

Health & Healing

YOUR DEFINITIVE GUIDE TO WELLNESS MEDICINE



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Help for High Cholesterol & Metabolic Syndrome

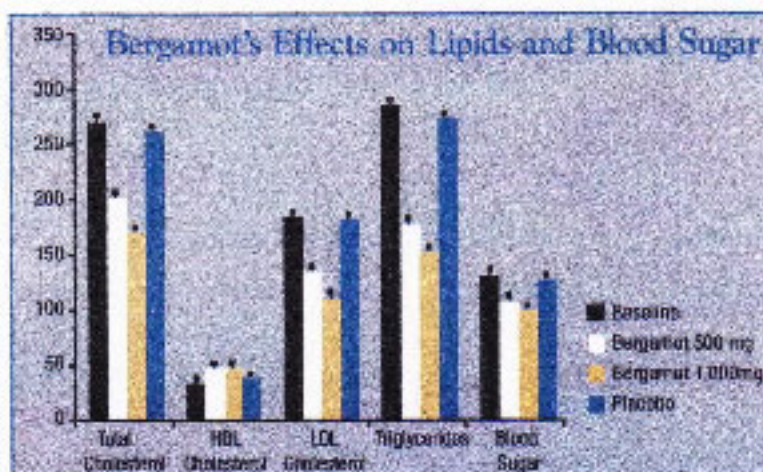
If you're a tea drinker, you're no doubt familiar with Earl Grey. Its distinctive aroma and subtle flavor make it the most popular flavored tea in the world. Earl Grey's characteristic fragrance comes from bergamot (*Citrus bergamia*), a type of orange that grows in the Calabria region of southern Italy. The essential aromatic oil in bergamot peel is also used in perfumes and prized in aromatherapy for its ability to reduce anxiety.

But what really piqued my interest in this relatively rare citrus fruit is compelling research on bergamot polyphenols. Polyphenols are natural compounds best known for their antioxidant effects. The benefits of red wine, tea, berries, soy, isoflavones, cocoa, and other "super foods" are due in large part to their high content of polyphenols, which protect against cardiovascular disease, cancer, bone loss, diabetes, and other degenerative disorders.

It turns out that bergamot juice (as opposed to the peel used in Earl Grey tea) contains exceptionally large amounts of several unique polyphenols. And when that juice is extracted, concentrated, and standardized in tablet form, it dramatically lowers triglycerides and LDL cholesterol, raises protective HDL, helps control blood sugar, and improves overall arterial function and cardiovascular health.

Lowers Lipids

Bergamot lowers LDL cholesterol almost as effectively as the wildly popular cholesterol-lowering statin drugs, but it also raises HDL—something statins cannot do. This is important because unlike LDL, which builds up in the plaque deposited in diseased



Results of a placebo-controlled study of patients with elevated lipids and blood sugar, baseline and after taking 500 mg or 1,000 mg of standardized bergamot extract for 30 days. Modified from: Mollace V, et al. Hypolipemic and hypoglycaemic activity of bergamot polyphenols: from animal models to human studies.

arteries, HDL escorts cholesterol out of the arteries to the liver. Therefore, a low HDL level is an independent risk factor for heart disease.

In a placebo-controlled clinical trial, Italian researchers gave either 500 or 1,000 mg of bergamot extract daily to study volunteers with high cholesterol levels. After one month, the average LDL in the two groups fell by 37 and 39 percent, respectively, HDL increased by 38 and 43 percent, and triglycerides, another cardiovascular risk factor, declined by 38 and 42 percent. These are impressive results for any intervention, let alone a nutritional supplement.

Safer Than Statins

Cholesterol reduction of this magnitude is usually possible only by blocking HMG-CoA reductase, an

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Benefits of Bergamot (continued from page 1)

enzyme involved in cholesterol production in the liver and in the synthesis of coenzyme Q10, a crucial antioxidant and essential player in the generation of cellular energy.

That's how Lipitor, Zocor, and other statin drugs work—and why they have so many adverse effects. Yes, they lower cholesterol, but by reducing CoQ10 levels, they literally drain the body's batteries and antioxidant reserves.

The FDA now requires manufacturers of statin drugs to warn patients that these medications are linked with type 2 diabetes, memory loss, confusion, and muscle weakness. But there's more: Statins can also cause liver toxicity, fatigue, muscle soreness, exercise intolerance, heart failure, amnesia, and even death.

Polyphenol Power

Two polyphenols abundant in bergamot, bruteridine and melitidine, also target this same pathway—but at a different level and in a gentler manner, so CoQ10 synthesis is not affected and statin-like side effects are avoided. Studies show no reduction in CoQ10 levels in animals taking bergamot, and patients who had previously been on statin drugs but discontinued them due to muscle pain, fatigue, and/or liver problems tolerated bergamot very well.

Furthermore, bergamot has other mechanisms of action that contribute to its lipid-lowering effects. It reduces triglyceride accumulation in the liver, a problem common in obese people, and it binds cholesterol to bile acids, which increases its excretion in the intestinal tract.

Helps Keep Your Arteries Healthy

Lipid levels are just one aspect of cardiovascular health. Bergamot polyphenols are also very potent antioxidants that protect against free radical damage in tissues throughout the body, including the all-important vascular endothelium.

The condition and function of the endothelium—the thin layer of cells lining the blood vessels—is perhaps the most important determinant of cardiovascular health as it is intimately involved in vasoconstriction/dilation and thus

blood pressure, inflammation, blood clotting, and the formation of new blood vessels. Polyphenol-rich bergamot extract has been demonstrated to suppress inflammation, inhibit plaque formation, and improve arterial responsiveness.

SOS for Metabolic Syndrome

Finally, bergamot ameliorates multiple aspects of metabolic syndrome. As I discuss in the story on diabetes on pages 6–7, we are teetering on the precipice of a full-blown epidemic of diabetes. Tens of millions of Americans are suffering with metabolic syndrome—the precursor to type 2 diabetes—and if you have abdominal fat, hypertension, abnormal lipids, and/or borderline high blood sugar, you're likely one of them.

Bergamot is positioned to become a first-line therapy for individuals with metabolic syndrome. In addition to its positive effects on cardiovascular risk factors, this extract also activates AMPK.

AMPK is a central regulator of energy and is thus involved in glucose and fatty acid metabolism. Turning on AMPK improves insulin sensitivity, promotes glucose uptake in cells, and suppresses the synthesis of glucose in the liver, thereby lowering blood sugar. It also stimulates the burning of free fatty acids and facilitates weight control.

In clinical trials, 500–1,000 mg of bergamot per day lowered blood sugar by about 22 percent, which is certainly on par with if not superior to diabetes drugs. Furthermore, some patients who have been taking this supplement report that it has also helped them lose weight.

Bergamot is one of the most exciting new supplements to come down the pike in recent years. If you are struggling with elevated cholesterol, metabolic syndrome, or cardiovascular disease and looking for a drug-free approach, I suggest you give it a try.

My Recommendation

The suggested dose of bergamot is 1000-1500mg of a standardised extract, taken twice a day 20-30 minutes before meals. Take for 60-90 days, and reevaluate your dose accordingly. Bergamot is safe and well tolerated.

The brand of bergamot we use at clinic, is BergaMet Mega, contains 650mg of a 38 percent extract.

References

- Mollace V, et al. Hypolipemic and hypoglycaemic activity of bergamot polyphenols: from animal models to human studies. *Planta Med*. 2011 Apr;82(3):309-316.
- Picerno F, et al. Citrus bergamia juice: phytochemical and technological studies. *Nat Prod Commun*. 2011 Jul;6(7):951-955.