DiaVis® Capsules

Description

DiaVis is a specialized formula providing nutritional support for people with diabetes mellitus or those highly at risk for this condition. It offers tailored antioxidant and multi-nutrient support for whole body and visual health in 2 capsules daily.

DiaVis Highlights

- Delivers key antioxidants to combat oxidative stress
- Contains essential vitamins and minerals whose status may be low in diabetics
- Provides polyphenols to promote microvessel integrity and a healthy equilibrium of fluids in the eye
- Made from premium ingredients and manufactured according to the highest quality standards

Oxidative Stress and Vision Loss

Diabetics are at increased risk for vision loss, and oxidative stress is a major contributing factor. Oxidative stress is an imbalance between production of reactive oxygen and the body's ability to quench these compounds or repair resulting damage. Elevated blood glucose can cause overproduction of oxygen free radicals, auto-oxidation of glucose and excess glycosylated proteins – factors contributing to development of diabetic complications[1,2]. Type 1 and 2 diabetics and those with retinopathy have been found to exhibit low antioxidant status[3]. Since antioxidants with different activities work in a synergistic network, DiaVis emphasizes a diverse antioxidant array to bolster defenses.

In addition to oxidative stress, a build-up of fluids (edema) from swollen and leaky vessels, the growth of new blood vessels (angiogenesis) and inflammation all contribute to vision loss. DiaVis provides clinically tested polyphenols with antioxidant and natural anti-inflammatory action, and that promote strong blood vessel walls and capillaries. Other nutrients in DiaVis play a role in normal glucose metabolism and are often low in diabetics, and many are associated in some studies with lower risk of developing type 2 diabetes.

Rationale for Inclusion of Key Ingredients

Quercetin (110 mg)

Quercetin, a dietary flavonoid, has been shown experimentally to inhibit tyrosine kinase, an enzyme which mediates vascular endothelial growth factor (VEGF). VEGF induces vascular permeability. Quercetin has also demonstrated protection of retinal pigment epithelial and cortical cells during oxidative stress in vitro. Several large-scale epidemiologic studies report clear associations between dietary quercetin and lower mortality risk from coronary heart disease and stroke. Recent work suggests quercetin accumulates in atherosclerotic lesions where it helps prevent build-up of oxidized LDL in macrophages. In a clinical trial, diabetics on a high quercetin diet showed significantly less DNA damage in lymphocytes compared to a low quercetin diet[13]. DiaVis provides quercetin at the level studied in that clinical trial.

Pine Bark Polyphenols (125 mg) – Including 20 mg Pycnogenol®

Pine bark is a concentrated source of polyphenols, which are found in grapes and other dietary sources. Polyphenols exhibit strong antioxidant action and act as natural anti-inflammatories, possibly by inhibiting pro-inflammatory gene expression. They selectively bind to collagen and elastin, strengthening blood vessel walls and improving capillary resistance capillaries. Finally, they aid in the production of the endothelial vasodilator nitric oxide.

Pine bark extract (Pycnogenol®) has been tested in over 1200 people with retinopathy and diabetic retinopathy in open and controlled trials, with results generally supporting a delay of progression[14,15]. Preliminary studies report pine bark improves microcirculation and symptoms in diabetes, neuropathy and edema. In a double-blind study, researchers report that Pycnogenol® pine bark extract taken over three months lowered the use of ACE inhibitors in type 2 diabetics by 50%[16]. The level of polyphenols in DiaVis is consistent with those clinically tested.

Alpha Lipoic Acid (300 mg)

Alpha lipoic acid is a fat and water soluble antioxidant that plays a crucial role in the energy-producing mitochondria of cells. It regenerates other antioxidants including glutathione, a key antioxidant enzyme in eye tissue. In animal models of diabetic retinopathy, alpha lipoic acid has shown a protective effect against microvascular damage[11]. Alpha lipoic acid is also concentrated in nerve cells, and numerous well-controlled clinical trials report that it reduces symptoms of diabetic sensorimotor polyneuropathy[12]. DiaVis delivers high potency alpha lipoic acid.

Beta-Carotene (500 IU), Vit A (500 IU), C (250 mg) & E (60 IU)

Diabetics often have increased oxidative stress – a factor in the development of many diabetic complications. Both types 1 and 2, as well as those with retinopathy, can have lower blood antioxidant levels. DiaVis provides beta-carotene since this antioxidant is reported to be significantly lower in diabetics than controls[4].

DiaVis also provides pre-formed vitamin A, as bioavailability of dietary beta-carotene has been found to be lower and more variable than previously believed, particularly in women. Vitamin C is highly concentrated in the eye's aqueous humor and in nerve cells, and higher blood levels are reportedly linked with a lower risk of developing diabetes in people followed long term. In one study, long term use of C, E and/or a multinutrient was associated with reduced risk of retinopathy[5]. DiaVis provides vitamin C in the dose range estimated to saturate eye tissues. The important fat-soluble antioxidant, vitamin E, is provided as a mixture of both natural alpha and gamma vitamin E.

Vitamin D (800 IU)

Low vitamin D status is more common in type 2 than type 1, and hypovitaminosis D is highly prevalent in type 2 adults[6]. Both vitamin D & calcium insufficiency may negatively influence blood glucose levels. One large prospective study found levels of vitamin D greater than 800 IU are significantly better than 400 IU in reducing type 2 diabetes risk. Vitamin D fights inflammation by decreasing production of pro-inflammatory interleukins. In addition, preliminary evidence has shown that vitamin D intake reduces C-reactive protein (CRP), a marker of systemic inflammation.

