

## ***Beans, The "Almost Wonder Food"***

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Imagine, for a moment, a delicious, versatile, high protein food that could contribute significantly to better health by assisting in the prevention of heart disease, cancer, and diabetes? Whoa! You probably already have some of this on hand, and if not, it's available at the grocery store where you shop. We're talking about beans, an often-overlooked vegetable that is turning out to be a scientific superstar.

Nutritionist Suzanne Havala Hobbs, DR, PH, MS, RD, from the School of Public Health, University of North Carolina at Chapel Hill, calls them "almost a wonder food." Other than the well-known digestive issue (gas), she notes, "There is really nothing negative we can say about beans. They rarely cause allergies, and are full of nutrition, including protein. Some of the most popular beans in this country are red kidney beans, pinto beans, black beans, navy beans, garbanzo beans, lima beans, and, in the South, black-eyed peas."

The bean is in a class of foods that also includes peas and lentils, called legumes. One-quarter cup of any legume is equivalent in protein to an ounce of meat. A cup of legumes contains about 15 grams of protein. They combine easily with vegetables, herbs and spices, and easily pick up the flavor of seasonings used in almost any raw or cooked dish. Recently, they have been generating a lot of interest in the scientific community because they are revealing their ability to provide natural protection from a number of degenerative diseases that so many people now die from.

Beans have significant antioxidant properties which make them a terrific anti-aging food. In a study by the **US Department of Agriculture**, three varieties of beans ranked in the top four foods studied for antioxidant benefits. Red beans such as those used to make red beans and rice, red kidney beans, and pinto beans.

Another study at the **Department of Soil and Crop Sciences** concluded that color is the key when choosing beans. Bean coats get their color and antioxidant capabilities from phenol and anthocyanins. Red beans were

found to have the highest antioxidant level, with black beans coming in second place. These studies and many others demonstrate that the bean is really "good for what ails us," as grandma used to say.

University studies have documented that eating beans on a regular basis reduces risk of diabetes, heart disease, cancer and obesity. Eating beans can help in maintaining desired weight levels. According to a recent **Real Age** article, regular bean eaters weigh about 6.6 pounds less than non-bean eaters. They can also help reduce blood glucose, insulin, cholesterol concentrations, and reduce the incidence, as well as the consequences of diabetes.

Beans are a good source of soluble dietary fiber, containing about 4 grams per cup of cooked beans. Soluble fiber has been shown to reduce blood cholesterol in numerous epidemiologic, clinical, and animal studies. Data from several human intervention trials indicate that consuming canned and dry beans reduces both total and LDL cholesterol. Significant increases in HDL cholesterol and/or reduction in triglycerides were also seen in many of the studies. In addition to cholesterol, recent attention has been focused on high levels of *plasma homocysteine* as a risk factor for vascular disease. High homocysteine levels are synonymous with greater risk of cardiovascular disease. Beans also provide a significant amount of folate, one of the B vitamins found to reduce homocysteine levels.

In a study reported in the **Archives of Internal Medicine**, men and women who consumed legumes 4 times a week had a 22% lower risk for heart disease than did people consuming legumes only once per week. In a follow-up study, men who adhered to a diet that included consuming more legumes had a 30% lower risk of heart disease, whereas people following the typical Western diet with low consumption rates for beans had a higher risk of heart disease.

It has been known for several years that *inositol hexaphosphate* (IP6) found in beans, legumes and some other vegetables, exhibits potent anticancer activity. Scientists have recently discovered an additional anticancer compound in legumes, known as *inositol pentakisphosphate*. In a study reported in **Cancer Research**, this compound was tested in mice, and on cancer cells. Not only did it inhibit the growth of tumors in mice independently, the phosphate also enhanced the effect of cytotoxic

drugs in ovarian and lung cancer cells. The researchers concluded that the properties of *inositol pentakisphosphate* make it a promising therapeutic, nontoxic agent, even at higher concentrations, unlike conventional chemotherapy agents.

Several animal studies have also concluded that incorporating beans into the diet can reduce the risk of developing colon cancer. In one study, rats were fed either pinto beans or milk protein as their main source of dietary protein. The rats that were fed beans developed fewer tumors than the rats that were fed milk protein. Confirming those studies, recent research conducted at the **National Cancer Institute** also found that people who eat more dried legumes, such as pinto or navy beans, lentils, and bean soups, have significantly less risk of developing colon cancer. Data developed from the **Polyp Prevention Trial** revealed that, by increasing their dry bean consumption by up to fourfold, one would receive a strong protective effect against recurrence of precancerous polyps, i.e., the more dried beans in the diet, the greater reduced risk for recurrence of advanced polyps. In a study of nearly 35,000 women, those who ate four or more servings of legumes each week reduced their risk of developing **colorectal cancer** by approximately one-third. In a related study, people who had colon cancer, previously, were found to be able to reduce the risk of recurrence up to **45%**, just by increasing their consumption of beans.

