

## **Health Benefits**

Creamy, rich, and sweet, bananas are a favorite food for everyone from infants to elders. Sports enthusiasts appreciate the potassium-power delivered by this high energy fruit.

### **Cardiovascular Protection from Potassium and Fiber**

Bananas are one of our best sources of potassium, an essential mineral for maintaining normal blood pressure and heart function. Since the average banana contains a whopping 467 mg of potassium and only 1 mg of sodium, a banana a day may help to prevent high blood pressure and protect against atherosclerosis. The effectiveness of potassium-rich foods such as bananas in lowering blood pressure has been demonstrated by a number of studies. For example, researchers tracked over 40,000 American male health professionals over four years to determine the effects of diet on blood pressure. Men who ate diets higher in potassium-rich foods, as well as foods high in magnesium and cereal fiber, had a substantially reduced risk of stroke.

A study published in the September 8, 2003 edition of the *Archives of Internal Medicine* also confirms that eating high fiber foods, such as bananas, helps prevent heart disease. Almost 10,000 American adults participated in this study and were followed for 19 years, during which time 1,843 cases of coronary heart disease (CHD) and 3,762 cases of cardiovascular disease (CVD) were diagnosed. People eating the most fiber, 21 grams per day, had 12% less CHD and 11% less CVD compared to those eating the least, 5 grams daily. Those eating the most water-soluble dietary fiber fared even better with a 15% reduction in risk of CHD and a 10% risk reduction in CVD.

In addition to these cardiovascular benefits, the potassium found in bananas may also help to promote bone health. Potassium may counteract the increased urinary calcium loss caused by the high-salt diets typical of most Americans, thus helping to prevent bones from thinning out at a fast rate.

### **Soothing Protection from Ulcers**

Bananas have long been recognized for their antacid effects that protect against stomach ulcers and ulcer damage. In one study, a simple mixture of banana and milk significantly suppressed acid secretion. In an animal study, researchers found that fresh bananas protected the animals' stomachs from wounds.

Bananas work their protective magic in two ways: First, substances in bananas help activate the cells that compose the stomach lining, so they produce a thicker protective mucus barrier against stomach acids. Second, other compounds in bananas called *protease inhibitors* help eliminate bacteria in the stomach that have been pinpointed as a primary cause of stomach ulcers.

## **Improving Elimination**

Bananas are a smart move if you suffer from elimination problems. A bout of diarrhea can quickly deplete your body of important electrolytes. Bananas can replenish your stores of potassium, one of the most important electrolytes, which helps regulate heart function as well as fluid balance. In addition, bananas are a good source of pectin, a soluble fiber that absorbs fluid, thus helping to normalize movement through the digestive tract and ease constipation. In bananas, pectin is combined with a good supply of starch, supplying complex carbohydrate for slow-burning energy.

## **Protect Your Eyesight**

Your mother may have told you carrots would keep your eyes bright as a child, but as an adult, it looks like fruit is even more important for keeping your sight. Data reported in a study published in the June 2004 issue of the *Archives of Ophthalmology* indicates that eating 3 or more servings of fruit per day may lower your risk of age-related macular degeneration (ARMD), the primary cause of vision loss in older adults, by 36%, compared to persons who consume less than 1.5 servings of fruit daily.

In this study, which involved 77,562 women and 40,866 men, researchers evaluated the effect of study participants' consumption of fruits; vegetables; the antioxidant vitamins A, C, and E; and carotenoids on the development of early ARMD or neovascular ARM, a more severe form of the illness associated with vision loss. Food intake information was collected periodically for up to 18 years for women and 12 years for men.

While, surprisingly, intakes of vegetables, antioxidant vitamins and carotenoids were not strongly related to incidence of either form of ARM, fruit intake was definitely protective against the severe form of this vision-destroying disease. Three servings of fruit may sound like a lot to eat each day, but by simply tossing a banana into your morning smoothie or slicing it over your cereal, topping off a cup of yogurt or green salad with a half cup of berries, and snacking on an apple, plum, nectarine or pear, you've reached this goal.

## **Build Better Bones with Bananas**

Build better bones by eating bananas? Yes, enjoying bananas frequently as part of your healthy way of eating can help improve your body's ability to absorb calcium via several mechanisms.

Bananas are an exceptionally rich source of fructooligosaccharide, a compound called a *prebiotic* because it nourishes *probiotic* (friendly) bacteria in the colon. These beneficial bacteria produce vitamins and digestive enzymes that improve our ability to absorb nutrients, plus compounds that protect us against unfriendly microorganisms. When fructooligosaccharides are fermented by these friendly bacteria, not only do numbers of probiotic bacteria increase, but so does the body's ability to absorb calcium. In addition, gastrointestinal transit time is lessened, decreasing the risk of colon cancer.

Green bananas contain indigestible (to humans) short chain fatty acids (SCFAs) that are a favorite food of the cells that make up the lining of the intestines. When these cells are well-nourished and healthy, the body's ability to absorb nutrients such as calcium can increase dramatically.

