

How Insoluble Fiber Helps Prevent Colon Cancer and Other Bowel Problems

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Insoluble fiber is a type of fiber found in certain complex carbohydrate foods and some common supplements used as bulking agents. Insoluble fiber is not digested in the intestinal tract or absorbed into the bloodstream from the intestinal tract. However, it plays an important role in maintaining health via its effects within the intestinal tract, especially in regards to the prevention of colon cancer, diverticulosis and constipation problems. As such, knowing how to get enough insoluble fiber each day is considered to be an essential ingredient in the prevention of colon cancer - the second leading cause of cancer deaths in North America.

Unfortunately, in today's world of highly refined foods, most people don't ingest the 30-45 grams of fiber per day that is associated with the prevention of heart disease, diabetes, obesity, colon cancer and other ailments. In fact, the average intake of fiber is estimated to be only 12-15 grams per day. Thus, understanding the health benefits of fiber (and in this case, insoluble fiber), and knowing how to get more of it into one's diet, is a proactive strategy that will likely prolong functional, disease-free living.

There are two types of dietary fiber: insoluble and soluble. Soluble fiber is most helpful in reducing high cholesterol levels. This article deals with merits of insoluble fiber, especially in regard to helping reduce the risk of colon cancer.

Colon Cancer and Insoluble Fiber

It has been known for some time that nitrate-containing protein foods such as bacon, pepperoni, salami, hot dogs, most packaged meats and most cold cuts, encourage the development of cancer in the colon and rectum. When the protein in these processed meats reacts with the nitrate and nitrite preservatives during digestion, carcinogenic nitrosamines are formed. These nitrosamine chemicals are only one type of cancer-causing agent against which the body must defend itself daily.

When you eat fat, your liver and gallbladder secrete bile acids into the intestine. Bile acids that are not absorbed back into the body remain in the intestinal tract. These can be converted into cancer-causing agents by the bacteria that line the large intestine. In this way, a diet that is high in fat also contributes to the development of colon cancer. In fact, colon cancer is much more prevalent in countries that consume high levels of animal fat (with the exception of fish, as omega-3 fats have been shown to have a preventive effect).

Ingestion of alcohol also increases the risk of colon cancer, as do charred and smoked foods. Consuming more than two alcoholic drinks per day, on average, is associated with doubling the risk of colon cancer in several large prospective studies. As such, it is best to advise patients to have no more than one alcoholic drink in any 24-hour period, follow a low-animal-fat diet, and avoid deep-fried and pan-fried foods, charred foods, and smoked meats and fish as much as possible.

As stated earlier, the occurrence rate of colon cancer makes it the second leading cause of death in

our society. Once you pass the age of 40, your risk of incurring colon cancer increases 40-fold for the next 40 years. This rapid increase in the incidence of colon cancer with age doesn't occur in parts of the world where less fat and more complex carbohydrates, especially whole grains and beans, are eaten.

Insoluble Fiber Helps Protect Against Colon Cancer in Two Ways

1. Insoluble fiber dilutes the levels of cancer-causing agents in your intestinal tract: Acting like a sponge, insoluble fiber soaks up water in the intestinal tract. As a result, the fecal matter being formed in the intestinal tract has a high water content, which consequently dilutes the concentration of cancer-causing agents. In general, the higher the concentration of cancer-causing agents, the greater the likelihood that they will cause genetic damage to the cells lining your colon and rectum.
2. Insoluble fiber moves fecal matter quickly through your intestinal tract: The sponge-like insoluble fiber absorbs water, expanding the bulk of fecal matter. This expansion exerts physical pressure against the inside walls of the intestinal tract, which stimulates synchronized contractions of the muscular layers of the intestinal walls. These muscular contractions propel fecal matter through the intestinal tract and out of the body. This decreases the time period during which your intestines, colon and rectum are exposed to cancer-causing agents. By absorbing water, the insoluble fiber also dilutes toxic wastes and cancer radicals, and enables the body to more quickly eliminate them.

To improve the function of insoluble fiber, you should drink enough water to take advantage of its sponge-like behavior. Six to eight glasses of water (8 ounces each) every day is usually enough. You should also be sure to have frequent bowel movements. One per day is excellent; five per week is acceptable; three or less is dangerous. An additional benefit is that the high water content of stools formed by insoluble fiber makes them soft and easy to eliminate from the body. They require minimal straining and are therefore less likely to cause hemorrhoids and varicose veins. (You will know your stools are sufficiently high in water content if they tend to float.) Rock-hard, pellet-like stools are solid evidence that you lack sufficient insoluble fiber to protect you from one of the most common life-threatening cancers of our day - one that is highly related to diet. The production of softer, fast-moving stools also helps to guard against diverticular disease and improves existing problems with constipation, diverticulosis, and in some cases, irritable bowel syndrome.

Food and Supplement Sources of Insoluble Fiber

Complex carbohydrate foods that are loaded with insoluble fiber include wheat bran, corn bran, and rice bran. These brans are available in a variety of foods, such as high-fiber breakfast cereals, whole-wheat bread, whole-wheat biscuits, corn on the cob, popcorn, puffed-corn cereals, brown rice, and rice crackers. Some additional sources of insoluble fiber include red kidney beans, chick peas, and many other peas and beans (legumes). Peas and beans are absolutely excellent sources of insoluble fiber and you should strive to have at least one serving per day.

The Salba grain [from the *Salvia hispanica L* plant] is an extremely rich source of colon-cleaner fiber, containing 31 grams per 100 gram serving, which makes it a richer source of insoluble fiber than wheat bran, flax or any other grain. As such, Salba-containing food products represent a convenient and palatable way to get more fiber into your diet. Due to the widely acknowledged, health-promoting, nutritional value of Salba (high fiber, high omega-3 fat, calcium, magnesium), an increasing number of manufacturers have begun adding Salba to many common food products such as pasta, jams, jellies, breads, etc., to enhance their nutritional value. One of the main nutritional values of Salba is its rich supply of insoluble fiber.

In regards to supplements that can be used to add more insoluble fiber to the diet, the main three

include:

1. Psyllium husk fiber (which is the main ingredient in Metamucil) - 2 to 3 teaspoons per day is ideal.
2. Ground flaxseed - 2 heaping tablespoons per day contains a generous amount of fiber (mixed into juice, yogurt or a protein shake, or sprinkled on breakfast cereal).
3. Salba - used like ground flaxseed or purchased as a Salba-enriched food (e.g., pasta containing Salba).

Summary

The lack of attention placed on meeting our daily fiber requirement has contributed to the high rates of heart disease, diabetes, obesity, colon cancer and other problems common in modern society. I strongly advise you to encourage your patients to ingest adequate fiber in their diets by placing emphasis on fruits, vegetables, whole grains, beans and peas, with the possible addition of a daily fiber supplement product (ground flaxseed, psyllium or Salba).

The National Cancer Institute indicates that up to 90 percent of colon cancer is preventable through improved dietary and lifestyle measures. Ingesting more insoluble fiber is an important consideration in this regard, as well as avoiding or reducing the cancer-causing agents mentioned previously in this article. In addition, ingesting 1,000-1,500 IU of vitamin D, 1,500 mg of calcium, B vitamins (especially folic acid and vitamin B12), antioxidants (vitamin C and vitamin E, which decrease nitrosamine formation in the intestinal tract), and remaining fit and at one's ideal weight, are other important strategies that can help reduce risk of developing colon cancer.

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