In type 2 diabetes, low vitamin D levels are also reported to be strongly and independently associated with greater thickening

Product Recommendation

*It is highly recommended that DiaVis be taken in conjunction with **OmegaAdvance**, a concentrated source of the omega-3 fats EPA and DHA with lutein and olive leaf extract. The ingredients in OmegaAdvance complement DiaVis by helping to guard against factors involved in detrimental changes to the retina's vessels and nerve cells.*

Suggested Use: Take a total of two capsules daily, with meals.

Note: Pregnant or lactating women or individuals with medical conditions should consult their physician. People with diabetes who take prescription medications should inform their primary care doctor when adding DiaVis to their daily regimen so that medication doses can be routinely monitored. Keep out of the reach of children.

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.

Supplement Facts

Serving Size 2 capsules **Servings per Container 30**

	Amount per Serving	% Daily Value
Vitamin A (50% from retinyl palmitate, 50% from beta-carotene)	1000 IU	20%
Vitamin C (as ascorbic acid)	250 mg	417%
Vitamin D (as cholecalciferol)	800 IU	200%
Vitamin E (from d-alpha tocopheryl succinate and mixed tocopherols)	60 IU	200%
Thiamin (from thiamine hydrochloride)	18 mg	1200%
Riboflavin	3.4 mg	200%
Niacin (from niacinamide)	20 mg	100%
Vitamin B6 (from pyridoxine hydrochloride)	10 mg	500%
Folic Acid	200 mcg	50%
Vitamin B12 (as cyanocobalamin)	50 mcg	833%
Biotin	200 mcg	67%
Magnesium (from magnesium oxide, gluconate)	200 mg	50%
Zinc (from zinc oxide)	7.5 mg	50%
Chromium (from chromium picolinate)	200 mcg	167%
Alpha Lipoic Acid	300 mg	†
Quercetin	110 mg	†
Pine Bark Extract (95% procyanadins)	125 mg	†
Pycnogenol® French Maritime Pine Bark Extract (65-75% procyanadins)	20 mg	†
Lutein (FloraGLO®)	2 mg	†
Zeaxanthin (FloraGLO®)	120 mcg	†

† Daily Value not established.

Other Ingredients: Gelatin, Water, Magnesium Stearate and Silica.

Pycnogenol® is a registered trademark of Horphag Research Ltd. Use of this product is protected by one ore more of U.S. patents #5,720,956 / #6,372,266 and other international patents. ***FloraGLO®*** is a registered trademark of Kemin Foods, LC. U.S. Patent No. 4,822,816. Other patents pending.

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Vitamin D (continued)

of the carotid artery wall, a measure for assessing atherosclerotic cardiovascular disease. Experts calculate that 1,000 IU vitamin D daily is required to bring half the population into the range of serum D associated with multiple health endpoints, while risk assessments conclude that this is a safe supplemental level[7]. DiaVis supplies 800 IU daily, to accommodate any added vitamin D from a calcium or multi supplement.

B-Vitamins: Thiamin (B1, 18 mg), Riboflavin (B2, 3.4 mg), Niacinamide (B3, 20 mg), Pyridoxine (B6 10 mg), Folic Acid (200 mcg), Cobalamin (B12, 50 mcg), Biotin (200 mcg)

Recent research reports that type 1 & 2 diabetics excrete more B1 and have low plasma levels of this vitamin[8]. B1 plays a role in glucose metabolism, and inadequate levels increase risk of kidney, nerve and eye complications in animal models of diabetes. Vitamins B1 and B2 have been linked to decreased cataract risk. Low plasma B6 has been observed in those with types 1 and 2, and B6 status declines with age. Older people in general are at high risk of low blood levels of B12, a vitamin critical to proper nerve function. Folic acid, B6 and B12 also help maintain healthy homocysteine levels. Elevated homocysteine has been associated with the prevalence and severity of kidney failure in diabetes patients. Vitreous homocysteine levels have also been shown to be elevated in patients with proliferative diabetic retinopathy compared to nondiabetic patients with nonproliferative ocular diseases[9]. DiaVis furnishes a full array of B vitamins to ensure adequacy and balance between them.

Magnesium (200 mg), Chromium (200 mcg), Zinc (7.5 mg)

Diabetics with poor glucose control are often low in magnesium, a mineral involved in maintaining normal endothelial function and insulin sensitivity. In an analysis of the NHANES survey, magnesium supplementation was associated with lower levels of the inflammatory biomarker CRP. Population health studies consistently link adequate magnesium intakes with a reduced risk of developing hypertension, diabetes and the metabolic syndrome. A meta-analysis reports that for every 100 mg increase in magnesium intake, the risk of developing type 2 declined by 15%[10]. DiaVis delivers concentrated bioavailable forms of magnesium at a well tolerated level.

Zinc plays a vital role in insulin production, storage and secretion. It is also a cofactor for the antioxidant enzyme superoxide dismutase found in eye tissues. DiaVis includes a modest level of zinc to help offset the urinary zinc loss associated with increased insulin secretion in type 1 & 2 diabetics.

Chromium facilitates the action of insulin. While results vary in trials assessing chromium's affect on fasting blood glucose, insulin levels, and HbA1c in diabetics, evidence indicates it is of benefit primarily to those low in chromium and with impaired glucose. DiaVis provides the most-studied form, chromium picolinate.

Lutein (2 mg) Zeaxanthin (120 mcg)

Lutein and zeaxanthin compose the macular pigment of the retina, where they filter blue (visible) light that can induce photo-oxidative stress. A number of population health studies link higher lutein and zeaxanthin intakes with reduced risk of cataract and macular degeneration. Findings from one study suggest that higher levels of plasma lutein and zeaxanthin may be protective against early atherosclerosis[17]. In an animal model of diabetes, lutein decreased oxidative stress in acute retinal ischemia. The amount of lutein in DiaVis doubles the average US dietary intake.

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