Research published in the March 2004 issue of *Digestive Diseases and Sciences* underscores just how much bananas can improve nutrient absorption. In this study, 57 male babies (5-12 months) with persistent diarrhea of at least 14 days duration were given a week's treatment with a rice-based diet containing either green banana, apple pectin or the rice diet alone. Treatment with both green banana and apple pectin resulted in a 50% reduction in stool weights, indicating that the babies were absorbing significantly more nutrients.

Also, to check how well their intestines were able to absorb nutrients, the babies were given a drink containing lactulose and mannitol. Lactulose is a compound that should be absorbed, while mannitol is one that should not be. When the intestines are too permeable, a condition clinicians call "leaky gut," too little lactulose and too much mannitol are absorbed. After just one week of being given the green banana-rice diet, the babies' were absorbing much more lactulose and little mannitol, showing that their intestines were now functioning properly. Some banana cultivars are also rich in provitamin A carotenoids, which have been shown to protect against chronic disease, including certain cancers, cardiovascular disease, and diabetes. How to identify which bananas contain the most carotenoids? Check the color of their edible flesh. Bananas whose flesh is more golden contain the most carotenoids.

## **Reduce Kidney Cancer Risk**

About 190,000 cases of kidney cancer are diagnosed each year. Risk factors include smoking, high blood pressure, obesity, exposure to toxic chemicals such as asbestos and cadmium, and a high intake of fruit juices.

Research published in the January 2005 issue of the *International Journal of Cancer* suggests that regular consumption of whole fruits and vegetables, especially bananas, is highly protective. The results of this large population based prospective study (13.4 years) of 61,000 women aged 40-76, show that women eating more than 75 servings of fruits and vegetables per month cut their risk of kidney cancer 40%. Among the fruits, bananas were especially protective. Women eating bananas four to six times a week halved their risk of developing the disease compared to those who did not eat this fruit.,

Salads, eaten at least once a day, were associated with a 40% decreased risk. Among vegetables, frequent consumption of root vegetables and white cabbage offered the most protection, providing a 50-65% decrease in risk. The conclusion drawn by the researchers: frequent consumption of fruits and vegetables, especially bananas, cabbage and root vegetables, may reduce risk of kidney cancer. Why these foods? Bananas and many root vegetables contain especially high amounts of antioxidant phenolic compounds. Cabbage is rich in sulfur compounds necessary for efficient and effective detoxification of potential carcinogens.

## **Description**

Bananas are elliptically shaped fruits "prepackaged" by Nature, featuring a firm, creamy flesh gift-wrapped inside a thick inedible peel. The banana plant grows 10 to 26 feet in height and belongs to the family Musaceae. Banana fruits grow in clusters of 50 to 150, with individual fruits grouped in bunches, known as "hands," of 10 to 25 bananas.

Bananas abound in hundreds of edible varieties that fall under two distinct species: the sweet banana (*Musa sapienta*, *Musa nana*) and the plantain banana (*Musa paradisiacal*). Sweet bananas vary in size and color.

While we are accustomed to thinking of sweet bananas as having yellow skins, they can also feature red, pink, purple and black tones when ripe. Their flavor and texture range with some varieties being sweet while others have starchier characteristics. In the United States, the most familiar varieties are Big Michael, Martinique and Cavendish. Plantain bananas are usually cooked and considered more like a vegetable due to their starchier qualities.

## **History**

Bananas are thought to have originated in Malaysia around 4,000 years ago. From there, they spread throughout the Philippines and India, where they were recorded growing by Alexander the Great's army in 327 B.C.

Bananas were introduced to Africa by Arabian traders and discovered there in 1482 A.D. by Portuguese explorers who took them to the Americas, the place where the majority of bananas are now produced.

Bananas were not brought to the United States for sale in markets until the latter part of the 19th century and were initially only enjoyed by people in the seacoast towns where the banana schooners docked; because of the fruit's fragility, they were unable to be transported far.

Since the development of refrigeration and rapid transport in the 20th century, bananas have become widely available. Today, bananas grow in most tropical and subtropical regions with the main commercial producers including Costa Rica, Mexico, Ecuador and Brazil.

## **How to Select and Store**

Since bananas are picked off the tree while they're still green, it's not unusual to see them this green in the store. Base your choice of bananas depending upon when you want to consume them. Bananas with more green coloration will take longer to ripen than those more yellow in hue and/or with brown spots.

Bananas should be firm, but not too hard, bright in appearance, and free from bruises or other injuries. Their stems and tips should be intact. The size of the banana does not affect its quality, so simply choose the size that best meets your needs.

While bananas look resilient, they're actually very fragile and care should be taken in their storage. They should be left to ripen at room temperature and should not be subjected to overly hot or cold temperatures. Unripe bananas should not be placed in the refrigerator as this will interrupt the ripening process to such an extent that it will not be able to resume even if the bananas are returned to room temperature.

If you need to hasten the ripening process, you can place bananas in a paper bag or wrap them in newspaper, adding an apple to accelerate the process. Ripe bananas that will not be consumed for a few days can be placed in the refrigerator. While their peel may darken, the flesh will not be affected. Prior to consuming refrigerated bananas, for maximum flavor, remove them from the refrigerator and allow them to come back to room temperature.

Bananas can also be frozen and will keep for about 2 months. Either purée them before freezing or simply remove the peel and wrap the bananas in plastic wrap. To prevent discoloration, add some lemon juice before freezing.