A newly released series of studies from Colorado State University, reported in the **Journal of Nutrition**, found that eating beans and potatoes regularly could help prevent **breast cancer**. Researchers introduced a carcinogen into the mammary glands of rats that were then fed a daily diet of different varieties of beans or potatoes in each of the separate studies. The rat control group did not receive beans or potatoes. At the completion of the three studies, the researchers collected data on the occurrence of cancerous mammary tumors, tumor mass, and multiplicity of tumors. Results indicated that the more beans or potatoes included in the diet, the less the frequency for malignant tumors. All beans were better at preventing cancer than a no-bean diet, though results varied with the type of bean used in the study. The presence of phytonutrients such as flavonols found in many plant-based foods, appear to be the reason for the reduced risk of the breast cancer. A future clinical trial, using breast cancer survivors, may produce preventative diet plans for women who want to avoid breast cancer or a recurrence. In

yet another study, reported in the **Archives of Internal Medicine**, researchers analyzed data collected from 90,630 women who participated in the **Nurses Health Study II**, selecting women between the ages of 26 and 46 when the study began in 1991. After an eight-year follow-up, the researchers found that women who consumed beans or lentils even twice a week were **24%** less likely to develop breast cancer than women who consumed them less than once a month.

Incorporating 3 cups of cooked beans a week into your diet can have significant health benefits. They contain energy-sustaining complex carbohydrates, essential vitamins and minerals, and are very low in fat and sodium. Beans are a user-friendly food, as well. A pound of almost any variety of organic dried beans can be bought for under one dollar, making beans a central player for anyone watching his or her budget. Beans make great main dishes, salad, soups, side dishes, and can be mashed or pureed for burritos and dips.

People often wonder if canned beans are an acceptable substitute for bagged dried beans that require several hours of soaking. Dr. Hobbs responds that it's really an issue of convenience. Most foods are more nutritious eaten as close as possible to their natural state. But she says that the nutritional differences in canned and dried beans are marginal, and if you prefer to reach for a can rather than prepare ahead, you can rest easy. Do give canned beans a thorough rinse in a colander before you use them-- it gets rid of excess sodium. Also, soak dried beans 12 to 24 hours, changing the water once or twice. This washes away and breaks down gas-causing particles, in addition to cleaning the beans and removing any impurities such as tiny pebbles that make their way into the bag. Cooked beans will keep about six months in the freezer and for up to five days in the refrigerator.

For people who enjoy cooking --or for that matter, eating -- beans are the basis of a seemingly endless variety of dishes, limited only by your imagination or selection of cookbooks. To make a south-of-the-border dinner, Dr. Hobbs mashes pinto beans or uses whole black beans and adds them to rice, avocado slices, mashed sweet potatoes and salsa and puts them in taco shells. For Cuban Black Beans and Rice, she says to saute onions, celery and bell peppers, add four cans of black beans, a bay leaf, cumin, oregano and lemon juice and cook for half an hour on top of the stove. Tuscans, whom other Italians call "bean eaters," make a hearty

winter soup with white cannellini beans that simmer stovetop in chicken broth, along with numerous vegetables. A colorful summer cold dish is made up of just black beans, chopped red peppers, corn, onions (optional) and cilantro, stirred together with a light vinaigrette. Beans are excellent in any kind of rice and in salads -- try navy beans sauteed with garlic and olive oil, finished off with lemon zest and placed on top of a pile of uncooked arugula.

The only factor that seems to stand in the way of people eating beans is the intestinal gas they tend to produce. Because many people don't get enough dietary fiber, they may have a "vigorous response" when they load up their plate with beans, since they are so high in fiber. However, it's possible to eat beans regularly without getting gas. Here is the secret -- start slow, with a few spoonfuls a day, and build up gradually over a few weeks. In addition, starting slow allows the gut to gradually build up the bacteria in the intestinal flora that help with digestion of *raffinose*, a sugar that is found in beans and is another contributor to the "bean problem." Another way around this problem is to soak the beans for 12 to 24 hours before they are cooked. Pour off the water used for soaking, rinse and add fresh water for cooking. This soaking process mimics what nature had in mind for the bean.

Beans contain high levels of phytic acid or phytate, nature's way of preserving the bean as it lies on the ground waiting for the spring rains before it can germinate. When the rain comes, the bean soaks in the ground until this natural preservative is exhausted, and at that point the new plant is ready to grow and the nutrients it will need are released from the bean. After soaking the beans, the phytate has been reduced and the nutrients in the bean are now available. It is the preservative quality of phytate that make unsoaked beans so difficult to digest and so apt to produce gas when eaten. Another way to reduce gas production is by using herbs and spices while cooking beans. Herbs and spices that go particularly well with beans include cumin, garlic, anise, fennel seeds, rosemary, caraway seeds, turmeric, lemongrass and coriander. As a last resort, some people will take a Beano tablet, or digestive enzymes to make sure you are safe whether you have chosen to soak the beans or not.

In any case, beans, referred to by Dr. Hobbs as "almost a wonder food," are indeed "good for what ails us."