

# High Fiber Diet :

## **What is Dietary Fiber and why it is so important for your GI and general health ?**

Fiber, also called roughage or bulk, is the part of a plant that provides and maintains the plant's structure. The human body cannot digest fiber having a tremendous impact in the function of the digestive system. Diets that are rich in fiber can help modulate digestion and correct disorders of the large intestine and keep it functioning normally, reducing and/or eliminating uncomfortable symptoms such as constipation , bloating , indigestion , urgency , etc. Moreover, diets that are rich in fiber keep a healthy and rich environment for the naturally occurring bacteria in our digestive system, known as probiotics. What keeps a well-balanced composition of probiotics in our large intestine is the daily intake of the right amount and types of fiber. **In short, dietary fiber is considered the most important prebiotic and consequently the fuel of our digestive system.**

## **How does Dietary Fiber work in improving the GI function?**

**Normalizes bowel movements.** Dietary fiber increases the weight and size of your stool and softens it. A bulky stool is easier to pass, decreasing your chance of constipation. If you have loose , watery stools, fiber may help to solidify the stool because it absorbs water and adds bulk to stool.

**Helps maintain bowel health.** A high-fiber diet may lower your risk of developing hemorrhoids and small pouches in your colon (diverticular disease). Studies have also found that a high-fiber diet likely lowers the risk of colorectal cancer. Some fiber prevents diseases of the colon.

**Lowers Cholesterol levels.** Soluble fiber found in beans, oats , flaxseed and oat bran may help lower total blood cholesterol levels by lowering low-density lipoprotein, or "bad," cholesterol levels. Studies also have shown that high-fiber foods may have other heart-health benefits, such as reducing blood pressure and inflammation.

**Helps control blood sugar levels.** In people with diabetes, fiber- particularly soluble fiber-can slow the absorption of sugar and help improve blood sugar levels. A healthy diet that includes insoluble fiber may also reduce the risk of developing type 2 diabetes.

**Aids in achieving healthy weight.** High-fiber foods tend to be more filling than low-fiber foods, so you're likely to eat less and stay satisfied longer. And high-fiber foods tend to

take longer to eat and to be less “energy dense,” which means they have fewer calories for the same volume of food.

**Help you live longer.** Studies suggest that increasing your dietary fiber intake , especially cereal fiber, is associated with a reduced risk of dying from cardiovascular disease and all cancers.

### **What is the role of Dietary Fiber in Irritable Bowel (IBS)?**

Irritable bowel is one of the most common disorders of the lower digestive tract. There is no disease present with IBS, but it creates bothersome symptoms such as altered bowel habits- constipation, diarrhea or both alternatively. There may also be bloating , abdominal pain , cramps and spasm. An attack of IBS can be triggered by emotional tension and anxiety, poor dietary habits and certain medications. Increasing amounts of fiber in the diet can help relieve the symptoms of IBS by producing soft, bulky stools. This helps normalize the time it takes for the stool to pass through the colon with all its added benefits.

### **What is the role of Dietary Fiber in Colon Polyp formation and Colon Cancer?**

Colon cancer starts out as a colon polyp , a benign mushroom-shaped growth. In time, it grows and in some people it becomes cancerous. It is known that people can inherit the risk of developing colon cancer , but dietary habits are also very important in the formation of polyps and their progression to cancer. There is a very low rate of colon cancer in residents of countries where grains are unprocessed, and their fiber intake represents the main part of their diets. The theory is that in the western world, cancer-containing agents (carcinogens) remain in contact with the colon wall for a longer time and in higher concentrations. High and rich fiber diets as well as low carcinogens exposure to the colon may mean fewer colon polyps and less cancer.

### **What is the role of Dietary Fiber and Diverticular Disease, also known as Diverticulosis?**

Prolonged, vigorous contraction of the colon , usually in the left side, may result in diverticulosis. This increase in pressure causes small and eventually larger ballooning pockets to form. In the majority of cases, these ballooning cause no problems. However , sometimes they may become infected (diverticulitis) or even break (perforate) causing pockets of infection or inflammation immediately outside of the colon. A high-fiber diet may increase the bulk in the stool and thereby reduce the pressure within the colon. By doing so , the formation of pockets is also reduced or possibly even stopped.

