiber is to eat a well-balanced diet that includes a variety of high-fiber foods. (See the chart on page 14 for specific examples.)

Long-Term Benefits Of Fiber

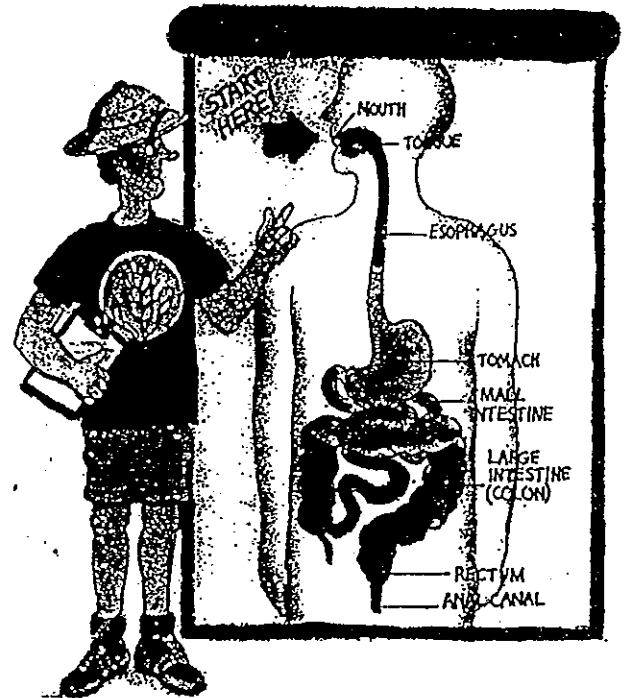
Many researchers believe that a lack of fiber in the diet is implicated in digestive tract-related diseases. Constipation can result from lack of fiber and fluid in the diet. And straining and pressure resulting from constipation may lead to diverticular disease and hemorrhoids. Fiber helps maintain normal bowel function to prevent constipation and its potential complications.

Most high-fiber foods are comparably low in calories and fat. They also create a feeling of satiety since they typically take longer to chew.

Fiber And Your Digestive System

To help understand why a high-fiber diet is important, let's take a quick tour of your digestive system.

Like a long, winding tube, the digestive system carries food through your body, sending nutrients to the bloodstream and waste products through the large intestine to be eliminated. Here's how it works:



- The digestive process begins in your mouth. Your teeth and saliva break up the food into small pieces, allowing it to go through the esophagus into the stomach.
- The stomach breaks down the food into smaller pieces, preparing it to travel on to the lower part of the digestive tract.
- After leaving the stomach, the food passes into the small intestine. Here the nutrients from the food are further broken down and absorbed into the bloodstream.

