

High Fiber Diet

Author: Frank W. Jackson, M.D.

Prebiotics in your diet or in a supplement naturally restore digestive balance and health. [Learn more . . .](#)

Purpose

Dietary fiber is the part of a plant which is not digested by the stomach or small intestine. Rather, it arrives unchanged in the colon. There, it does two things:

- It provides bulk or roughage and thereby helps promote regularity.
- Far more important, many of these fibers are a food and nourishment source for the myriad numbers of bacteria that normally reside in the colon.

When adequate fiber is consumed, 25-35 grams per day, many amazing health benefits occur in the colon and body.

Function of the Colon

One job of the colon is to complete the digestive process. This occurs by removing excess water from food wastes entering from the small intestine. When wastes pass through the intestines too quickly, not enough water is absorbed. Watery stools and diarrhea are the result. In contrast, if the passage of waste is too slow, too much water is absorbed. This results in hard stools and constipation, which often leads to constipation and straining.

These above facts have long been known. What is now known is that the huge numbers and the great diversity of bacteria within the colon play a vital role in promoting and maintaining good health. These benefits include producing vitamins and enzymes, enhancing the immune system, controlling cholesterol and triglyceride levels, even in the prevention of certain cancers.

Bacteria in the Colon

The huge numbers of bacteria in the colon and the consumed fiber that reaches it are intimately tied together.

- There are trillions upon trillions of bacteria in the human colon, more than 10 times the human cells in the body. There is a reason for this.
- The total number of genes in all these bacteria is 100 times greater than the genes in a person's body. There is a reason for this as well.
- Each person has their own particular make up of bacteria in his or her colon, much like a fingerprint. The only way to change this is to make a permanent change in the fiber intake.
- The bacteria in the colon have been called "super organisms" because of all the wonderful healthful outcomes they can produce.
- The bacteria are your friends. Protect and grow the good ones. Get rid of the bad ones.

The Importance of Dietary Fiber

While there are many types of fiber that interest food chemists, there are only a few that need concern the public:

- *Insoluble Fiber* - This fiber does not dissolve in water, nor is it fermented by the bacteria in the gut. Rather, it retains water and in so doing helps to promote a softer, bulkier stool. This, in turn, may be of importance in sweeping out certain toxins and cancer-causing carcinogens.
- *Soluble Fiber* - These fibers are fermented by colon bacteria. These bacteria need their own nourishment and food source. The health benefits these bugs provide is strictly dependent on the amounts of soluble fiber.
- *Prebiotic Soluble Fiber* - There are specialized types of soluble fibers which have been demonstrated to have the most positive health benefits, as found in established medical research centers. The three that have been definitively proven are inulin, oligofructose and galacto-oligosaccharide.

In summary, all plant fiber has both insoluble and soluble fiber in it. However, the amount varies. Wheat and corn fiber are 90% insoluble, while oats is about 50/50. Artichokes are very high in soluble fiber. Eating 25-35 grams per day of varied plant-based food will provide a well-balanced amount of fiber inulin. A dietary fiber supplement such as Prebiotin™ can also be used.

Health Benefits of Prebiotic Fibers

It is remarkable to know the health benefits that are provided when adequate amounts of prebiotic plant fibers, yet each of these below is supported by medical research in medical research centers and by peer-reviewed medical journals.

- Increase Good Colon Bacteria
- Increase Calcium Absorption
- Enhance Immune System
- Reduce Triglycerides Level
- Control Appetite and Weight
- Reduce Colon Polyp and Cancer Factors
- Increase Satiety and Weight Loss
- Improve Bowel Regularity
- Increase Bone Density
- Decrease Bad Colon Bacteria
- Reduce Allergies and Asthma
- Improve Colon and Body Health
- Decrease Flatus Smell

While prebiotic fibers are distributed widely in nature in small amounts, they are particularly concentrated in the following vegetables:

- Onions
- Garlic
- Bananas
- Leeks
- Artichokes
- Asparagus
- Chicory Root
- Yams
- Wheat (Small Amount)

Prebiotics in your diet or in a supplement naturally restore digestive balance and health. [Learn more . . .](#)

Fiber and Irritable Bowel Syndrome

Irritable bowel syndrome (IBS) is one of the most common disorders of the lower digestive tract. The symptoms of IBS can be quite varied. They can be mostly of one type or a mix of several symptoms such as constipation, diarrhea, crampy abdominal discomfort, bloating and gas. An attack of IBS can be triggered by emotional tension and anxiety, poor dietary habits and certain medications. It is now known that infections in the intestine can lead to long-term IBS symptoms. Increased amounts of fiber in the diet can help relieve the symptoms of irritable bowel syndrome by producing soft, bulky stools. This helps to normalize the time it takes for the stool to pass through the colon. Irritable bowel syndrome, if left untreated, may lead to diverticulosis of the colon.

