stronger, more flexible vessels

 \approx veins \approx arteries \approx lymph vessels \approx capillaries

Stronger, Flexible Vessels Keep Blood Flowing

When veins become weak, brittle and thin, gravity pulls blood backwards and causes veins to enlarge, bulge and twist. The backflow becomes acidic from accumulation of metabolic waste and causes an intense inflammatory reaction which results in varicose veins, pain, fatigue, itching, burning, swelling, cramping, restlessness and even more serious problems including chronic venous insufficiency (CVI).

Flavay[®] binds to collagen fibers and realigns them to a more youthful form



Flavay[®] reactivates collagen production and boosts vitamin C in synthesis of collagen and elastin in vascular walls. As a strong antioxidant, Flavay® protects collagen, elastin and hyaluronic acid from over-crosslinking and destructive inflammatory enzymes. (18,25,61,74,81)

Flavay® improves strength and tone of veins and arteries by strengthening the essential constituents in vascular walls (collagen and elastin).



collagen polypeptides

Studies demonstrate Flavav® improves beneficial crosslinking between amino acids of fibers which give collagen its flexibility and strength and at the same time preventing undesirable overcrosslinking that weakens collagen. (18,19,23,60,266-268,279)

Research found Flavay® reduced damage to connective tissue in capillaries up to 70%. (18,19,23,60,266-268,27

better circulation & blood flow



Blood Flow in **Clinical Trials**

Licensed and sold for vascular (vessel) health in France for more than 70 years, Flavay® is clinically proven to improve circulation. lessen impaired venous backflow, seal leaky capillaries and prevent outflow of blood and liquid. (44-48,249,250)

A review of 26 clinical studies concluded that in subjects with chronic venous insufficiency (CVI), Flavay[®] significantly improves venous function in swelling, pain, paresthesia (burning, numbness,

tingling, prickling) and nocturnal leg cramps. (42,230)

Flavay® has been extensively tested in humans and patented for strengthening antioxidant defense systems, reducing inflammation and edema (swelling), and improving overall circulation and vascular health.

Your blood flows better and joints hurt less with Flavay®



41% very good improvement **28% good** improvement 27% improvement 96% experienced

A study of persons with serious circulation problems found 96% experienced improvement taking Flavay®. (44)

69% of subjects reported 69%

50% pain relief

50% reduction in clinical parameter scores for pain. paresthesia and inflammation in those taking Flavav[®]

A double-blind, placebo-controlled study of persons with chronic inflammation caused by chronic venous insufficiency (CVI) found improved venous function with 300mg Flavay[®] daily for 28 days. 69% of those taking Flavay[®] reported 50% reduction in clinical parameter scores for inflammation, paresthesia and pain. (48)



Statements made herein have not been evaluated by the Food & Drug Administration. This product is not a drug and not intended to diagnose, treat, cure or prevent any disease.

© Copyright 2020 Healthy Source, LLC

improve nitric oxide endothelial function



better circulation & blood flow



improve blood platelet reactivity



anti-lipid oxidation



cardio & vascular health

stronger, more flexible vessels



reduce swelling & inflammation

stronger, more flexible blood cells

improve endothelial function & healthy nitric oxide levels

Nitric Oxide is an Essential Signaling Molecule

Nitric oxide (NO) is a signaling molecule used by every tissue and organ of our body, from our muscles to our eyes to our brain to the disease-fighting cells of our immune system. A large and growing body of research reveals how important nitric oxide is to each of our body systems and loss of nitric oxide function is one of the earliest indicators of disease. (203,204,446,459)



Nitric oxide creates oxidation and too much nitric oxide can be deadly and actually contribute to heart disease and strokes, arthritis, asthma and Alzheimer's disease. (10,239,265,292,296)

Endothelial Dysfunction in Vascular Diseases: **Oxidative Stress**

Oxidative stress alters endothelial function, damages nitric oxide synthesis (eNOS), and results in superoxide (and other reactive oxygen species) which further damages endothelial cells with more oxidant stressors and ultimately apoptosis (cell death). (439 457)

When in the presence of superoxide, nitric oxide initiates lipid peroxidation and oxidizes lipid antioxidants. (346) produce Superoxide

Statements made herein have not been evaluated by the Food & Drug Administration This product is not a drug and not intended to diagnose, treat, cure or prevent any disease.

