

Oligomeric Proanthocyanidins (OPCs)

Oligomeric proanthocyanidins (OPCs) are plant based flavonol compounds that are commercially extracted from grape seeds or pine bark. The oligomeric proanthocyanidins, as a group of distinct compounds are named after the flavonoid compounds they are derived from. OPCs can be sourced from many plants, being abundant in a variety of flowers, in hops, and the leaves and fruits, or the berries and nuts of many plant species. They are also found in beans and in red wine. This class of compounds is found at the highest concentrations in the skin, the bark, and the seeds of different plant species. The simplicity of their chemical structure differentiates these versatile healing compounds from the more complex flavonoids they are partly derived from, the simple chemical structure of these compounds enables their rapid absorption into the blood. They are considered to be beneficial compounds for human health.

One major benefit of the oligomeric proanthocyanidins (OPCs) is their extreme potency as antioxidants in the body. They are in a class of their own among the most common natural antioxidants. For example, the nutrient vitamin E acts only against fat soluble oxidizing agents in the body, and the vitamin C acts only against water soluble oxidizing agents, the oligomeric proanthocyanidins (OPCs), however, have an active effect against both types of oxidizing agents and are therefore seen as being the most beneficial antioxidants seen in the natural world. Oligomeric proanthocyanidins (OPCs) have other beneficial effects as well, helping reduce inflammation in the tissues as well as stabilizing the walls of different blood vessels in the body, and in supporting tissues that are rich in collagen and elastin. Oligomeric proanthocyanidins (OPCs) also positively affect the proteins found in cartilage, in the tendons, the blood vessels, keep skin young and elastic, and aid muscle growth and maintenance.

Oligomeric proanthocyanidins (OPCs) are the best supplement for vascular health among all the herbs and herbal supplements - they actively support and bolster the vascular system in the body. The compounds help keep up the health of the capillary network. These tiny blood channels diffuse throughout the body and are the networks through which blood deposits all the essential nutrients to each cell in the body, capillaries also transport waste products away from cells. The capillary system lies at the root of the blood vascular system and has a multifunctional role. Each capillary needs to be sufficiently permeable to permit vital nutrients and oxygen to seep into the blood within, however, they also need to be strong enough to prevent too the outflow of vital fluids into the surrounding tissues - that occurs during a disorder called edema, resulting in the swelling and bloating of fluid laden tissues. Many neurological disorders can be alleviated as a direct result of the beneficial effects that OPCs have on general capillary health. Oligomeric proanthocyanidins (OPCs) also help prevent the inflammation and swelling of tissues caused by allergic reactions in the body. Ageing skin is revitalized and renewed by OPCs, which also toughen the skin and lower the chances of a bruise. OPCs also help prevent heart disease, by maintaining capillary health.

Supplementing with oligomeric proanthocyanidins can help avert many disorders and boost general health. OPC supplements can help deal with all the disorders given below.

OPCs can bring relief from different allergies and alleviate asthma. One major effect of the oligomeric proanthocyanidins (OPCs) is that they inhibit the action of histamine and prevent it from inducing inflammation, swelling, and pain in the soft tissues of the body. The potent anti-oxidant activity of the OPCs inhibits the catalytic activation of enzymes called oxygenases in the body - this class of enzymes responds to the presence of histamine and release inflammatory chemicals that are typically manifested as an allergic reaction. Even during allergy season, many people who suffer from allergies tend to discover that the use of oligomeric proanthocyanidins (OPCs) helps alleviate all noticeable physical symptoms of an allergic reaction - such is the effectiveness of these compounds. The great benefit of using OPCs is that these compounds will not inhibit the synthesis of antibodies to specific allergens in the body, therefore, they will not be affected or interfere in desensitization treatments such as the most common allergy shots normally administered to allergy prone patients.

Supplemental OPCs may be beneficial in dealing with severe neurological degenerative disorders such as Alzheimer's disease and Parkinson's disease; possibly helping to alleviate some of the more adverse symptoms induced by these conditions in the body. It has been confirmed in studies, that OPCs in the blood prevent the alteration of blood vessels within the brain - a primary cause for the complication of symptoms in Parkinson's disease affected patients. The beneficial effects of certain OPCs such as the pine bark extract derived compound pycnogenol, a patented form of the extract, have been confirmed in cell studies - it has been found that this compound actively inhibits the gradual accumulation of a peptide called beta-amyloid, that clutters in the form of plaques all over the central nervous system in Alzheimer patients. This peptide is believed to be toxic to nerve cells, responsible for the complete breakdown of cell

membranes in the brain and CNS. This characteristic plaque observed in Alzheimer's disease, can be alleviated through a certain extent by the use of the pine bark extract.

