Texas Cooperative EXTENSION
The Texas A&M University System

Nutri-Facts

Issue #9

In this issue: Feast on Fiber for Better Health

Contents:

Greetings all!

Grandma always said we need "roughage" in our diets. Unfortunately, most Americans aren't following this advice. Currently, the average intake of dietary fiber is around 15 grams, less than the 20-35 grams recommended by health experts.

This issue focuses on dietary fiber including the proposed health benefits, general recommendations, and tips for increasing one's intake. An agent information sheet, a two-page consumer fact sheet along with a brief news release is included.

As always, I am open to ideas and suggestions for future issues.

Eat Well!

Prepared by Jenna Anding, PhD, RD, LD, Extension Nutrition Specialist, 1/01. Revised June 2005.

Agent Information Sheet, Nutri-Facts #9

What is dietary fiber?
Technically speaking, fiber is a class of plant compounds that are not digested by **human digestive enzymes**. In other words, there is not just one single type of fiber. Some fibers are digested by bacteria that are naturally found in our digestive track.

What are the two major categories of dietary fiber?
The two major categories of fiber are soluble and insoluble. A soluble fiber forms a gel when mixed with a liquid. When included as part of a healthful diet, soluble fibers can help lower blood cholesterol levels, helping reduce the risk of developing heart disease. Some research even suggests that for people with diabetes, soluble fibers may help control blood sugar. **Sources of soluble fibers** include dried beans and peas, oats, barley, and many fruits and vegetables including apples, oranges, and carrots.

Insoluble fibers are often called "roughage." This type of fiber gives bulk to our stools, making it easier for the body to get rid of waste. Insoluble fibers also reduce the length of time that waste products are in the digestive system. This may reduce our risk for colon cancer. **Foods that contain insoluble fibers** include whole-wheat products, wheat and corn bran, cauliflower, green beans, and the skins of fruits and root vegetables.

Note: A few years, the results of a large study suggested that dietary fiber might not be protective against colon cancer. A paper published in the journal *Nutrition* by Dr. Joanne Lupton (faculty of nutrition at Texas A&M University) identified several reasons why there may be conflicting research findings when it comes to the cancer-preventing properties of fiber:

(1) Fiber is not one single compound but rather a **class of compounds**, each with its own distinct properties. We can't lump all fibers together and discuss them as if they were one.

(2) Some fibers are more fermentable than others. The extent to which a fiber is fermentable may play a role in its protective effect against colon cancer.

(3) The extent to which fermentable fibers are protective (with respect to colon cancer) may depend on the type of fat in the diet.

Other health benefits of dietary fiber
In addition to the reduced risk for developing heart disease and colon cancer, research suggests that a diet rich in fiber is a healthful method for weight management. Fiber can also help prevent constipation, diverticulosis, and hemorrhoids.

How much fiber should we include in our diets?
Nutrition experts recommend that adults try to include 20 to 35 grams of fiber as part of a healthful diet. This recommendation is based on calorie intake. As a general guideline, experts recommend about 14 grams of fiber per 1,000 calories consumed. Five to 10 grams should be

soluble. Currently, the average American adult consumes about 15 grams of fiber. The recommended levels for fiber among children are a little different. Children up to the age of 20 should estimate their fiber needs by taking their age in years and adding 5. For example, the fiber recommendation for a 13 year old child would be 13+5=18 grams/day.

Use the Nutrition Facts label to boost your fiber intake

The daily value (DV) for fiber is 25 grams. Try to select foods that provide at least 10% of the DV for fiber. Also, look for terms like "high fiber" (has 5+ grams of fiber per serving), "good source" (2.5 to 4.9 grams of fiber per serving), or "more or added fiber" (at least 2.5 grams more per serving as compared to the traditional food) on the label to help choose foods rich in fiber.

Tips for bulking up your meals with dietary fiber

✓ Eat a variety of foods, including at least 5 servings of fruits and vegetables each day.
✓ Choose whole grain foods like 100% whole wheat bread, oatmeal, and brown rice.
✓ Eat cooked beans and peas at least twice a week.
✓ Read food labels to compare the fiber content of food. Try to choose foods that have at least 10% of the DV for fiber.

IMPORTANT: When increasing dietary fiber intake, be sure to do it gradually to avoid/reduce any unpleasant side effects (i.e. flatulence or gas). Also, be sure to drink plenty of water to avoid constipation.

Recipe for increasing dietary fiber intake.

Pasta e Fagioli

What you need:

1 pound ground beef
1 small onion, diced (1 cup)
1 large carrot, julienned (1 cup)
3 stalks celery, chopped (1 cup)
2 cloves garlic, minced
2 14.5 ounce cans diced tomatoes
1 15-ounce can red kidney beans (with liquid)
1 15-ounce can great northern beans (with liquid)
1 15-ounce can tomato sauce
1 12-ounce can V-8 juice
1 tablespoon white vinegar
1 teaspoon oregano
1 teaspoon basil
½ teaspoon pepper
½ teaspoon thyme
½ pound ditali pasta

How to make it.

