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Pomegranate – A Super Antioxidant

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Commentary

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Native cultures knew the practical value of many common foods in treating common ailments--that is, before the advent of the industrial revolution and the subsequent suppression of traditional medicine by the pharmaceutical juggernauts. Pomegranates, which are not native to the Americas, have been revered in Asia and the Middle East for millennia for spiritual as well as health reasons. "Modern science" has only recently realized the importance of this super anti-oxidant, which is gaining popularity in the prevention and treatment of cancer and heart disease.

Antioxidants are the naturally occurring substances in plants that protect the body from free radicals, which are highly reactive atoms or molecules that interfere with normal cellular functions. Free radicals abound in our modern society in the form of pollutants, food additives, pesticides, herbicides, cigarette smoke, etc. For example, free radicals can cause cellular damage to cellular components including RNA/DNA, which can potentially lead to cancer. Free radicals can alter cholesterol in an oxidation process in the arteries.

This process appears to speed up the onset of atherosclerosis, a type of arteriosclerosis (often referred to as "hardening of the arteries" or "plaque build-up" on arterial walls). Atherosclerosis is the leading cause of "heart disease", the number one killer in North America and other countries that have adopted the modern Standard American Diet (SAD). Nobel laureate chemist Linus Pauling isolated the initial cause of hardening of the arteries to lack of a well-known antioxidant--vitamin C.

The recent interest in the antioxidant power of pomegranates began primarily in 2000 when a group of scientists in Israel demonstrated the effectiveness of pomegranates in treating atherosclerosis. The research was headed by Professor Michael Aviram, an internationally recognized authority on the effect of food on heart disease.

“Antioxidants can protect us against the oxidative stress in our industrialized world, such as pollution, chemicals, viruses and bacteria, and consequently cardiovascular diseases and cancer," said Professor Aviram. His research shows that pomegranate juice contains the highest antioxidant capacity compared to other juices, red wine, green tea, tomatoes, vitamin E and other headline makers. Scientists at the University of California, Berkeley, have independently confirmed that pomegranate juice contains at least three major antioxidants. Pomegranate juice has three times the antioxidant power of red wine or green tea.

Dr. Aviram and his scientific research group tested pomegranate juice on both humans and laboratory mice which were genetically predisposed to develop heart disease. They found that pomegranate juice decreased LDL ("bad cholesterol") and increased HDL ("good cholesterol") by 20% in humans. The oxidation of LDL, which is believed by many researchers to be a major cause of heart disease, was reduced by up to 90%.

This sounds very promising for those wishing to prevent atherosclerosis--But what about getting rid of the plaque build-up that already exists in the arteries which can cause a heart attack or stroke? Fortunately, pomegranate juice consumption significantly reduced the size of arterial plaque both in human subjects and mice. Nineteen patients from 65 to 75 years of age with severe carotid artery stenosis (70 to 90 percent occlusion) were given 50 ml of concentrated, pasteurized pomegranate juice daily. This concentrate was equivalent to 8.3 ounces of 100% pomegranate juice. After one year the mean carotid artery thickness was reduced 35%. During the same time period the mean artery thickness significantly increased in the placebo group. The arterial plaque in laboratory mice was reduced by as much as 44%.

In this research conducted over a three year period, Professor Aviram and his research group further showed that pomegranate juice could significantly lower the systolic blood pressure of hypertensive patients in just two weeks. Patients with preexisting cardiovascular disease showed great improvement in many important physiological measurements and pathological signs compared to the control group. The Aviram research group concluded that pomegranate juice can offer a wide protection against cardiovascular diseases which may be attributable to its antioxidative properties.

Recent scientific research is demonstrating that pomegranate may be helpful in the prevention and treatment of various types of cancer such as breast cancer, skin cancer, prostate cancer and lung cancer. Research using both mouse mammary organ culture and human breast cancer cells in vitro has demonstrated anticancer effects of pomegranate extracts. Dr. Hasan Mukhtar and colleagues from the University of Wisconsin have shown that a topically-applied pomegranate fruit extract can block skin tumor formation in mice. Another study demonstrated significant antitumor activity of pomegranate-derived materials against human prostate cancer. Yet another study shows the extracts of pomegranate can promote differentiation--the ability of cancer cells to revert to their normal counterparts.

Pomegranates are the richest source of a natural substance called ellagic acid. According to master herbalist and certified nutritionist Donald Yance in his book HERBAL MEDICINE, HEALING & CANCER, ellagic acid "inhibits cancer formation and is believed to inhibit cancer mutation by latching onto DNA-masking sensitive sites on the genetic material that might otherwise be occupied by harmful chemicals. Ellagic acid is particularly effective in the inhibition of lung cancer caused by tobacco."

Pomegranate also contains the anthocyanidins and proanthocyanidins (flavonoids), which are substances that have been shown in animal and test tube experiments to reduce tumor angiogenesis.

Pomegranate has been gaining popularity for menopausal symptoms due to the increased risk of breast

cancer, heart disease and strokes from artificial hormone replacement therapy. Certain herbs contain estrogen-like substances that do not have the serious side effects of prescription medications. Pomegranate contains estrone, a natural estrogen which is also produced by the human body. According to one study using mice, pomegranate extract improved the menopausal symptoms of depression and bone loss.

Pomegranate has also shown to possess anti-bacterial and anti-viral properties. The bark of the tree and root has been used in traditional medicine. The most recent research suggests that the various botanical components of the fruit tree may be required to obtain pomegranate's full protective benefit, in particular its **flowers** and **seeds**.

Extracts from **pomegranate flower** have been shown to suppress signaling of **endothelin-1**, a blood vessel-narrowing peptide implicated in **cardiac fibrosis** (abnormal thickening of the heart valves) and to help arrest the onset of **metabolic syndrome** as well as its associated pathologies of obesity, type 2 diabetes, and heart disease. Pomegranate **seed oil** offers further promise as a powerful anti-cancer agent, with particular potential in combating breast and prostate cancers.

Yes, more research needs to be done on pomegranate juice for us to know anything definitive about its benefits. But, so far, the future looks bright for this vibrant, fuchsia-colored fruit.