

HTN Supreme™



Natural support for healthy blood pressure & cardiovascular health*

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HTN Supreme™ provides two ingredients to support healthy blood pressure and promote overall cardiovascular health.* Each 4-capsule serving provides 1.5 grams of bonito peptide powder (standardized to contain 85% peptides) and 200 mg of grape seed extract (standardized to contain 90% polyphenols). According to the Centers for Disease Control and Prevention (CDC), hypertension affects approximately 75 million adults in the US—nearly a full third of the adult population. An additional 1 in 3 adults is living with prehypertension.¹ There are numerous pharmaceutical drugs that address hypertension effectively but they often induce undesirable and potentially harmful side-effects. Combined with dietary and lifestyle modification, HTN Supreme™ may have a beneficial impact on maintaining a healthy blood pressure and positively affecting cardiovascular health.*

Highlights

Bonito peptide powder

This unique ingredient is sourced from dried, smoked fish (*Katsuwonus pelamis*, a.k.a. skipjack tuna) and is known as katsuobushi in its native Japan, where the population has long been recognized for its outstanding cardiovascular health benefits. Broth made from dried bonito was used traditionally to combat fatigue and improve blood circulation.² Bonito peptide's main mechanism of action is inhibition of angiotensin-converting enzyme-I (ACE). It is also an antioxidant properties and is a metal chelator.³ Researchers have stated that dried bonito "is expected to be a physiologically functional foodstuff having antihypertensive effects."⁴

An *in vitro* study on rat aortas showed that dried bonito extracts relaxed smooth muscle contractions induced by norepinephrine and inhibited contractions induced by angiotensin I.⁵ Researchers concluded that this compound has antihypertensive effects by acting directly on vascular smooth muscle. Turning to *in vivo* research, oral administration of bonito peptides has been shown to reduce blood pressure in hypertensive rats.^{6,7}

Human trials show similar blood pressure-reducing effects from dried bonito. Among subjects with borderline or mild hypertension, supplementation with bonito peptides resulted in substantial decreases in systolic and diastolic blood pressure in over 60 percent of subjects.⁸ (Approximately 37 percent experienced no change, and no subjects experienced increases in blood pressure.) Reduction in blood pressure was also observed in a separate study of subjects with grade-I hypertension or high-normal blood pressure.⁹ In a study of elderly hospital inpatients, compared to placebo, consumption of dried bonito broth twice daily for one month resulted in a significant decrease in systolic blood pressure and a decrease in urinary 8-hydroxydeoxyguanosine (8-OHdG, a marker of oxidative stress).¹⁰ A reduction in this compound was also seen in healthy female subjects after two weeks of taking dried bonito broth.¹¹ In addition to this finding, a significant increase in peripheral blood flow was also observed, which was correlated with a significant improvement in mood state, including fatigue. (It is believed that the improvement in mood and fatigue likely resulted from the improved blood flow.)

Grape seed extract (*Vitis vinifera*)

HTN Supreme™ contains MegaNatural®-BP, a patented form of grape seed extract (GSE) with clinically proven effects. This unique ingredient provides 90-95% total polyphenols, the bioactive compounds in GSE. It is formulated to include a higher percentage of low-molecular weight polyphenols, allowing for greater absorption and improved bioavailability. It has among the highest ORAC (oxygen radical absorbance capacity) values of any GSE currently available.

The beneficial effects of the patented form of GSE in this product have been established by researchers at the University of California, Davis. In one study, GSE had a similar relaxing effect as acetylcholine (a known vasodilator) on rabbit aortic tissue.¹² The same study showed a beneficial effect on human umbilical vein endothelial cells (HUVECs). The mechanism of action was determined to be phosphorylation and activation of endothelial nitric oxide synthase (eNOS), which has been confirmed by other research.¹³ A significant body of research supports this role for dietary polyphenols in "nutritional improvement of the endothelial control of vascular tone."¹⁴

Elevated blood pressure is included in the diagnostic criteria for metabolic syndrome. In a randomized, double-blind, placebo-controlled study of subjects with metabolic syndrome, four weeks of supplementation with the patented GSE in this product resulted in significant decreases in both systolic and diastolic blood pressure and a non-significant decrease in oxidized LDL (oxLDL).¹⁵

Benefits*:

- Promoting healthy blood pressure
- Supporting blood vessel elasticity
- Reducing LDL oxidation
- Reducing platelet aggregation and thrombosis
- Supporting a healthy inflammatory response

(The greatest decrease in the latter was observed in subjects taking 300 mg GSE per day and who had the highest concentration of oxLDL at baseline.) A decrease in oxLDL was also observed in a study of GSE supplementation in heavy smokers age 50 or older.¹⁶ A separate double-blind RCT supports the beneficial effect of GSE on blood pressure in subjects with pre-hypertension. Compared to placebo, supplementation with GSE for 8 weeks resulted in significant decreases in systolic and diastolic blood pressure.¹⁷ A more recent double-blind RCT showed that among middle-aged adults with hypertension, supplementation with GSE for 6 weeks resulted in significant decreases in systolic and diastolic BP.¹⁸ (Compared to placebo, the change in systolic pressure was significant but the change in diastolic was not.)

GSE may be beneficial for mitigating an exercise-induced rise in BP in individuals with prehypertension. This was shown in a study of acute administration of GSE to prehypertensive men prior to submaximal cycling workouts. The results showed that a single dose of GSE reduced mean arterial pressure and peripheral vasoconstriction, augmented stroke volume, cardiac output and total vascular conductance, and augmented flow-mediated dilation.¹⁹ Placebo treatment had no effect on any of these variables. A meta-analysis of RCTs looking at the effect of GSE on cardiovascular risk markers concluded that GSE significantly lowers systolic blood pressure and heart rate, but does not have significance with regard to modulating diastolic pressure, blood lipids or C-reactive protein.²⁰ A more recent meta-analysis found that GSE is effective for improving blood pressure and seems particularly beneficial for younger individuals and those who have obesity or another metabolic disorder.²¹

Regarding other cardiovascular benefits of GSE, animal and in vitro research (including that done on human whole blood or plasma) indicates that GSE is antithrombotic, anti-inflammatory, and reduces platelet aggregation,²²⁻²² leading researchers to state, "the multi-potential effect of GSE on the coagulation system clearly suggests that GSE could be considered as a promising nutraceutical in the prevention of cardiovascular thrombotic events caused by different mechanisms."²⁵

Supplement Facts

Serving Size 4 capsules
Servings Per Container 30

Amount Per Serving	% Daily Value
Bonito Peptide Powder [standardized to contain 85% peptides]	1.5 g *
Grape Seed Extract (as MegaNatural®-BP) (<i>Vitis vinifera</i>)(seed) [standardized to contain 90% polyphenols]	200 mg *

*Daily Value not established.

Other Ingredients: Cellulose (capsule), dicalcium phosphate, tricalcium phosphate, vegetable stearate
Contains fish (tuna, mackerel).

Recommended Use: Take four capsules per day, or as directed by your health care practitioner (divided dosing recommended).

For additional support for healthy blood pressure, consider combining HTN Supreme™ with these other Designs for Health Formulations as appropriate: Water Ease™, NOx Synergy™, Vessel Forte™, or Taurine.

For a list of references or tables cited in this document, please visit:

http://catalog.designsforhealth.com/assets/itemresources/HTNSupreme_References.pdf

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*These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure or prevent any disease.

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