



IMAGE AWARENESS WELLNESS INSTITUTE

How to Supplement

1271 HIGH STREET, AUBURN, CA 95603 • PHONE (530) 823-7092 • ORDER LINE (800) 359-6091
HOURS: TUES. – FRI. 10 A.M. – 4 P.M. • E-MAIL: MAIL@IMAGEAWARENESS.COM WEB: WWW.IMAGEAWARENESS.COM

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THE PROBLEM

An untold number of women who have been placed on inexpensive iron supplements which resulted in digestive distress and black stool are testimony to the importance of quality supplementation. Iron in a ferrous sulfate form irritates the digestive tract and oxidizes to a black color. (This problem is usually resolved by using a chelated iron--read on.)

The problem with iron is obvious, but many problems are not so obvious. For example, the widely touted colloidal mineral products were often contaminated with significant quantities of aluminum. My analysis of one product found aluminum the 6th most abundant element (272 mg/liter). Aluminum is a potentially neurotoxic substance associated with increased risk of dementia. It definitely is not something one should be ingesting as a food supplement no matter how effective and attractive the advertising for the product. Regardless, millions used these products.¹

Similarly, millions have been led to believe that blue-green algae is a desirable and healthy supplement. Aquatic biologist and toxicologist Wayne Carmichael writes, "...the toxicity of many chemicals produced by cyanobacteria is undeniable. For this reason, I am becoming increasingly worried by a modern fad: the

eating of cyanobacteria from the genus *Spirulina* as a health food."

Carmichael points out that some cyanobacteria which can contaminate *Spirulina* harvests produce potent nerve toxins. Even more common than the four neurotoxins found in these water plants are potent liver toxins which not only damage the liver, but may prove to be cancer causing agents.²

1. Schauss, Alexander, Ph.D., Colloidal minerals: Clinical implications of clay suspension products sold as dietary supplements, *American Journal of Natural Medicine*, Vol. 4, No. 1, January/February 1997, 5-10.

2. Carmichael, Wayne, The Toxins of Cyanobacteria, *Scientific American*, January 1994, 78-84.

HOW TO SUPPLEMENT

I am frequently asked how one should supplement. The following are some of the criteria I use in evaluating the supplements we have chosen to work with. The discussion is broken into two parts. The first deals with the manufacturer. The second deals with the products.

ABOUT THE COMPANY

NOT A SHOOTING STAR

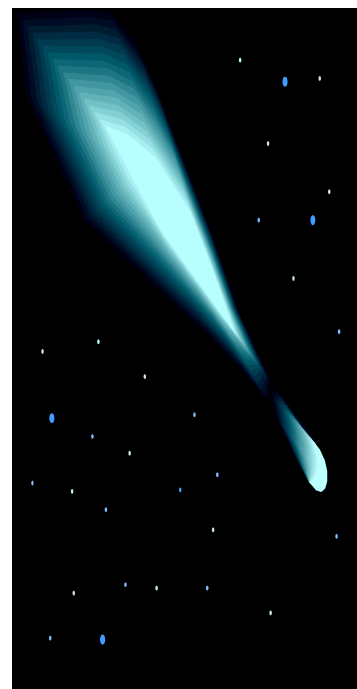
I look at how long a company has been around. Highly unethical companies usually act like shooting stars. They appear suddenly and make wild and exaggerated claims for their products. They then tend to run afoul of the legal authorities or their products are shown to be worth-

less or dangerous by credible scientific authorities. They then burn out.

PHARMACEUTICAL LICENSE

I want a company that operates with a pharmaceutical license. This is not required of natural food products (the supplements I prefer) but it provides an extra measure of safety and quality control.

Companies that operate with a pharmaceutical license are not afraid to have the FDA come in and inspect their facilities for cleanliness and to insure that what is placed on the label is actually in the product. These are unannounced inspections. FDA inspection also as-



sures that a manufacturer follows Good Laboratory Practices and Good Manufacturing Practices.

A MANUFACTURER

I want a company that manufactures its own products. Many private labelled products are designed more for profit than quality.

A number of years ago I worked as an intermediary with a company interested in having their products private labelled. They told me they wanted the best quality that could be made. The manufacturer told me that their best product was reserved for their direct distribution channel, but they would be able to manufacture an excellent product. When the company saw the price of a good product, they decided they wanted a less expensive product to increase their profit margin.

BACKED BY SCIENCE

Products should be based on legitimate scientific research rather than the desire to have something to sell. There is a difference between producing a product and looking for a scientific reference to support the product and basing the development of a product on the best scientific research available.

INDEPENDENT VERIFICATION

I look at a company's associations. Is research on their products published in peer reviewed journals like the *American Journal of Clinical Nutrition*, *Free Radical Biology and Medicine*, the *FASEB Journal* or similar publications? Do they have a working relationship with organizations like the United States Department of Agriculture, the World Health Organization, and Stanford University.