Endothelial Function (Nitric Oxide)

Flavay® stimulates and protects endothelial nitric oxide synthase (eNOS) and improves Nitric Oxide levels

> blood flow increases muscles surrounding vessels relax platelets relax (unsticky)

Endothelium (endothelial cells) produce Nitric Oxide

eNOS

Platelets are relaxed (unsticky)

Smooth muscle relaxes (vessel dilated)

Flavay[®] Improves Endothelial Dysfunction

Flavay® is shown to balance nitric oxide activity, both to stimulate normal synthesis of endothelial nitric oxide (eNOS) and to inhibit over-production of nitric oxide. Studies show Flavay[®] protects against toxic over-production of nitric oxide by blocking harmful nitric oxide synthases (NOSs). (10.53,261,265,302,306,315,372,414)

Flavay improves endothelial nitric oxide levels by improving endothelial function so blood flow increases, muscles surrounding vessels relax and platelets relax (unsticky)

Endothelial Dysfunction (Superoxide)

Oxidative stress alters endothelial nitric oxide synthase (eNOS) resulting in Superoxide rather than Nitric Oxide

> blood flow is impaired muscles surrounding vessels constrict platelets activate (sticky)

Endothelium (endothelial cells)

eNOS

Platelets are activated (sticky) Smooth muscle constricts (vessel narrows)

SO

How Flavay® Normalizes Reactivity ("Stickiness") of Blood

Flavay® aids production of endothelial nitric oxide which naturally reduces platelet aggregation ("sticky blood") causing blood platelets to relax, return to their normal smooth condition: also relaxing muscle surrounding blood vessels. (10 38-54 103 202 286 287)

A large and growing body of evidence shows that platelet activation ("sticky blood") is a central part of the inflammatory process. (399)

reduce inflammation & stronger antioxidant defenses

We now understand that cardiovascular disease is associated to an inflammatory process. Atherosclerosis is characterized by chronic low grade inflammation of arteries which results in an accumulation of lipids and macrophages/lymphocytes-a systemic inflammatory process. (391,438)

Flavay[®] Inhibits Inflammatory Enzymes

Angiotensin-Converting Enzyme (ACE) Oxidative stress produces an increase in enzymes such as cyclooxygenase (COX) and lipoxygenase (LOX) which are implicated Flavay® is shown to improve vasodilation and mildly inhibit in the release of interleukins and chemokines, and it has been angiotensin-converting enzyme (ACE) by modulating nitric shown that Flavay® inhibits these pro-inflammatory enzymes. oxide metabolism in endothelial cells. (292,296) (391,185,230,387,388)

C-Reactive Protein (CRP)

Flavay® is shown to decrease levels of pro-inflammatory molecules C-reactive protein (CRP), interleukin-6 and tumor necrosis factor-alpha (TNF-alpha). (435)

Myeloperoxidase (MPO)

Flavay® is shown to significantly suppress myeloperoxidase (MPO) activities (marker of

enzymes

inflammation) in a dose-dependent manner. (425)

Helps raise cellular levels of glutathione (GPx) including acetylcysteine and enhances glutathione reductase activity Helps increase synthesis of

Superior antioxidant activity

vitamins C, E and

beta-carotene

(vitamin A)

in studies comparing against

and DNA protection

and cellular levels

of superoxide

(Cu/Zn SOD)

dismutase

Protects against oxidative synthesis and release of Regenerates pro-inflammatory and improves cellular activities of vitamin C and protective effect of vitamin E and activity of vitamin A

Patented antioxidant & anti-inflammatory

flavay balance mproves antioxidant capacity

Helps

and stimulates antioxidant defense syst<u>ems</u>

Adhesion Molecules & Inflammation

Research also shows Flavay® is beneficial for cardiovascular health as it modulates monocyte adhesion during the inflammatory process. Flavay® is found to decrease the expression of cell adhesion molecules in endothelial cells. (391.185.230.387.388)

Flavay[®] Strengthens Antioxidant Defenses & Improves Vascular Health

Flavay[®] is patented and clinically proven to significantly strengthen antioxidant defense systems, improve intracellular serum total antioxidant activity, reduce inflammatory markers and improve vascular (vessel) health.

Clinical and in vivo experiments show that Flavay® decreases cardiac levels of reactive oxygen species (ROS) and malondialdehyde (MDA), a metabolite which forms when ROS and oxidized low density lipoproteins (LDL) attack fatty acids in cell membranes. (438)

> Clinical studies show taking Flavay® increases antioxidant capacity of plasma, decreases oxidation of LDL and favorably affects lipid profile. (144,145,277,283,284,454)

Protects against ipid peroxidation damage

Highly reactive in both lipid (fat) and aqueous (water phases of oxidatio

nitric oxide activity, both to stimulate normal synthesis and inhibit over-production of nitric oxide

Clinical and in vivo studies show Flavay® as much as doubles plasma levels and activities of vitamins C and E and A. and catalase, superoxide dismutase (SOD) and glutathione (GPx), (33.64.71.361.371)

A double-blind, randomized, placebocontrolled study found Flavay® exerts antiinflammatory effects in blood, significantly reduces expression of inflammatory genes in leukocytes and noted "significant improvement of overall vascular health." (454)

"[A] method for preventing and fighting the harmful biological effects of free-radicals... namely... inflammation, ischemia (reduced blood flow)... collagen degradation" --- U.S. Patent No. 4.698.360