

WATERMELON



History

Originating in Africa, watermelons were first cultivated in Egypt where testaments to their legacy were recorded in hieroglyphics painted on building walls. The fruit was held in such regard that it was placed in the tombs of many Egyptian kings. It is not surprising that watermelon played such an important role in this country, and subsequently in countries in the Mediterranean region, since water was often in short supply in these areas, and people could depend upon watermelon for its thirst-quenching properties.

Watermelons were brought to China around the 10th century and then to the Western Hemisphere shortly after the discovery of the New World. In Russia, where much of the commercial supply of watermelons is grown, there is a popular wine made from this fruit. In addition to Russia, the leading commercial growers of watermelon include China, Turkey, Iran and the United States.

Watermelon Juice a Rich Source of Lycopene and Beta-Carotene

By Darin Ingels, ND

Healthnotes Newswire (June 26, 2003)—Regular consumption of watermelon juice can increase blood concentrations of lycopene and beta-carotene, according to a study in *Journal of Nutrition* (2003;133:1043–50). Studies suggest that these potent antioxidants may have protective effects against heart disease and certain cancers, such as prostate, bladder, and cervical cancer.

Lycopene and beta-carotene are compounds called carotenoids, which are highly colored pigments that help protect plants against damage from sunlight. Carotenoids are important to humans because they have antioxidant activity and prevent free radicals from causing harm to the body, similar to other types of antioxidants such as selenium and vitamins C and E. Some carotenoids are also converted to vitamin A, which is necessary for normal immune function and development of cells. Other significant carotenoids include lutein and zeaxanthin, which play a role in visual function.

In the study, 23 healthy adults between 36 and 69 years old consumed three of four possible diets that each lasted three weeks. All participants completed the first two treatments, which included consuming daily (1) a controlled diet, low in lycopene and (2) the controlled diet plus watermelon juice containing 20 mg of lycopene and 2.5 mg of beta-carotene. As a third treatment, participants were assigned to consume either (3) the controlled diet plus watermelon juice that was twice as concentrated as in the second treatment or (4) the controlled diet and tomato juice containing 18 mg of lycopene and 0.6 mg of beta-carotene. The quantities of watermelon and tomato juice needed to provide the amounts of lycopene and beta-carotene used in this study were approximately 3 cups of diced watermelon and 1 cup of tomato juice. Blood levels of lycopene and beta-carotene were measured at the beginning and completion of each three-week treatment period.

The watermelon juice diet increased blood concentrations of lycopene and beta-carotene almost five-fold and two-fold, respectively, compared with the diet without watermelon juice. However, there was no significant increase in lycopene or beta-carotene levels when the amount of watermelon juice was doubled. Consumption of tomato juice produced a similar increase in blood lycopene concentrations, but failed to increase beta-carotene levels.

Although the current study shows watermelon juice increases lycopene and beta-carotene blood levels, the long-term health benefits consuming watermelon have yet to be investigated. Several studies have shown that lycopene from tomatoes reduces the risk of heart attacks and may help prevent prostate cancer. Although the lycopene concentration in watermelon is 40% higher than the amount found in tomatoes, it is unknown whether consumption of watermelon will produce similar results. Other food sources of lycopene include guava, pink grapefruit, apricots, persimmons, and papaya.

Health Benefits

Watermelon is not only great on a hot summer day, this delectable thirst-quencher may also help quench the inflammation that contributes to conditions like asthma, atherosclerosis, diabetes, colon cancer, and arthritis.

Sweet, juicy watermelon is actually packed with some of the most important antioxidants in nature. Watermelon is an excellent source of vitamin C and a very good source of vitamin A, notably through its concentration of beta-carotene. Pink watermelon is also a source of the potent carotenoid antioxidant, lycopene. These powerful antioxidants travel through the body neutralizing free radicals. Free radicals are substances in the body that can cause a great deal of damage. They are able to oxidize cholesterol, making it stick to blood vessel walls, where it can lead to heart attack or stroke. They can add to the severity of asthma attacks by causing airways to clamp down and close. They can increase the inflammation that occurs in osteoarthritis and rheumatoid arthritis and cause most of the joint damage that occurs in these conditions, and they can damage cells lining the colon, turning them into cancer cells. Fortunately, vitamin C and beta-carotene are very good at getting rid of these harmful molecules and can therefore prevent the damage they would otherwise cause. As a matter of fact, high intakes of vitamin C and beta-carotene have been shown in a number of scientific studies to reduce the risk of heart disease, reduce the airway spasm that occurs in asthma, reduce the risk of colon cancer, and alleviate some of the symptoms of osteoarthritis and rheumatoid arthritis. A cup of watermelon provides 24.3% of the daily value for vitamin C, and, through its beta-carotene, 11.1% of the DV for vitamin A. Watermelon is rich in the B vitamins necessary for energy production. Our food ranking system also qualified watermelon as a very good source of vitamin B6 and a good source of vitamin B1, magnesium, and potassium. Part of this high ranking was due to the higher nutrient density of watermelon. Because this food has a higher water content and lower calorie content than many other fruits (a whole cup of watermelon contains only 48 calories), it delivers more nutrients per calorie - an outstanding health benefit!

Watermelon is also a very concentrated source of the carotenoid, lycopene. Well known for being abundant in tomatoes and particularly well absorbed from cooked tomato products containing a little fat such as olive oil, lycopene is also present in high amounts in watermelon and mangoes. Lycopene has been extensively studied for its antioxidant and cancer-preventing properties. In contrast to many other food phytonutrients, whose effects have only been studied in animals, lycopene has been repeatedly studied in humans and found to be protective against a growing list of cancers. These cancers now include prostate cancer, breast cancer,

endometrial cancer, lung cancer and colorectal cancers. A study published in the November 2003 issue of the American Journal of Clinical Nutrition found that in patients with colorectal adenomas, a type of polyp that is the precursor for most colorectal cancers, blood levels of lycopene were 35% lower compared to study subjects with no polyps. Blood levels of beta-carotene also tended to be 25.5% lower, although according to researchers, this difference was not significant. In their final (multiple logistic regression) analysis, only low levels of plasma lycopene (less than 70 microgram per liter) and smoking increased the likelihood of colorectal adenomas, but the increase in risk was quite substantial: low levels of lycopene increased risk by 230% and smoking by 302%. (December 31, 2003) The antioxidant function of lycopene – its ability to help protect cells and other structures in the body from oxygen damage – has been linked in human research to prevention of heart disease. Protection of DNA (our genetic material) inside of white blood cells has also been shown to be an antioxidant role of lycopene.

Protection against Macular Degeneration

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 watermelon can help you reach this goal. What could be more delicious on a hot summer's day than a slice of sweet, refreshing watermelon? For the best ever summer spritzer, blend watermelon with a spoonful of honey and a splash of lemon or lime, then stir in seltzer water and decorate with a sprig of mint. If you didn't experience the fun of a seed spitting contest as a child, it's not too late to introduce this summer ritual to your children or the child in you! (July 10, 2004)