OPCs supplements can also be used to treat attention deficit disorder - abbreviated to ADD - as well as chronic fatigue syndrome - CFS - in patients. Attention deficit disorder can be a major learning disability affecting both children and adults, in one report scientists suggest the use of OPCs derived from a mixed extract of grape seeds and pine bark is as effective as the most common agent methylphenidate - generic name Ritalin - employed in treating ADD affected adults and children. This natural compound would be very beneficial as a cure for attention deficit disorder, not to mention being cheaper than the generic drugs currently used to treat this disorder. Though, confirmed to have a beneficial alleviating effect on ADD, there is still a mystery surrounding the actual way in which OPCs affect the brains of Attention Deficit Disorder patients. The biochemical basis behind the cure is not precisely worked out as yet. However, in the course of laboratory studies, results have suggested that OPCs may be helping the brain improve its regulation and use of two excitatory neurotransmitter compounds - the neuro-hormone dopamine and the hormone norepinephrine. This factor suggests oligomeric proanthocyanidins (OPCs) to have an antidepressant effect on the brain of ADD affected people. As well as benefiting patients affected by chronic fatigue syndrome without in any way disrupting the functioning of the nervous system in the rest of the body. If this is the actual mechanism, then, there is a lot of hope for ADD and CFS affected patients.

The powerful antioxidant action of oligomeric proanthocyanidins (OPCs) is well known to the medical community. When an allergic reaction, high blood pressure, or muscular tension affects an ADD patient's circulation system in the brain, it can lead to a reduction in the oxygen supply received by the brain at any one time. This creates certain peculiar problems in the tissues when the normal circulation of blood is restored to the brain, oxidation at this stage can result in the release of a large amount of toxic free radicals potentially flooding the brain tissues - these free radicals can destroy and degrade the linings of cells and disrupt many biochemical pathways. The oligomeric proanthocyanidins (OPCs) prevent cell membrane damage by disrupting the biochemical formation of free radicals. Minerals like zinc, manganese, selenium, and copper, which are essential nutrients for brain tissues are conveyed to the brain by the OPCs, according to the results from recent research - this factor may be vital for patients with ADD. The anti-histamine action of OPCs enables them to alleviate many neurological symptoms. The human brain is overwhelmed by the pain signals triggered off in the body during an allergic reaction, such signals can disrupt the normal functions of coordination and control in the body - often worsening the symptoms of ADD. The neurological burden arising from allergic pain signals are shut off by the OPCs elsewhere in the body, this factor alleviates ADD related symptoms.

Oligomeric proanthocyanidins (OPCs) may also have potential use in cancer prevention and treatment. The antioxidant effect of OPCs has already been confirmed in clinical studies; as genetic damage caused by free radicals is one of the primary causes of many cancers - the antioxidant effect of OPCs prevent free radical formation. OPCs help in the treatment of cancer by inhibiting the initiation and progress of cancer cells. Pycnogenol was found to help increase the resistance to cancer in the body in research conducted by scientists at the University of Arizona. The pycnogenol boosted the production of the immune system's natural killer (NK) cells and this translated into increased resistance to cancer cells by forty to fifty percent.

One out of three forms of cancer arises due the overproduction of nitrous oxide - NO, in the body. This free radical causes chronic inflammation in the tissues and damages DNA, increasing the likelihood of cancer. The OPC called pycnogenol neutralizes NO, before the damaging free radical in the cells. Pycnogenol also suppresses the activity of a gene that is responsible for enzymes that are responsible for metabolic pathways that lead to overproduction of NO. This ensures that NO synthesis is regulated at the cellular level.

OPCs may also be possibly used in the treatment of diabetic retinopathy and macular degeneration. Following test on patients with macular degeneration researchers suggest the employment of oligomeric proanthocyanidins (OPCs) in treating macular degeneration; they believe the OPCs may be the best medication for this eye disorder. The microscopic blood vessels in the eye are the sites where most disorders strike; it has been found that the proanthocyanidins also concentrate along the linings of these microscopic blood vessels. Cellular debris and the products of inflammation easily block these delicate conduits for the blood, leading to problems in the eye. As diabetes increases blood pressure, it affects these microscopic vessels and can damage them, leading to diabetic retinopathy. The retina will not be damaged as long as the correct level of permeability is maintained in the membranes of these vessels. This is where the OPCs come in; they help maintain capillary permeability at levels sufficient for the successful delivery of essential nutrients and the expulsion of waste products from the blood vessels. In addition, OPCs also prevent the increase in permeability that would result in the swelling of the nerve tissue itself. These two effects of OPCs ensure that the eyes are healthy at all times.

Eye tissues can be protected from the damage caused by fluctuating levels of oxygen by the strong antioxidant action of proanthocyanidins. The results from two unpublished studies involving over a hundred test subjects showed that the night

vision and glare recovery of the subjects improved by using two hundred milligrams of grape seed OPCs for a period of five weeks. Similarly, supplemental oligomeric proanthocyanidins (OPCs) have been used in other studies to bring relief from eyestrain common in computer users. OPC supplements have also been used to reduce retinopathy among diabetics. In addition, supplemental OPCs have been used to promote retina functioning in patients affected by nearsightedness.