A SCIENTIFIC ADVISORY BOARD

I look for products that have competent scientific personnel working on the development of products rather than lending their

name for the promotion of the products. These companies will have research facilities at their disposal and will often have unique and different types of products. Some of these products are patented.

TOXICOLOGICAL TESTING

Quarantine and examination of all raw materials for purity and potency prior to manufacture of products is important. Testing of manufactured products for disintegration and dissolution time, stability, purity, potency, bioavailability, odor, and taste is also essential.

Many companies are not even aware of the fact that there are toxicological issues with supplements. David Quig, Vice President of Scientific Support for Doctor's Data, a testing laboratory, shared an amazing story at the 2006 meeting of the International and American Associations of Clinical Nutritionists in San Diego.

The lab tested a man's urine and found 9,100 ug/Pb gm (micrograms per gram of lead). There was some difficulty identifying the source of the lead poisoning until the man's herbal products were tested. They proved to contain 56,185 ug/gm of lead.¹

Contamination of calcium products with lead has been a long standing problem. An excerpt from a news report follows: "The authors tested 23 products in March; their results appear in Wednesday's *Journal of the American Medical Association*."

"The authors found no detectable level of lead in 15 of the supplements. The remainder had from 1.74 micrograms to 3.43 micrograms per 1,500 milligrams of calcium. The dose generally recommended to help prevent osteoporosis is about 1,200 milligrams to 1,500 milligrams daily." (I think this level is too high)

"Experts have suggested that the body's total daily exposure to lead should not exceed 6 micrograms, said Dr. Edward Ross, a University of

Florida nephrologist who conducted the study with toxicology experts at the school's Gainesville campus."²

There is no reason to use supplements derived from raw materials which could potentially contribute to toxic residues.

1. Quig, D.W., and Crinnon, W., "Clearance of lead from a patient with lead poisoning from Ayurvedic herbs," 2006, IAACN Conference, San Diego.

2. "Lead still in calcium supplements," CNN.com, Sept. 20, 2000.

THE SUPPLEMENTS

BASED IN NATURE

I believe supplementation should be derived from foods which have a long history of safe usage as much as possible. The reason for this is the desirability to find sources of nutrients we can use day in and day out for a lifetime without problems. There are few studies on the effects of feeding animals for a lifetime on synthetic formulations of nutrients.

There are also potential problems with derivation of nutrients from sources which are not a normal part of the human food chain. For example, krill oil is now being promoted as a source of omega-3 oils. My research indicated that the large amounts of the carotenoid astaxanthin in krill oil have a totally different structure than the astaxanthin in salmon. We know the salmon is safe as it has been a part of man's diet for thousands of years.

USE A GOOD MULTIPLE

In last month's newsletter I shared the research of Dr. Arthur Furst who found that a good multiple could prevent animals from developing cancer, while all would develop cancer without the supplementation. I did not mention that laboratory rats are generally much better nourished than people are as they are able to reproduce without difficulty, a measure of adequacy of nutrition. Remember this the next time a researcher

states that an artificial chemical has been shown to be completely safe in testing on laboratory animals. This is one of the reasons drugs are often approved, then pulled off the market when they are demonstrated to create problems in people.

One of the objectives of supplementation should be to obtain as wide a range of nutrients as possible from natural sources. Lack of even one important nutrient can have serious consequences. Celebrated researchers Harte and Chow studied over 200 research papers and concluded that "the shortage of a single essential vitamin, mineral element, amino acid, or fatty acid will create a shock wave that spreads to affect the utilization and/or function of every other essential nutrient."

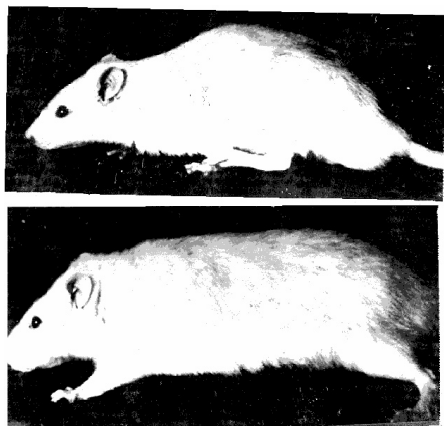
Cheraskin, E., et al, *Psychodietetics*, New York: Bantam, 1976, 22.

NUTRIENTS TO LOOK FOR

PHOSPHOLIPIDS

My favorite multiples contain a rich source of phospholipids and phytosterols. These are the primary building blocks of cell membranes. They have profound influence upon the overall functioning of the endocrine system and nutrient utilization.

