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*Healthy choices for people and pets*

## **Your Heart, Blood Vessels and Bio-Algae Concentrates (BAC)**

Bio-Algae Concentrates (BAC) contains many nutritive agents that are known to contribute to prevention and reversal of cardiovascular health problems. I will enumerate just a few here and remind you that nutrients and their benefits for the heart cannot be separated and single out as in reality they all work in harmony in our body. All nutrients that contribute to cellular health are necessary and good for the heart. Let us not forget that the heart is made of cells. When the cells of the heart are doing well, then the heart may have a fighting chance.

BAC is rich in fatty acids such as gamma-linolenic acid (GLA), and also provides alpha-linolenic acid (ALA), linoleic acid (LA), stearidonic acid (SDA), eicosapentaenoic acid (EPA), docosahexaenoic acid (DHA), and arachidonic acid (AA).

It is also rich in important vitamin A, B1 (thiamine), B2 (riboflavin), B3 (nicotinamide), B6 (pyridoxine), B9 (folic acid), B12 (cyanocobalamin), vitamin C, vitamin D, and vitamin E.

Without minerals, there is no health for the heart. BAC is a rich source of minerals that are tied in to cardiovascular health; potassium, calcium, chromium, copper, iron, magnesium, manganese, phosphorus, selenium, sodium, zinc, and many more.

Let us not forget the magic of photosynthetic pigments in BAC including chlorophyll-a, xanthophyll, alpha-carotene, beta-carotene, echinenone, myxoxanthophyll, zeaxanthin, astaxanthin, canthaxanthin, diatoxanthin, lutein, lycopene, 3'-hydroxyechinenone, beta-cryptoxanthin, oscillaxanthin, phycobiliproteins c-phycoerythrin and allophycocyanin, and others.

*"Beta-carotene is just one of the many nutrients in spirulina. This alga also provides iron and is the **most concentrated plant source of gamma-linolenic acid (GLA)**, according to the World Review of Nutrition and Diet (1995, vol. 77)"*

There has been thousands of clinical, in vitro and field trials with algae and the majority of them were done with spirulina. By now I hope you are familiar with the livestock's field studies conducted by Dr. Michael Kiriak. Next you will read about a few specific nutrients present in BAC, that have been demonstrated in independent research to be effective in improving elasticity of heart tissues, increased protection of the vascular system, preventions and reduction of "bad" cholesterol, and preventing atherosclerosis.

### **Lowering blood cholesterol levels and improving lipid profiles**

In a study conducted at the Avinashilingam Institute for Home Science, Deemed University in Coimbatore, India, Dr. Ramamoorthy and his colleagues tested the effects of spirulina on



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patients with a combination of high cholesterol (above 250 mg/dl) and ischemic heart disease. They concluded that spirulina played a key role in lowering blood cholesterol levels and improving lipid profiles.

### ***Cardio-protective agent dissolves deposits***

Spirulina's cell wall is unique too. It is made up of mucopolysaccharides that provide numerous health benefits. Many heart ailments may be caused by a build-up of low-density lipids (bad cholesterol. Gamma Linoleic Acid as found in BAC is shown in many studies to be a good cardio-protective agent; it is known to dissolve these deposits. Of special interest is the ability of these mucopolysaccharides to lower blood fats. This was also brought to light in a 1976 study showing that Spirulina controlled the tendency and ability of cholesterol and other lipoproteins to bond with arterial receptors and attach to artery walls.

### ***Lowers blood pressure***

In other studies, spirulina was able to cause a significant change in vascular tone by increasing the synthesis and release of nitric oxide and by decreasing the synthesis and release of a vasoconstrictive substance from the endothelial cells.

### ***GLA dissolves arterial deposits***

*"GLA, an essential fatty acid, is key to the body's ability to make vital prostaglandins, substances that control body functions and help alleviate health problems such as arthritis and heart disease, according to one preliminary report (Journal of Applied Phycology, 1993, vol. 5)"*

*"GLA supplementation results in blood's becoming more "slippery" since prostaglandins reduce blood platelet adhesion so that cholesterol deposits in arteries have less chance to build up and create arterial blockage, according to Prescription for Nutritional Healing by James Balch, M.D., and Phyllis Balch, C.N.C. (Avery)"*

### ***BAC may prevent heart damage caused by chemotherapy***

In animal research, Khan demonstrated that spirulina helps prevent heart damage caused by chemotherapy using Doxorubicin, without interfering with its anti-tumor activity. Spirulina reduces the severity of strokes and improves recovery of movement after a stroke.

When put together, several ingredients in BAC are a mighty force against cardiovascular health problems. Beta-carotene, GLA, iron, Mucopolysaccharides are credited with improving elasticity of heart tissue; lowering of blood pressure; increasing protection of the vascular system; prevention and reduction of "bad" cholesterol; preventing atherosclerosis; strengthening body tissues; especially connective tissues; making body tissues more elastic and resilient; strong anti-



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inflammatory effects; reinforcing the tissues of the heart; guarding against arterial deterioration; and protecting the vascular system by lowering blood fat.

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## BAC and reduction of bad cholesterol

By now, Americans are well aware of the need to lower cholesterol levels in order to lower the risks of heart attacks and strokes, the number one cause of death. Besides dietary improvements, the search is underway to identify natural foods having a cholesterol reducing effect, such as fish oil or oat bran.

BAC is one of these foods.