Oligomeric proanthocyanidins (OPCs) supplements have also been used in alleviating high blood pressure and decreasing the risk of stroke. A weakened capillary system tends to affect people with high blood pressure; this weakening of the capillaries increases the permeability of the blood vessels and permits vital fluids to pass readily out through the walls and into the tissues - often leading to edema. The chances of hemorrhagic stroke and the risk of rupturing blood vessels are increased by capillary breakage. The results from clinical tests conducted by French researchers have shown that the OPCs in grape seeds increase the capillary resistance by upwards of twenty five percent in diabetics and in hypertension patients. In animal tests, German scientists have found that animals treated with OPCs suffered less damage from a stroke compared to other animals that were not given OPC supplements.

OPCs can also be used in treating swollen ankles, cuts and scrapes as well as bruises. They have also been used to treat lymphedema, nosebleed, tendinitis, and varicose veins as well. Edema or swelling in the tissues can result due to a weakening in the walls of small blood vessels and capillaries; this occurs as the fluids including blood being transported in the vessels leaks out into the surrounding tissues and is retained. Supplemental OPCs can help strengthen the walls of the capillaries by blocking the degradation of two major structural proteins which give all blood vessels their strength and elasticity, namely collagen and elastin. The chances of swelling and edema are minimized as a result.

Scientific studies have confirmed the capillary wall strengthening capacity of the OPCs. Fifty people affected by varicose veins were studied in a double-blind Italian study, the patients who received grape seed OPC supplements worked faster and has better stamina than similar patients who were given only the most common prescription medication used for varicose veins. In varicose veins affected patients, supplemental oligomeric proanthocyanidins (OPC) helped bring relief from both the burning and tingling sensations and made the swelling the lower extremities disappear. Patients with varicose veins were free of all symptoms within just thirty days of supplementing with OPCs. The results from one French study was also significant, in this study it was found that giving patient just three hundred milligrams of grape seed OPCs daily for a period of four weeks resulted in reduced pain, lowered the incidence of nighttime leg cramps, alleviated the swelling, and reduced the tingling by a factor of fifty percent in all patients. The principal effect of supplement OPCs is in bringing relief from the pain and swelling of venous insufficiency and varicose veins. They will not treat visible varicose veins completely or make them disappear. However, supplemental OPCs used on a prolonged basis may prevent new varicose veins from developing and may be helpful in decreasing the risks associated with the disorder.

Supplemental OPCs may also be used for the treatment of swelling induced by injury or a surgical procedure, this use of supplemental OPC is supported by evidence from some studies. The results from one more double-blind controlled study found that patients with postoperative breast cancer who were given a daily dose of six hundred mg OPCs for a period of six months reported significant reduction in the swelling, pain, and other sensations known as paresthesias typical of such post-operative patients. The rate of healing and reduction of swelling in sports injuries was also reported to be reduced to a significant extent in patients who were given OPCs during a double-blind controlled study.

Oligomeric proanthocyanidins (OPCs) used as supplements are taken from two principal sources. One is a pine bark extract known as pycnogenol and the other is grape seed extract. These two primary sources of OPCs have all the active chemical ingredients that are necessary for vascular health and the promotion of the circulation in the body. In addition, herbal products manufactured from sources such as cranberries, the leaves of the hazelnut tree, and the bark of the lemon tree standardized for their content of the proanthocyanidins can also be employed as supplements.

The optimal results for dosage of pycnogenol suggested by many nutritionally oriented physicians is a daily dose of one milligram to each pound of body weight - which translates into two milligrams for each kg, this level of dosage seems to bring the best results in the patients. Therefore the dosage of pycnogenol for a one hundred fifty pounds or seventy kg man or woman would approximate to one hundred fifty milligrams per day. This dosage can be double if the remedial progress remains unsatisfactory after thirty days of continual use. As a sudden increases in the dosage can lead to detoxification symptoms, in patients who start to show symptoms including irritability and nasal congestion, a persistent fever, a rash, prolonged diarrhea, as well as splitting headaches, or extreme physical fatigue, the dosage should be increased gradually.

There are some precautionary issues that patients must be aware of, one is that extracts of the grape seed tend to be high in tannin content and these plant compounds can interfere with the absorption of iron from food. Patients who suffer from anemia must not take supplements of these extracts to avoid further loss of iron. A high dosage regimen of the

OPCs can also increase the risk for excessive bleeding if patients are on a course of blood thinning medications, including drugs like aspirin and heparin, as well as pentoxifylline - generic name Trental and warfarin - generic name Coumadin.