Punica granatum – Pomegranate

**Punica granatum 1:2 Fluid extract**

**Common Names:** Pomegranate  
**Botanical family:** Punicaeae  
**Part Used:** Rind & Seed  
**Dosage:** 40-80ml per week  
**Primary Active Constituents:**  
**Seed:** Polyunsaturated fatty acids (n-3) including linoleic, linolenic, punicic, oleic and palmitic acids // Protein // Isoflavones, mainly genistein // Coumestrol // Estrone  
**Contraindications:** None known  
**Actions:** Antioxidant // Anticarcinogenic // Anti-inflammatory // Antibacterial  
**Main Indications:**  
Cancer prevention  
Atherosclerosis  
Cardiovascular disease  
Diabetes  
Dental conditions  
UV-induced skin damage

**Historical Use & Research Summary**  
Pomegranate is an ancient fruit which has been widely consumed by various cultures for thousands of years. Ancient Babylonians believed pomegranate seeds were agents of resurrection, while the Persians regarded them as conferring invincibility on the battlefield. For ancient Chinese, the seeds symbolized longevity and immortality (Aviram 2000).  
Native to the area between Iran and the Himalayas in northern India, the pomegranate tree has been cultivated and naturalized over the entire Mediterranean region since ancient times. It is regarded as a healing food with numerous beneficial effects and was commonly used in folk medicine as an anthelmintic and vermifuge to expel worms and parasites; to treat ulcers, diarrhoea, dysentery, acidosis, haemorrhage, microbial infections and respiratory pathologies (Larrosa 2010, Lee 2010).  
There has been an explosion of interest in pomegranate in recent years and over the past decade, and significant progress has been made in establishing the individual constituents and their pharmacological activity. Extracts of all parts of the fruit appear to have therapeutic properties (Lansky, 2007) and current research suggests that therapeutically beneficial constituents include ellagic acid ellagittannins (including punicalagins), punicic acid, flavonoids, anthocyanidins, anthocyanins and estrogenic flavonols and flavones (Jurenka 2008).  
**Antioxidant**  
Pomegranate is a powerful antioxidant and it has been shown to have 2-3 times the antioxidant capacity of either red wine or green tea (Gil 2000).
Research Summary continued

Antioxidant - continued
Extractions of pomegranate have been shown to scavenge free radicals and reduce macrophage oxidative stress and lipid peroxidation in animals (Rosenblat 2006), and increase plasma antioxidant capacity in healthy elderly humans (Guo 2008).

Cancer-protective
Encouraging findings have emerged from research into Pomegranates potential anti-cancer activity. These include preventative effects against prostate, colon, breast, lung and skin cancers for extracts of Punica or some of its phytochemicals.

*In vitro* studies have shown several pomegranate fruit extracts to have an inhibitory effect on prostate cancer cell growth, and induce apoptosis on several prostate cancer cell lines, including the highly aggressive PC-3 cells. Decreased proliferation of DU-145 type prostate cancer cells has also been shown (Lanksy 2005; Albrecht 2004; Malik 2006).

Research using the breast cancer cell lines MCF-7 and MB-MDA-231 has demonstrated inhibitory activity of pomegranate constituents on tumour growth (Mehta 2004), proliferation and invasiveness (Kim 2002), angiogenesis (Toi 2003), and the ability to induce apoptosis (Jeune 2005).

Cardiovascular actions
The potential benefits of Pomegranate extracts on the cardiovascular system seem to largely relate to its potent antioxidant action. Oxidative stress induces inflammation by influencing the pathways that generate inflammatory mediators such as pro-inflammatory cytokines and adhesion molecules. Pomegranate juice has been shown to protect nitric oxide (NO) from free radical destruction and potentiate the antiproliferative effect of NO on rat aortic smooth muscle (Ignarro 2006). This action suggests a possible preventative effect on the development of atherosclerosis.

Diabetes
The powerful antioxidant properties of Pomegranate also suggest potential applications in preventing the long term consequences of diabetes. In addition, a number of researchers have investigated a potential hypoglycaemic effect of several pomegranate extracts (Baniani 2005).

Antibacterial properties
Clinical trials into the antibacterial properties of pomegranate are limited largely to oral pathogens. A hydroethanolic extract of pomegranate fruit was investigated for its antibacterial effect on dental plaque microorganisms & shown to be effective against a variety of oral pathogens (Menzes 2006). The constituent ellagitannin, punicalagin is thought to be largely responsible for this antibacterial action. A study investigating the effect of biodegradable chips impregnated with *Centella asiatica* (Gotu cola) and *P. granatum* rind on periodontal disease (subgingival placement) showed significant improvement on pocket depth, attachment level, bleeding and gingival plaque at 3 & 6 months compared to baseline (Sastravah 2005).

References

Punica granatum

Suggested Combinations

\[\text{Cancer prevention}\]
- Nasturtium
- Holy Basil
- Echinacea purpurea

\[\text{Cardiovascular disease}\]
- Hawthorn
- Ginkgo
- White horehound

\[\text{Diabetic complications}\]
- Cinnamon
- Rehmania
- Holy basil
- Milk thistle

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