



HealthForce Nutritionals Educational Flyer Series

“Hype is nothing. Substance is Everything.”



The Algae

Algae and the History of the World

Three and one-half billion years ago, the Earth's atmosphere was nearly devoid of oxygen and, instead, rich in the greenhouse gases that have become so infamous today, such as methane, carbon dioxide, and sulfurous gases. Then, something magical happened. Simple single-celled organisms known as cyanobacteria (blue-green algae) appeared in the primordial sea that had the ability to photosynthesize. Through this miraculous process, these organisms used the sunlight, along with minerals from the ocean and carbon dioxide from the atmosphere, to produce all the complex molecules of life: proteins, carbohydrates (starches and sugars), lipids (fats), nucleic acids (DNA and RNA), vitamins, phytonutrients, chlorophyll, and many other pigments.

This miraculous process continues to this day. All our modern green plants have since duplicated algae's historic feat of photosynthesis, but algae are still by far the most efficient photosynthesizers on the planet, using light approximately three times more efficiently than higher plants. Fortunately for us humans, oxygen is released as a waste product in the process of photosynthesis. Animals need an oxygen-rich atmosphere, as well as all the complex molecules that algae produce, in order to exist. Algae are found in every drop of water and every inch of fertile soil, transforming the minerals, gases, and sunlight of our environment into the foods which fuel all other species of life. Algae stands at the base of the food chain and is, in a very real sense, the ancient biological foundation upon which most of life on Earth now depends.

Edible Micro-Algae are Essential for Health

There are three types of single-celled micro-algae (cellular size typically ranging from two to eight microns) that are commonly consumed by humans as food sources (e.g., Chlorella, Spirulina and Klamath Lake Algae (“KLA”). The primitive nature of the cellular organization in these micro-algae contains minimal indigestible structures, allowing practically the entire organism to be nutritionally useful. As a result, these micro-algae are the most nutrient rich foods on the planet.

- 50 to 70% highly digestible protein containing all essential amino acids — far more assimilable and produces far less uric acid than any animal protein.
- A source of the important omega-3 and omega-6 fatty acids, including GLA, EPA, and DHA. These fats are structural components of all cell membranes and are crucial for proper brain function, immune, and cardiovascular health. Unlike seafood and fish oils, the oils in these micro-algae are cholesterol and toxin free.
- The richest known sources of chlorophyll, which serves to oxygenate our blood. This increases energy production in all our cells, and boosts our immune system with oxygen's anti-bacterial, anti-fungal, and anti-viral properties*.
- Rich in nucleic acids (RNA and DNA), providing the building blocks for repair of our genetic material. This stimulates regeneration in all our cells, making these algae excellent anti-aging and anti-radiation foods.
- Rich in all the B vitamins.
- Contains all the macrominerals such as calcium, zinc, magnesium, potassium, and iron) and many trace minerals.
- Exceptionally rich in beta-carotene, providing both the cis and trans forms of this important nutrient. Also rich in many lesser known carotenoids such as xanthophyll and zeaxanthin, as well as many other antioxidant compounds.
- Contains thousands of healing phytonutrients, both known and unknown.

Since algae are the foundational foods at the base of the food chain, producing the building blocks for all the complex molecules of life, we can be assured that these micro-algae contain all the known and **unknown** nutrients required by our bodies for health, in concentrations unmatched elsewhere in nature. These foods are literally the antidote for us overfed but undernourished modern humans. It is important to note, however, that these micro-algae are foods, not supplements. As such, they must be consumed in appropriate quantities to be effective. You can't expect to consume just a few tablets and feel better. Recommended servings are more in the 5 to 10 grams per day range.

The HealthForce Edge

- 100% TruGanically™ Grown: **TruGanic™** is a purist, hard-core quality standard for sourcing and production significantly beyond organic. TruGanic™ products must pass actual tests to verify they are 100% free of pesticides, insecticides, herbicides, irradiation, and GMO free. TruGanic™ also includes high level standards for production: electromagnetic radiation mitigation, measures to improve air quality, and use of non-toxic cleaning agents.
- Significant energetic, magnetic, and homeopathic enhancements increase overall life force present.
- EcoFresh Nutrient Lock™ packaging (amber glass bottles, oxygen absorbers, airtight metal lids with rubberized seal) ensures potency. 100% post consumer recycled paper with soy inks produced with wind energy.

*These statements have not been evaluated by the F.D.A. This product is not intended to diagnose, treat, cure or prevent any disease.