Some specialists recommend restricting the following foods in diverticular disease: nuts, poppy seeds, popcorn , corn , caraway seeds, cucumber; as well as fruits and vegetables

with seeds such as strawberries, figs and tomatoes. However, there has never been any medical proof that these foods are injurious. We rather encourage consuming these foods, as their high fiber content would rather add to prevent further diverticular disease and colon polyp formation.

### **What are the types of Dietary Fiber?**

Fiber is commonly classified as soluble (dissolves in water) or insoluble (doesn't dissolve). **Soluble fiber** dissolves in water to form a gel-like material. It can help lower blood cholesterol and glucose levels. Examples of where soluble fiber is found are oats, peas, beans, apples, citrus fruits, carrots, barley and psyllium. **Insoluble fiber** promotes the movement of material through your digestive system and increases stool bulk, so it can be of benefit to those who struggle with constipation or irregular stools. This type of fiber is found in whole-wheat flour, wheat bran, nuts, beans and vegetables, such as cauliflower, green beans and potatoes, are good sources of insoluble fiber. The amount of soluble and insoluble fiber varies in different plant foods. To receive the greatest health benefit, it is recommended to eat a **wide variety** of high-fiber foods on a **regular basis**, ideally as frequently as daily.

The downside of large amounts or rapidly introduced soluble fiber in the diet is that it can be metabolized by gas forming bacteria in the colon. These bacteria are harmless but for some people it may represent increased abdominal distention, gas and/or flatus. If this is a concern, it is recommended to carefully test different types and quantities of soluble fiber to see if they contribute to intestinal gas.

### **What is the role of Dietary Fiber Supplements?**

As previously described, some people don't tolerate well foods rich in fiber. If you can't consume enough fiber in your diet alone, certain supplements are available. These products absorb water and produce the bulk necessary for the digestive tract to perform naturally. They help create a soft and well-formed stool. For this reason, they can be very useful in preventing and treating digestive tract disorders. Examples of such supplements include Metamucil and Konsyl. These products contain psyllium mucilloid and come from the seed of the psyllium plant. Other options include Citrucel, and Fibercon, which come from hemicellulose and polycarboxisal respectively; also, natural occurring components of plants.

### **What does a diet rich in fiber look like ?**

To improve your diet and fetch all the benefits of a high-fiber diet, identify and add foods that contain proportionally more Dietary Fiber in your day to day. The golden number that anyone should work towards is daily intake 35g of fiber for men and 25g for woman. This may seem as a simple task but getting close to this number requires attention,

planning and some discipline. Consider some of the following specific recommendations and refer to the **High-Dietary Fiber Table** a successful and healthy diet:

1. Always favor whole foods , specifically whole-grain foods such as bran cereals, brown rice , brown breads, etc.
2. Add fresh seasonal fruits (including the skin and pulp) and dried or stewed fruits (i.e. prunes , apricots , figs, etc.) as frequent and small daily snacks (i.e. three to four times a day)
3. Include root vegetables (carrots, turnips , potatoes, etc.) on regular bases.
4. Raw or fresh vegetables high in fiber should be the staple of most daily meals.
5. Remember to spend your time, money and creativity in the periphery of groceries stores where all these products are found.
6. Colorful meals and snacks ,made of seasonal and locally sourced foods are usually rich in fiber and always the healthiest alternatives.

### **Special Considerations :**

To improve your diet, add foods that contain more dietary fiber. You can include some or all of the following :

1. Whole-grain foods (such as bran cereals) and breads (those made with whole wheat grains).
2. Fresh fruits (including the skin and pulp).
3. Dried or stewed fruits (such as prunes, raisins , or apricots).
4. Root vegetables (such as carrots, turnips, or potatoes).
5. Raw or fresh vegetables , such as cabbage. (Lettuce is actually low in fiber.)

Eating bran cereal in the morning is often the easiest way to obtain fiber. All-Bran, 100% Bran , Bran Buds , oat bran , oatmeal , and Raisin Bran are some of the high-fiber cereals presently available. Bran can cause rumbling intestinal gas and even some mild cramping, so it should be eaten in small amounts at first. The amount can be increased as the body gets used to it. The goal should be one to two large ,soft , formed stools a day.

