



Pomegranate Extract

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Literature Education Series On Dietary Supplements

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The pomegranate originated from Persia (Iran) and has been cultivated in Central Asia, Georgia, Armenia and the Mediterranean region for several millennia¹; eventually making its way to other parts of the world. More recently, pomegranates have been a source of interest due to their health benefits; as described below.

Antioxidant properties

To begin with, pomegranates are high in polyphenolic compounds, making its juice higher in antioxidant activity than red wine and green tea.² The most abundant of these compounds is ellagic acid which has been shown in research to be the antioxidant responsible for the free-radical scavenging ability of pomegranate juice.³ In animal research, pomegranate extract has also been shown to protect the antioxidant enzymes catalase, peroxidase, and superoxide dismutase from the effects of toxic chemicals.⁴

Anti-tumor/Anticancer effects

According to some researchers⁵, the actions of pomegranate's components suggest a wide range of clinical applications for the treatment and prevention of cancer, as well as other diseases where chronic inflammation is believed to play an essential developmental role. Pomegranate extract has been shown to inhibit the growth of human prostate cancer cells cultured in laboratory dishes, as well as slow prostate cancer growth in mice.⁶

An advantage that pomegranate has is that it seems to be capable of intervening at more than one critical

pathway in the process of carcinogenesis.⁷ In other research⁸, mice pretreated with pomegranate extract showed 70% less tumor incidence compared to mice that didn't receive the extract. The authors of the study indicated pomegranate fruit extract "possesses anti-skin-tumor promoting effects," and may possess chemopreventive activity "in a wide range of tumor models."

Additional research demonstrated that pomegranate seed oil was a safe and effective agent against skin cancer⁹ and colon cancer tumors¹⁰; and also inhibited the proliferation of human breast cancer cells up to 90%.¹¹ Likewise, pomegranate juice polyphenols have been shown to inhibit cancerous lesion formation by 47% in the mammary gland cells from mice.¹²

Cardiovascular benefits

Even more so than its anti-tumor/anticancer effects, pomegranate is known for its cardiovascular benefits. Human research has shown pomegranate to be effective in reducing several heart risk factors. In one study pomegranate inhibited the oxidation of low-density lipoprotein (LDL), and slowed the development of atherosclerosis.¹³ As a matter of fact, ten patients supplemented with pomegranate juice for one year experienced a 30% reduction in the narrowing of the carotid artery walls. Likewise, diabetic patients with elevated blood lipids who were supplemented with pomegranate juice for eight weeks experienced significant reductions in their total cholesterol, LDL, LDL:HDL (high-density lipoprotein) ratio, and total cholesterol:HDL ratio.¹⁴

Pomegranate has also been shown to reduce systolic blood pressure by 21% after one year.¹⁵ In other research, pomegranate reduced systolic blood pressure by inhibiting serum angiotension converting enzyme (ACE)¹⁶; a mechanism of action similar to ACE-inhibitor drugs which are used in controlling blood pressure, treating heart failure and preventing kidney damage in people with hypertension or diabetes.

Other potential benefits

Research has shown that pomegranate fruit extract can block enzymes that contribute to cartilage degradation in osteoarthritis¹⁷, suggesting a possible application for this disorder. In animal research pomegranate extract reduced weight and caloric intake.¹⁸ Pomegranate can also increase nitric oxide synthetase activity in the blood vessel endothelium. Nitric oxide synthetase increases the availability of nitric oxide, an antioxidant and vasodilator.¹⁹ Animal research suggests the antioxidant activity of pomegranates might help prevent arteriogenic erectile dysfunction.²⁰ In addition pomegranate appears to have gastroprotective effects. Animal research shows that pomegranate extract reduces gastric ulceration due to aspirin and alcohol²¹; and may help enhance B-cell function (a component of the immune system).²²

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