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Chlorella Manna™

Chlorella Manna™ History and Facts

Chlorella is a single-celled, fresh water green algae whose eukaryotic cell ancestors first emerged on the planet around two billion years ago. Although it lacks phycocyanin (the compound that produces the characteristic blue pigment in blue-green algae), chlorella is one of the richest sources of chlorophyll known, which is responsible for its deep green color. Unlike cyanobacteria (blue-green algae like spirulina and KLA) which lacks a nucleus and has thick, gelatinous, easily digestible cell walls, chlorella has a tough cellulose cell wall (20%), and a well-defined nucleus rich in nutrients (80%). Since humans do not produce the enzymes required to break down cellulose, the cell walls of Chlorella Manna™ are “cracked” to make the nutrients inside the cells bioavailable. This process happens under very specific conditions which eliminate light and heat in order to preserve nutrient integrity.

Although chlorella grows naturally in fresh water, chlorella destined for human consumption is typically cultivated outdoors in mineral-rich, fresh water ponds under direct sunlight. Chlorella Manna™ is grown on pristine Hainan Island, off the southern coast of China. Hainan Island is designated a “Special Economic Zone” to promote sustainable industry and tourism. All industries on Hainan Island are required to be pollution free, with no damage to the environment. This fact, along with HealthForce TruGanic™ testing, ensures that Chlorella Manna™ is a pollution-free product.

Detoxification Benefits of Chlorella

Like the other algae, chlorella is one of the richest sources of nutrients on the planet, but chlorella truly shines in its ability to promote detoxification. The high chlorophyll content of chlorella stimulates oxygenation of our blood and consequent energy production in all our cells, allowing cells to release toxins more effectively. In addition, chlorella’s fibrous cell wall binds with heavy metals, radioactive isotopes, pesticides such as PCBs and DDT, and other toxins to effectively carry them out of the body. Chlorella is especially good at removing heavy metals from the body, having over 20 known mechanisms by which it binds to these metals.

Chlorella Growth Factor

Perhaps the most important nutritional aspect of chlorella stems from the presence of a phytonutrient known as Chlorella Growth Factor (“CGF”). CGF is found in the nucleus of chlorella and contains amino acids, polysaccharides, beta glucans, vitamins, and an abundance of nucleic acids (RNA and DNA). This water-soluble compound is only found in chlorella and is responsible for the remarkable ability of this plant to quadruple itself every 20 to 24 hours under favorable conditions. Experiments with microorganisms, and young animals and children, have shown that CGF consumption promotes faster than normal growth without adverse side effects. In adults, CGF appears to enhance the RNA/DNA functions responsible for production of proteins, enzymes, and energy at the cellular level, thereby stimulating a number of beneficial activities in the body:

- Repair and regeneration of all damaged and/or diseased cells, including nerve tissue.
- Stimulates cellular detoxification.
- Builds and modulates the immune system.
- Increases growth of beneficial intestinal bacteria by 400%.
- Combats damaging effects of free radicals and exposure to radioactive isotopes.
- Mitigates some side effects of chemotherapy and/or radiation treatment for cancer.
- Dramatically boosts oxygen utilization efficiency in cells, and thus improves exercise performance and stamina.

How to Consume

Powder: Start with one teaspoon per day and increase gradually over two weeks to suggested use of one (or more) tablespoons per day, either all at once or divided. Chlorella is a food and can be taken in any quantity desired. Add to smoothies, salad dressings, juice/water, seed/nut milks, or any other food.

Tablets: Start with 8 tablets per day and increase gradually over two weeks to suggested use of 25 tablets (or more) per day, either all at once or divided. Consume with any liquid such as water or juice to wash down tablets. Tablets may be chewed as well — try adding to olives, mulberries, or any dried fruit for a crunchy treat.

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| Nutrition Facts | | | |
|---|--------------|----------------|-----|
| Serving Size: 1 level tablespoon or 25 tablets (5g) | | | |
| Amount per Serving | | Fat Cal: 4 | |
| Calories: 21 | | | |
| | Amt./serving | % Daily Value* | |
| Total Fat | 0.5g | 0.7% | |
| Saturated Fat | 0.0g | 0.0% | |
| Trans Fat | 0.0mg | | |
| Cholesterol | 0.0mg | 0.0% | |
| Sodium | 0.0mg | 0.0% | |
| Total Carbohydrate | 1.2g | 0.4% | |
| Dietary Fiber | 0.0 | 0.0% | |
| Sugars | 0.0g | | |
| Protein | 2.9g | | |
| Vitamin A | 13% | B6 | 4% |
| Vitamin C | 1% | Riboflavin | 13% |
| Calcium | 1% | Niacin | 6% |
| Iron | 36% | Zinc | 24% |
| Magnesium | 4% | | |

* % Daily Values based on 2,000 calorie diet.