You should also try to follow these dietary rules:

1. Drink plenty of liquids, including fruit or vegetable juices and water. Drink at least six cups of water or fluid a day.

2. Eat slowly. Chew your food thoroughly. This allows the saliva and digestive juices of the stomach of the stomach , liver, and pancreas to break down food more easily. It may also help prevent problems from developing in the lower digestive tract.
3. Eat your meals at regular intervals.

### **Fiber Contents of Foods**

Goal (25 or 35 grams per day)

Common servings of foods containing dietary fiber are shown below. Increase your intake by including fiber from all sources. (Foods from meat and dairy groups are not good sources.) Foods that are good sources of fiber are also typically low in fat.

<b>Food</b>	<b>Serving Size</b>	<b>Fiber (gm)</b>
<b>Cereals:</b>		
All-Bran	1/3 cup	8.5
Bran Buds	1/3 cup	7.9
Bran Chex	2/3 cup	4.6
Cheerios	1 ¼ cup	1.1
Corn Bran	2/3 cup	5.4
Corn Flakes	1 ¼ cup	0.3
Cracklin Bran	1/3 cup	4.3
Crispy Wheats n' Raisins	¾ cup	1.3
40% Bran	¾ cup	4.0
Frosted Mini-Wheats	4 biscuits	2.1
Graham Crackos	¾ cup	1.7
Gape Nuts	¼ cup	1.4
Heartland Natural Cereal	¼ cup	1.3
Honey Bran	7/8 cup	3.1
Most	2/3 cup	3.5
Nutri-Grain, barley	¾ cup	1.7
Nutri-Grain , corn	¾ cup	1.8
Nutri-Grain , rye	¾ cup	1.8
Nutri-Grain , wheat	¾ cup	1.8
100% Bran	½ cup	8.4
100% Natural Cereal	¼ cup	1.0

Oatmeal, (cooked regular , quick, or instant	¾ cup	1.6
Raisin Bran-type	¾ cup	4.0
Rice Krispies	1 cup	0.1
Shredded Wheat	2/3 cup	2.6
Special K	1 1/3 cup	0.2
Sugar Smacks	¾ cup	0.4
Tasteeos	1 ¼ cup	1.0
Total	1 cup	2.0
Wheat Chex	2/3 cup	2.1
Wheaties	1 cup	2.0
Wheat n' Raisin Chex	¾ cup	2.5
Wheat germ	¼ cup	3.4

Food	Serving Size	Fiber (gm)
<b>Pasta and Rice:</b>		
Macaroni	1 cup	1.0
Rice , Brown	½ cup	1.0
Rice , polished	½ cup	0.2
Spaghetti , regular	1 cup	1.1
Spaghetti , wheat	1 cup	3.9

Food	Serving Size	Fiber( gm)
<b>Juices:</b>		
Apple	½ cup	0.4
Grapefruit	½ cup	0.5
Grape	½ cup	0.6
Orange	½ cup	0.5
Papaya	½ cup	0.8

Food	Serving Size	Fiber(gm)
<b>Nuts:</b>		

Almonds	10 nuts	1.1
Filberts	10 nuts	0.8
Peanuts	10 nuts	1.4
Lentils, cooked	½ cup	7.3
Lima beans , cooked	½ cup	4.5
Navy beans , cooked	½ cup	6.0

### Sample Menu

Breakfast	Lunch	Dinner
<ul style="list-style-type: none"> <li>• Grapefruit ½</li> <li>• Oatmeal ¾ cup</li> <li>• Raisins 2 Tbsp</li> <li>• Whole wheat toast 2 slices</li> <li>• Margarine 2 tsp</li> <li>• Jelly/jam 2 Tbsp</li> <li>• Skim milk 1 cup</li> <li>• Coffee ¾ cup</li> </ul>	<ul style="list-style-type: none"> <li>• Vegetable soup 1 cup</li> <li>• Lean hamburger patty 3 oz.</li> <li>• Multi-grain bun (1)</li> <li>• Tomato slices (2)</li> <li>• Lettuce</li> <li>• Baked beans ½ cup</li> <li>• Medium apple (1)</li> <li>• Oatmeal cookie (1)</li> <li>• Skim milk 1 cup</li> </ul>	<ul style="list-style-type: none"> <li>• garden salad; lettuce 1 cup , cucumber 1/8 cup , tomato ½ cup , bean sprouts 1/8 cup , salad dressing 2 Tbsp</li> <li>• broiled chicken 3 oz</li> <li>• brown rice ½ cup</li> <li>• broccoli with cheese sauce ½ cup</li> <li>• Pumpernickel bread 1 slice</li> <li>• Margarine 1 tsp</li> <li>• Strawberries ½ cup with plain low-fat yogurt ½ cup</li> <li>• Skim milk 1 cup</li> </ul>