IBS patients need to be careful of the amount of soluble fiber they consume. The reason for this is that, while the good colon bacteria thrive on these fibers and produce health benefits, the bad gas-forming bacteria may generate excessive gas and subsequent bloating. Thus, prebiotic soluble plant fibers or a dietary prebiotic supplement should be taken in small initial doses and then gradually increased to tolerance.

Fiber and Colon Polyps/Cancer

Colon cancer is a major health problem. This disease is most common in Western cultures. Most colon cancer starts out as a colon polyp, a benign mushroom-shaped growth. In time it grows, and in some people it becomes cancerous. Colon cancer is usually always curable, if polyps are removed when found or if surgery is performed at an early stage. It is now known that people can inherit the risk of developing colon cancer, but diet is important, too. There is a very low rate of colon cancer in residents of countries where grains are unprocessed and retain their fiber. It seems that in the Western world, cancer-containing agents (carcinogens) remain in contact with the colon wall for a longer time and in higher concentrations. So, a large bulky stool may act to dilute these carcinogens by moving them through the bowel more quickly. Less carcinogenic exposure to the colon may mean fewer colon polyps and less cancer.

Additionally, there appear to be substances produced in the colon by the good bacteria that seem to retard certain pre-cancer factors from developing. These are called short-chain fatty acids.

So, the combination of colon bulk and the production of short-chain fatty acids may be cancer-retarding effects.

Fiber and Diverticulosis

Prolonged, vigorous contraction of the colon, usually in the left lower side, may result in diverticulosis. This increased pressure causes small and eventually larger ballooning pockets to form. These pockets usually cause no problems. However, sometimes they can become infected (diverticulitis) or even break open (perforate) causing infection or inflammation within the abdomen (peritonitis). A high-fiber diet increases the bulk in the stool and thereby reduces the pressure within the colon. By so doing, the formation of pockets is reduced or possibly even stopped.

Certain bulking agents such as psyllium are traditional types of supplements. Psyllium is a soluble fiber. Combining it with insoluble fiber as in wheat bran or corn bran (no gluten) can enhance this bulking effect even more. The product Prebiotin Regularity/Diverticulosis™ contains prebiotic, psyllium and wheat bran, an exceptionally good combination for bowel regularity.

In the past, many physicians were fearful that seeds as in tomatoes, nuts or berries were harmful and could get inside these pockets and rattle around, causing damage. We now know that this has never been the case and that these foods contain lots of fiber and are actually beneficial for diverticulosis patients.

Fiber and Gas

Everyone has intestinal gas and that is a good thing. The normal amount of flatus passed each day depends on sex and what is eaten. When the bacteria that make intestinal gases are growing it also means that other good bacteria are using the same fibers to grow and produce multiple health benefits, including the production of healthy short-chain fatty acids. These substances are produced quietly in the colon and produce many health-related outcomes. The normal number of passes of gas or flatus is 10-20 times a day with men having more.

Soluble fiber should always be used in a gradual manner. If too much is consumed at any one time, then excess, but harmless, intestinal gas can occur. People with irritable bowel syndrome are particularly prone to bloating and mild cramping. Soluble fiber in the diet or supplement should be used in small doses and increased gradually.

Finally, prebiotic fibers tend to cause the production of short-chain fatty acids which acidify the colon. This in turn reduces or stops the growth of bacteria that make the smelly hydrogen sulfide gases that produce noxious flatus. People who consume many vegetables with prebiotics or take a prebiotic fiber supplement generally have non-odoriferous flatus.

[Prebiotics in your diet or in a supplement naturally restore digestive balance and health. Learn more . . .](#)

© Jackson Siegelbaum Gastroenterology 2010