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Spirulina Manna™ and Spirulina Azteca™

Spirulina History and Facts

Spirulina is a single-celled blue-green cyanobacteria (AKA blue-green algae) that grows wild in fresh water, warm, alkaline, volcanic lakes. Blue-green algae first appeared on the planet around 3-½ billion years ago, making spirulina one of the oldest known living organisms. In modern times, there are only three major lakes in the world known to produce spirulina naturally — Lake Chenghai in China, Lake Chad in Africa, and Lake Texcoco in Mexico. Indigenous peoples around Lake Chad and Lake Texcoco regularly consumed spirulina as one of their staple foods. Unfortunately, Lake Texcoco, being near Mexico City, is now heavily polluted. Although the exceptionally healthy and long-lived natives around Lake Chad still consume spirulina to this day, this lake is slowly drying up because of global climate change.

Natives were first observed harvesting spirulina from Lake Chad in 1940, but it wasn't until the 70s that spirulina began to be cultivated for human consumption. Two strains of spirulina are currently being grown in algae farms around the world: *Arthrospira platensis* (indigenous to Lake Chenghai and Lake Chad) and *Arthrospira maxima* (indigenous to Lake Texcoco).

Spirulina Manna™ and Spirulina Azteca™

HealthForce offers both strains of spirulina currently being cultivated — Spirulina Manna™ (Lake Chad strain) and Spirulina Azteca™ (Lake Texcoco strain). Both strains have similar nutritional profiles, with Spirulina Manna™ being higher in some nutrients, while Spirulina Azteca™ is higher in others. They are 2 different species of awesome algae (like romaine lettuce and red leaf lettuce). Spirulina Azteca™ has a stronger flavor while Spirulina Manna™ tastes milder and is more suitable for those palates new to superfoods.

Spirulina Benefits

Spirulina is a hard-core detoxifying green superfood*. It can protect from radiation just as well as Chlorella.* Spirulina is the least expensive of these algae, as it requires the least amount of effort to harvest and process into a quality end product. This makes spirulina your best choice if you can only afford one algae, as you'll get the most nutrition per dollar with spirulina.

Next to human breast milk, spirulina is by far the richest food source of the important omega-6 fatty acid known as gamma linolenic acid ("GLA"). GLA is a crucial part of the structural fats that comprise muscle tissue, bone marrow, cell membranes, and the brain and nervous system. GLA is involved in both brain growth and function, including learning and memory processes. If you weren't breast feed, spirulina is the best way to correct any deficiency in this crucial nutrient that you never received as a growing child. GLA is also known to reduce symptoms of inflammation, PMS, menopause, eczema, and may help to reduce risk of heart disease and cancer*.

Being blue-green algae, spirulina and KLA are both high in the remarkable blue pigment known as phycocyanin. Phycocyanin has potent anti-inflammatory and antioxidant properties, and is one of a small handful of substances known to both protect and regenerate kidney tissue*. Phycocyanin also stimulates the stem cells found in bone marrow that are the origin of all the white blood cells (e.g., B cells, T cells, macrophages, natural killer cells) that make up both the innate and adaptive immune systems, and red blood cells that carry oxygen to all the body's cells*.

Spirulina is simply phenomenal support for the immune system*. Not only does the phycocyanin increase the number of immune cells present, studies show that consumption of even small amounts of Spirulina dramatically enhances immune cell functionality*. In addition, several studies show that spirulina consumption can significantly inhibit viral replication*.

How to Consume

Powder: Start with one teaspoon per day and increase gradually over two weeks to suggested use of one (or more) tablespoons per day, either all at once or divided. Spirulina is a food and can be taken in any quantity desired. Add to smoothies, salad dressings, juice/water, seed/nut milks, or any other food.

Tablets: Start with 8 tablets per day and increase gradually over two weeks to suggested usage of 33 tablets (or more) per day, either all at once or divided. Consume with any liquid (e.g. water or juice).

| Spirulina Manna Nutrition Facts | | | |
|---|------|--------------|----------------|
| Serving Size: 1 level T. or 33 tablets (6.5g) | | | |
| Amount per Serving | | Fat Cal: 4 | |
| Calories: 20 | | | |
| | | Amt./serving | % Daily Value* |
| Total Fat | | 0.5g | 0.7% |
| Saturated Fat | | 0.0g | 0.0% |
| Trans Fat | | 0.0mg | |
| Cholesterol | | 0.0mg | 0.0% |
| Sodium | | 32.2mg | 1.3% |
| Total Carbohydrate | | 1.4g | 0.5% |
| Dietary Fiber | | 0.0g | 0.0% |
| Sugars | | 0.0g | |
| Protein | | 4.8g | |
| Vitamin A | 433% | Calcium | 3% |
| Vitamin C | 0% | Iron | 20% |

* % Daily Values based on 2,000 calorie diet.

