

# Blood Pressure Support

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By taking your patient's blood pressure every visit, or at least once a week, you have a golden opportunity to transition pain patients into wellness patients. Experts estimate 60 million people in the US have problems with hypertension. That comes out to about "one out of five people." Some are already on medication, but many don't know they have it. The sad thing about medications is that sooner or later they cause side effects. For example, the first round of hypertensive meds is generally hydrochlorothiazide. The blatant depletions accumulating from thiazides are Coenzyme Q10, Magnesium, Potassium, Sodium, Zinc, and B1.

“Wait Joe! We need CoQ, magnesium, and potassium for a healthy heart.” Exactly... that is why it's our job to teach our patients the side effects and allow them to make informed decisions about their health care.

Mark C. Houston MD, MS, from the Hypertension Institute in Nashville, is author of “Handbook of Hyper-tension”, “What Your Doctor May NOT



Tell You About Hypertension,” and “What your Doctor May NOT Tell You About Heart Disease.” He is certified in internal medicine, anti-aging, and cardiology. He is constantly combing the literature for nutrients and phytochemicals that have been shown effective to reduce hypertension.

After several years of clinical trials, Dr. Houston, in conjunction with Biotics Research Corporation, has created a very unique product called Bio-CardioSirt BP. Knowing the mechanisms of the drugs on the market, Dr. Houston looked for nutrients that would enhance or support the same mechanisms that

drugs manipulate, only naturally. You see, it's the endothelial and vascular smooth muscle dysfunctions that are the initiating and perpetrating factors in essential hypertension.

Nitric oxide is one of the central regulators of vascular tone and homeostasis. Most nitric oxide in the vascular wall is produced by the endothelial cells via the enzyme endothelial nitric oxide synthase (eNOS). So, by optimizing the biochemical conditions necessary for healthy nitric oxide production by endothelial nitric oxide synthase, we expect a natural homeostasis of the smooth

muscles and normalization of blood pressure.

In conjunction with the Hypertension Institute in Nashville, Dr. Houston conducted a placebo controlled clinical trial of Bio-CardioSirt BP with 42 adult patients. All participants had hypertension as defined by systolic blood pressure over 140 mmHg and/or diastolic blood pressure over 90. Any patients taking medication were instructed to stop their medication as a washout prior to participation in the study. Twenty-two patients were given Bio-CardioSirt BP, and twenty were given a placebo. But, here's the interesting part. Patients were informed not to make any dietary or lifestyle changes such as smoking, coffee consumption, alcohol intake, or exercise programs.

Blood pressure was taken after two weeks and again after four weeks. The group taking Bio-CardioSirt BP lowered systolic blood pressure 13.24 mmHg after two weeks and 15.96 mmHg after four weeks. Diastolic pressures were reduced by 10 mmHg after two weeks and 11 mmHg after four weeks. At week four the Bio-CardioSirt BP group had lowered both systolic and diastolic blood pressure significantly compared to placebo.

Bio-CardioSirt BP contains seven nutrients: vitamin C (in the ascorbate form), grape seed extract, vitamin B6, vitamin D3, biotin, magnesium, and taurine. Let's take a brief look at the rationale for the formula.

Tetrahydrobiopterin (BH4) is a cofactor for the production of endothelial nitric oxide synthase (eNOS), but it must be in a reduced state to work. Interestingly, cellular levels of BH4 are dependent upon the reduced form of vitamin C, which has been shown to stabilize BH4 in endothelial cells.

Grape seed extracts prevent oxidative stress by inhibiting NADPH oxidase (NOX), which

produces the superoxide radical, which lowers nitric oxide.

Vitamin B6 is a cofactor for lysyl oxidase, which enhances arterial integrity by promoting the cross linking of collagen and elastin. Also, B6 is a cofactor necessary to convert homocysteine to methionine.

Vitamin D3 has been indicated in several mechanisms to lower blood pressure by increasing the activity of endothelial nitric oxide.

Biotin is a direct activator of soluble guanylate cyclase (sGC). Nitric oxide is known to mediate vasodilatation via guanylate cyclase activation.

Magnesium is an essential cofactor for over 300 different enzymes, and its deficiency has been reported to promote atherosclerosis, thrombosis, and hypertension.

Taurine plays multiple roles as an antioxidant: helps pull magnesium, potassium, and calcium in and out of heart cells. It also acts as an inhibitory neurotransmitter. But for our discussion, we are interested in its vaso-dilatation effects. A team of researchers in Japan, in the 2000 edition of the "American Journal of Clinical Nutrition," demonstrated the role of taurine in the dilation of the vascular system. Taurine supplementation can increase secretion of nitric oxide, which dilates your blood vessels and improves blood flow and delivery of oxygen to your muscles.

Below, you can see more information in an article written by Dr. Houston and Bill Sparks. But let me remind you that hypertension is a lifelong therapy, and by staying current with complimentary nutrients, we can help our patients avoid or prolong the onset of medication, while enhancing other healthy biochemical pathways.

Thanks for reading this week's edition. I'll see you next Tuesday.