1. Brown the ground beef in a large saucepan or pot over medium heat. Drain off most of the fat.
2. Add onion, carrot, celery, and garlic; saute for 10 minutes.
3. Add remaining ingredients, EXCEPT pasta, and simmer for 1 hour.
4. About 50 minutes into simmer time, cook the pasta in 1 ½ to 2 quarts of boiling water over high heat. Cook for 10 minutes or just until pasta is al dente.
5. Add the pasta to the large pot of soup. Simmer for 5-10 minutes and serve.

SEE MY NOTES ON THE NEXT PAGE

Source: *Top Secret Recipes* (available at www.topsecretrecipes.com)

This is a great source for recipes that taste just like some of the foods served at our favorite restaurants. The recipes are copyright protected, but the author gave me permission to send it to you knowing that you will probably be passing it on to interested consumers. Per his request, if you pass this recipe on to consumers, **PLEASE** be sure to include the above web site. Also, the author of this web site, Todd Wilbur, has written several recipe books that feature cloned recipes of favorite restaurant foods. You can find these books at www.amazon.com.

Note from Jenna: This recipe includes multiple ingredients, but other than the ground beef, pasta, vinegar, and spices, the ingredients are primarily canned foods. Other than thyme, the ingredients are inexpensive, especially if you use the store brands. **To comply with copyright laws, I have to give you the recipe as it is published. You need to do the same if you pass the recipe on to consumers.** However, when I make this soup, I don't use any vinegar and I use small shell macaroni (whole what is another option!) instead of the ditali pasta. Also, I don't cook the pasta separately. Instead, I add it to the soup after it has been simmering for 50 minutes and let it cook for about 10 minutes or until it is al dente. Because some of the spices may be expensive, one could buy diced tomatoes that have Italian seasonings added. These tomatoes cost more than plain diced tomatoes, but it might be cheaper in the long run instead of buying all of the spices (especially if one does not use them often). This recipe freezes very well which is good because it makes a **LOT** of soup. Serve with tossed salad and some hot bread and you have a great meal!

Number of servings: 8 to 10 servings
Cost per serving: $1.50 (based on the assumption that one would have to buy **all** of the ingredients). I did not cost out the spices because whether you use ½ teaspoon or the whole box, you still have to pay the same amount when you check out at the store.
Nutritional analysis (per serving based on 10 servings):
325 calories
7 grams of fat (about 19% of calories from fat)
35 milligrams of cholesterol
8.5 grams of dietary fiber (2 of those grams are soluble fibers) (> 30% DV for fiber !!!)

One serving of this soup also provides 35% DV for vitamin A, 52% DV for vitamin C, 22% DV for folate, and 27% DV for iron. For individuals watching their sodium intake, choose lower sodium versions of the canned beans, tomatoes, and tomato juice.

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Feast on Fiber for Better Health

What is fiber?
Generally speaking, fiber refers to a group of compounds found in plants (fruits, vegetables, and grain products) that are not digested by humans.

What is the difference between soluble and insoluble fibers?
Soluble fibers form a gel when they are mixed with a liquid. When added to our daily diets, soluble fibers can help lower blood cholesterol levels. This may lower our risk for getting heart disease. For some persons with diabetes, soluble fibers may help control blood sugar. Food sources of soluble fibers include oats, peas, beans, apples, and oranges.

Insoluble fibers are often called "roughage." These types of fiber give bulk to stools, making it easier for the body to get rid of waste. Insoluble fibers also reduce the amount of time that waste products are in the digestive system. This may lower our risk for colon cancer. Sources of insoluble fibers include whole-wheat foods, cauliflower, green beans, and the skins of fruits and root vegetables.

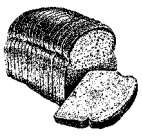
Other health benefits of fiber
Along with controlling blood sugar levels and reducing our risk for chronic disease, including dietary fiber in our meals and snacks may help prevent constipation, hemorrhoids, and diverticulosis. Foods high in fiber also help us feel full, thus reducing our food intake. This may help individuals manage their weight.

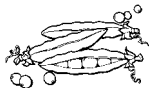
How much fiber do we need?
Adults should try to include 20 to 35 grams of fiber in their daily diets. Five to 10 of those grams should be soluble fiber. Children and teens need amounts of dietary fiber that are equal to their age plus five. For example, a six year old child would need 11 grams of fiber (6 + 5 = 11).

Tips for increasing the fiber in your diet

Eat a variety of plant-based foods including at least 5 servings of whole fruits & vegetables each day.

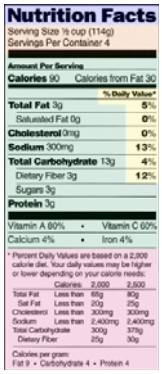
Choose whole grain foods like 100% whole wheat bread, brown rice and oatmeal.





Eat cooked dry beans and peas at least twice a week.