Snack		
<ul style="list-style-type: none"> <li>• Bran muffin</li> <li>• Margarine 1 tsp</li> <li>• Orange juice ½ cup</li> </ul>		

### This Sample Diet Provides the Following

Calories	2,491	Fat	89gm
Protein	121 gm	Sodium	3,585 mg
Carbohydrates	318 gm	Fiber	38gm

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<b>Food</b>	<b>Serving Size</b>	<b>Fiber (gm)</b>
<b>Fruit:</b>		
Cherries, sweet	10	1.2
Grapefruit	½	1.2
Grapes	20	0.6
Orange	1	2.6
Peach (with skin)	1	1.9
Peach (without skin)	1	1.2
Pear (with skin)	½ large	3.1
Pear (without skin)	½ large	2.5
Pineapple	½ cup	1.1
Plums, damson	5	0.9
Prunes	3	3.0
Raisins	¼ cup	3.1
Raspberries	½ cup	3.1
Strawberries	1 cup	3.0
Watermelon	1 cup	0.4
Apple (with skin)	1	3.5
Apple (without skin)	1	2.7
Apricot	3	1.8
Apricot, dried	5 halves	1.4
Banana	1	2.4
Blueberries	½ cup	2.0
Cantaloupe	¼ melon	1.0

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<b>Food</b>	<b>Serving Size</b>	<b>Fiber(gm)</b>
<b>Legumes:</b>		
Baked beans/tomato sauce	½ cup	8.9
Dried beans , cooked	½ cup	4.7
Kidney beans , cooked	½ cup	7.3
Lentils, cooked	½ cup	7.3
Lima beans , cooked	½ cup	4.5
Navy beans , cooked	½ cup	6.0



<b>Food</b>	<b>Serving Size</b>	<b>Fiber(gm)</b>
<b>Breads :</b>		
Pumpernickel bread	1 slice	1.0
Raisin bread	1 slice	0.6
White bread	1 slice	0.4
Whole wheat bread	1 slice	1.4
Bagels	1	0.6
Bran muffins	1	2.5
Cracked wheat bread	1 slice	1.0
Crisp rye bread	2 crackers	2.0
Crisp wheat bread	2 crackers	1.8
French Bread	1 slice	0.7
Italian bread	1 slice	0.3
Mixed grain bread	1 slice	0.9
Oatmeal bread	1 slice	0.5
Pita bread	1 piece	0.4

<b>Food</b>	<b>Serving Size</b>	<b>Fiber (gm)</b>
Vegetables (cooked)		
Asparagus , cut	½ cup	1.0
Beans ( string , green)	½ cup	1.6
Broccoli	½ cup	2.2
Brussels sprouts	½ cup	2.3
Cabbage (red,white)	½ cup	1.4
Carrots	½ cup	2.3
Cauliflower	½ cup	1.1
Corn , canned	½ cup	2.9
Kale leaves	½ cup	1.4
Parsnip	½ cup	2.7
Peas	½ cup	3.6
Potato (with skin)	1	2.5
Potato (without skin)	1	1.4
Spinach	½ cup	2.1
Squash , summer	½ cup	1.4
Sweet potatoes	½	1.7
Turnips	½	1.6
Zucchini	½ cup	1.8

<b>Food</b>	<b>Serving Size</b>	<b>Fiber (gm)</b>
Vegetables (raw):		
Bean sprouts	½ cup	1.5
Celery , diced	½ cup	1.1
Cucumber	½ cup	0.4
Lettuce, sliced	1 cup	0.9
Mushrooms, sliced	½ cup	0.9
Onions , sliced	½ cup	0.9
Pepper,green,sliced	½ cup	0.5
Spinach	1 cup	1.2
Tomato	1	1.5aj