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416 Plateau Parkway, Golden, CO 80403-1533  
Phone: 303.271.1649 Toll Free: 866.305.2306 Fax: 303.271.1659  
info@OptimumChoices.com www.OptimumChoices.com



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In a study conducted by the Department of Internal Medicine of Tokai University in Japan, it was concluded that spirulina (as contained in BAC) did lower serum cholesterol and was likely to have a favorable effect on alleviating heart disease since the arteriosclerosis index improved.

Thirty male employees with high cholesterol, mild hypertension, and hyperlipidemia showed lower serum cholesterol, triglyceride and LDL (undesirable fat) levels after eating spirulina for eight weeks. These men did not change their diet, except adding spirulina.

Group A consumed 4.2 grams daily for eight weeks. Total serum cholesterol dropped a significant 4.5% within four weeks from 244 to 233. Group B consumed spirulina for four weeks, then stopped. Serum cholesterol decreased but then returned to the initial level. Researchers found triglyceride levels decreased slightly and LDL cholesterol decreased a significant 6.1% within four weeks. The reduction of serum cholesterol was even greater in those men with the highest cholesterol levels. The study did not speculate on how it lowered cholesterol. No adverse effects were noted. 1

In another study with rats, researchers attempted to find the compound in spirulina that lowered serum cholesterol. They discovered that the benefit may be amongst other, through its effect on metabolism of lipoproteins. The oil soluble portion was found to suppress cholesterol levels in the serum and liver of rats. 5

Researchers in West Germany had previously discovered cholesterol reduction during a weight loss study with spirulina 2, while the Japanese research showed lower cholesterol without weight loss, suggesting that cholesterol reduction was not related to weight loss. Spirulina had been chosen in this study because it had previously been shown to lower serum cholesterol in rats. 3,4

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## **BAC - Rich source of essential fatty acids (EFA)**

Essential fatty acids (EFA) "the good fats that heal" are the fats you've been increasingly hearing about in recent years. Your body can not live without them. They're needed for a healthy heart, a healthy nervous system, a healthy immune system and especially a healthy brain (the human



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brain is around 80% fat).

The essential fatty acids sometimes called vitamin F, include linoleic, linolenic, arachidonic acid and many more. Some are used by the body to manufacture Prostaglandins, the hormonal regulators of blood pressure and capillary resilience.

The human body uses fatty acids from food for building tissues and for specialized functions such as the production of prostaglandins, localized tissue hormones. One major group of fatty acids is called essential fatty acids, which are polyunsaturated, and include two major groups, omega-3 and omega-6 fatty acids. They are called "essential" because the body cannot make them but must get them from food.

The terms omega-3 and omega-6 actually designate two families of fatty acids; the former has the first double bond on the third carbon from the end of the fatty acid chain and the latter has the first double bond on the sixth carbon from the end of the fatty acid chain. The first fatty acid in the omega-6 family is called linoleic acid. It contains 18 carbons and has 2 double bonds.

The essential fatty acids are involved in respiration in all the cells, and are especially important to oxygen transport. They affect the health of the hair, skin and nails, and help break up cholesterol in the blood stream. They are not dangerous fat but are absolutely vital to health.

If you've read anything about low-carb dieting or the "Mediterranean Diet," you know that the consumption of healthy oils which contain these fatty acids produces astounding health benefits in the human body. Heart disease and various cardiovascular disorders respond quickly and positively. Brain function is improved, diabetes is brought under control, blood sugar is regulated, and cancer risk soon plummets.

Most of us think of these oils coming from fish or seeds. That is why I was pleasantly surprised to learn that Bio-Algae Concentrates contain Omega 3, 6, 9, GLA and several more including some yet undocumented or undiscovered. It is especially high in GLA, which is a critical nutrient that is universally lacking in the American diet.

(<http://www.themagicisbac.com/page9-00.html>)

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**Do not experience heart palpitations anymore**

*I am thrilled to share to you this good news and I credit this to BAC. Just like want you mentioned I experience tangible health benefits. The most noticeable by me is I do not experience heart palpitations anymore despite being diagnosed of having Mitral Valve Prolapse. My breathing is now calm and do NOT experience shortness of breath anymore. In fact, I look forward to having my next 2D Echo Doppler test. I am glad I did not follow the advice of the cardiologist in putting me on beta blockers. I did take for two weeks but I feel weird physically. So I stopped. After several months of searching the net for answers how to be healthy, then I found BAC.*



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*One more thing that I am thrilled of... last May 17, 2006, I had a skin carotenoid test using Pharmanex biophotonic scanner. My score was 24,000. Then when your shipment arrived on May 19, 2006. I started taking an average of 4 to 5 capsules per day. Guess what is my score now, July 5, 2006? In just 45 days, my score leaped to 29,000!!! I am happy with the results and hope to reach a score just like yours. I think your score was 60,000+++.*

*Thank you again for everything.*

*Sincerely, "*

*- Hennery Relucio, Manila Phlippines, July 2006*

The above testimonies were taken from the manufacturer's website at: <http://www.bio-algae-concentrates.com/e-testimonials.html>

*These results are individual case studies. We cannot guarantee your results will be the same. Since each individual body responds differently to the super nutrition in Bio-algae concentrates/Bio-algae concentrates your results will be different. These statements have not been evaluated by the FDA. This information is not intended to diagnose, treat or cure any disease.*