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Elixir Of The Lake™

Klamath Lake Algae (KLA) History and Facts

Like Spirulina, KLA is a single-celled blue-green cyanobacteria (scientific name: Aphanizomenon flos-aquae) whose ancestors first appeared on the planet some 3-½ billion years ago. Spirulina and Chlorella are carefully fed with incredible nutrient density and cultivated in man-made ponds. KLA grows wild in the extraordinarily mineral-rich ecosystem of Upper Klamath Lake in southern Oregon. Seven thousand years ago, the top 5,000 feet of what is now Crater Lake blew off in a volcanic eruption 300 times the size of Mount St. Helens. This eruption deposited an enormous volume of minerals in the area around Upper Klamath Lake, resulting in a nutrient-rich sediment at the bottom of this alkaline lake that reaches up to 35 feet deep. This ensures that KLA is exceptionally rich in nutrients and contains every trace mineral required by the human body.

Interestingly, KLA has so far defied all attempts at cultivation in man-made ponds. Upper Klamath Lake, located just north of snow-clad Mount Shasta, seems to be the only environment that provides the unique physical and energetic properties required by this extraordinary superfood.

Elixir Of The Lake™ Processing: Our KLA is harvested in the deepest and cleanest section of the lake directly into a refrigerated tank onboard a state-of-the-art harvesting boat. The algae is then transported to shore where it is powdered using a BioEvaporative™ drying process that preserves KLA's natural essence without any degradation in color, flavor, enzymes, or nutrition. During this delicate process, the algae exceeds body temperature (98.6 F.) for less than two minutes, and never goes above 105 F. The maximum temperature of 105 F. is reached only when the algae is nearly dry, as the sensitive nutrients in KLA are most vulnerable to degradation when the algae is wet. Also, an inert gas is used to shield the algae from oxygen degradation during drying. With BioEvaporative™ drying, there is not need to freeze first and then dry as with freeze drying.

Elixir Of The Lake™ Safety: Microcystis is another cyanobacteria that can be present in Upper Klamath Lake along with Aphanizomenon flos-aquae. This algae produces harmful toxins and is therefore unwise to consume. We harvest our KLA in the fall, after microcystis has stopped blooming. Each batch is sent to a certified, independent laboratory and thoroughly tested to ensure that the microcystis content is well below the stringent requirement of under one part per million set by the Oregon Department of Agriculture. Finally, all batches also undergo rigorous TruGanic™ testing to ensure a toxin-free end product.

Elixir Of The Lake™ Benefits

Like the other algae, KLA is among the most nutrient-rich foods on the planet, but KLA truly shines in its ability to promote brain health. KLA is unique among all food grade algae in that it metabolizes nitrogen directly from the air to produce abundant quantities of neuropeptide precursors. These small, protein-like molecules are used by neurons in the brain for communication and thus contribute to the brain's ability to process information and achieve a sense of well-being. Anecdotal reports consistently attribute KLA consumption to increases in mental alertness, short and long term memory retention, problem solving abilities, creativity, dream recall, and a greater sense of well-being and centeredness*.

According to Gabriel Cousins, M.D., KLA also seems to have a unique ability to enhance the functioning of the pituitary, pineal, and hypothalamus glands. These master glands in the brain are associated with the higher spiritual centers/chakras, and serve to regulate all other endocrine glands. KLA may thus be a powerful ally when working to correct any endocrine system imbalances*.

How to Consume: KLA is extremely cleansing, so start slowly to avoid cleansing reactions. Begin with 1/4 teaspoon (or less) and increase slowly to 1 (or more) tablespoon per day, either all at once or divided. KLA is a food and can be taken in any quantity desired. Add to smoothies, salad dressings, juice/water, seed/nut milks, or any other food.

| Nutrition Facts | | | |
|--|--------------|----------------|-------|
| Serving Size: 1 level tablespoon (6 g) | | | |
| Amount per Serving | | Fat Cal: 1 | |
| Calories: 23 | | | |
| | Amt./serving | % Daily Value* | |
| Total Fat | 0.12g | | 0.17% |
| Saturated Fat | 0.0g | | 0.0% |
| Trans Fat | 0.0mg | | |
| Cholesterol | 0.0mg | | 0.0% |
| Sodium | 16.2mg | | 0.6% |
| Total Carbohydrate | 1.26g | | 0.5% |
| Dietary Fiber | 0.0g | | 0.0% |
| Sugars | 0.0g | | |
| Protein | 4.2g | | |
| Vitamin A | 271% | Calcium | 4% |
| Vitamin C | 60% | Iron | 14% |

* % Daily Values based on 2,000 calorie diet.

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