Read food labels and compare the fiber content of food. Choose foods that have at least 10% of the daily value (DV) for fiber.



Enjoy fruits and vegetables with the edible skins on.

When increasing fiber intake, do it gradually and be sure to drink plenty of water!

Fiber Content of Selected Foods

Food	Serving Size	Total fiber* (grams)	Soluble fiber* (grams)	Insoluble fiber (grams)
Pinto beans	½ cup cooked	7.5	2.5	5.0
Pear (with peel)	1 medium	4.0	1.0	3.0
Raisin bran cereal	1 ounce	3.5	trace	3.5
Whole wheat spaghetti	½ cup cooked	3.0	.5	2.5
Apple with peel	1 medium	2.5	1.0	1.5
Baked potato with skin	1 small	2.5	.5	2.0
Spinach, canned	½ cup	2.5	.5	2.0
Banana	1 medium	2.0	.5	1.5
Broccoli	1 cup, raw	2.5	.5	2.0
Oatmeal	½ cup cooked	2.0	1.0	1.0
Brown rice	½ cup cooked	2.0	.5	1.5
Carrot with peel	1 medium	2.0	.5	1.5
100% whole wheat bread	1 slice	2.0	.5	1.5
Instant rice	½ cup cooked	.5	0	.5

* Rounded to the nearest one-half of a gram

For more information about increasing your fiber intake, contact your local county Extension agent or registered dietitian.

Texas Cooperative EXTENSION
The Texas A&M University System

Prepared by Jenna Anding, Ph.D., R.D., assistant professor and Extension nutrition specialist, December 2000; revised June 2005.

News Release

Want to eat nutritious foods and reduce your risk for chronic disease at the same time? Try adding fiber-rich foods to your daily diet, says Jenna Anding, Ph.D., R.D., a registered dietitian and Extension nutrition specialist with Texas Cooperative Extension. "Americans often fall short of meeting the 25 grams of fiber recommended by experts," says Anding. This is a concern because of the numerous health benefits associated with consuming a healthy diet that is rich in fiber.

All fibers are not created equal

"Most of us think of fiber as a single compound that is found in plants, but that is not exactly correct," notes Anding. In fact, the term fiber refers to a group of plant compounds; each with different functions and benefits. They are often categorized as either soluble or insoluble. Soluble fibers form a gel when mixed with a liquid. When included as part of a healthful diet, soluble fibers can help lower blood cholesterol levels, thus reducing our risk for developing heart disease. For individuals with diabetes, consuming adequate amounts of soluble fibers may help control blood sugar. Food sources of soluble fibers include dried beans and peas, oats, barley, and many fruits and vegetables including apples, oranges, and carrots.

The other class of dietary fibers is known as insoluble fiber. Often called "roughage," this class of fiber helps give bulk to our stools, making it easier for the body to get rid of waste. Some forms of insoluble fiber may also have a protective effect against colon cancer. Food sources of these fibers include wheat bran, cauliflower, green beans, and the skins of fruits and root vegetables.

Other proposed benefits of dietary fiber

Consuming adequate amounts of dietary fiber may have benefits other than a reduced risk of chronic disease. Dietary fiber, particularly insoluble forms, helps to soften and add bulk to waste in the intestine. This makes stools softer and easier to eliminate, thus helping to prevent constipation as well as the discomfort that goes with it. For individuals watching their weight, consuming foods rich in fiber help us feel full longer, helping to reduce food intake.

Getting Your Share of Fiber

Most Americans will likely benefit from increasing their intakes of dietary fiber, especially if fiber-rich foods are added in place of foods that are high in saturated fat or refined carbohydrates. To add more bulk to your diet, Anding offers the following tips:

* Choose a variety of plant foods, including 5 servings of fruits and vegetables each day.
* Choose whole grains such as 100% whole wheat bread, whole wheat pasta, or brown rice when possible.
* Eat cooked beans and peas at least twice a week.
* When possible, enjoy fruits and vegetables with the edible skins on.

All fibers, soluble and insoluble, are healthful so don't worry about keeping track of how much of each type you consume. The key is to eat a variety of fiber-containing foods. In addition, when increasing fiber intake, be sure to do it slowly. Otherwise, cautions Anding, "one might experience some unpleasant side effects like bloating and excess gas. " Anding also recommends that individuals increasing their fiber intake also increase their consumption of water and other fluids to avoid constipation. Older Americans and individuals who have had surgery on their

stomach, intestines, colon, or rectum should check with their doctor before adding more fiber to their diets.

Can a person get too much fiber? According to Anding, the answer is yes. Consuming more than 50 grams of fiber a day may reduce the amount of vitamins and minerals absorbed by the body. However, for most Americans this is unlikely given our typical eating habits. For children, too much fiber in their diets may cause them to become full too fast, thus reducing their intake of other nutritious foods. The recommended amount of fiber for a child can be estimated by taking the age of the child and adding the number 5.

To learn more about dietary fibers, contact _____, county Extension agent, at _____.