Studies on animals have shown that a phospholipid and phytosterol source derived from whole wheat, rice, and soybeans improves nutrient utilization in animals by 50%. Such a study was conducted on the



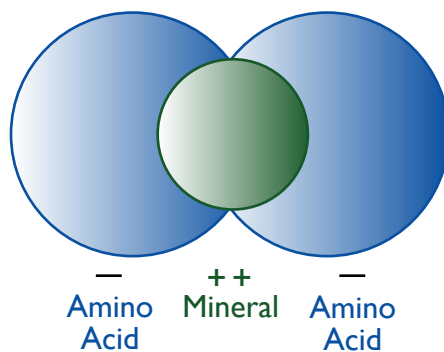
two rats pictured. The animal receiving the high quality phospholipid and phytosterol sources from whole grains and legumes evidenced not only superior nutrient utilization, but also better overall health.

CONTINUOUS RELEASE VITAMIN C

Dr. Steve Hickey and Dr. Hilary Roberts have recently published a book entitled *Ascorbate: The Science of Vitamin C*. They point out that vitamin C "has a half-life in the blood of about 30 minutes." This results in the fact that a quick release dose only provides protection for a maximum of 4-6 hours. Slow release doses provide much better protection.

Most of the work conducted on vitamin C underestimates the benefits of this nutrient because experimental animals and people have typically been dosed with a quick release form of vitamin C once a day.

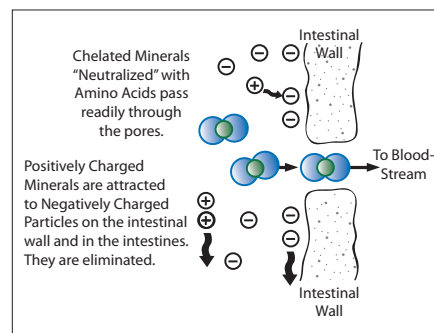
Hickey, Steve, Ph.D., and Roberts, Hilary, Ph.D., *The Science of Vitamin C*, Ebook: Lulu.com, 2004, p. 126-129.



CHELATED MINERALS

The word chelate means "claw." It refers to a process of wrapping minerals with amino acids to neutralize the positive charges minerals carry. Studies have shown that this improves absorption of minerals up to sixfold.

A positively charged mineral tends to attach to the lining of the intestine which has a negative charge (opposites attract). The result is poor absorption. A properly chelated mineral has no charge (this requires

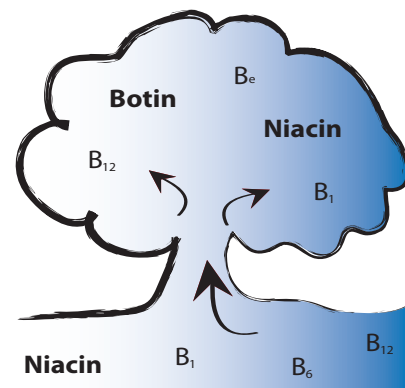


wrapping the mineral with however many amino acids are required to neutralize the charge--usually two).

Chelated minerals tend to be safer and more effective than minerals which are not in this form.

BIOLOGICAL MATRIX

I like to see rice, yeast, and kelp as sources of nutrients. This means that the nutrients have entered into a biological matrix. They will be accompanied with amino acids, vitamins, minerals, enzymes and co-enzymes which will greatly improve their effectiveness. Over the years I have seen a good number of people obtain better results from a food based multiple than a whole box of synthetic supplements.



USE A HIGH POTENCY FISH OIL

Numerous studies have shown that Americans are seriously deficient in omega-3 oils. I prefer a fish oil supplement made by molecular differentiation (not distillation). It is the only fish oil product of which I am aware which contains certifiable amounts of all 8 of the master



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molecules of the omega-3 family.

Molecular differentiation enables the manufacturer to select specific molecules from fish oil, while leaving behind others which are associated with rancidity, fishy taste, and burping. This product is a vast improvement over earlier fish oil formulations. It contains 50% more omega-3 oils than earlier supplements in a capsule half the size-- a heck of a lot easier for swallowing!

A CAROTENOID COMPLEX

Phospholipids and omega-3 oils are key structural nutrients, being the major building blocks of cell walls or cell membranes. These fats, however, are at risk of oxidizing if antioxidant intake is inadequate.

The most powerful of all fat soluble antioxidants are the carotenoids, followed by vitamin E. The most powerful and efficient free radical oxygen quenchers are the following in order of their potency:

Lycopene
Gamma-carotene
Astaxanthin
Canthaxanthin
Alpha-carotene
Beta-carotene
Bixin

Zeaxanthin
Lutein^{1,2,3}

All of these are carotenoids. Free radical oxygen is arguably the most damaging free radical produced in the human body.

A number of years ago a well-known aging researcher, Richard Cutler, reported that two nutrients are directly associated with lifespan. The more of these nutrients in the blood, the longer animals or humans would tend to live. The two nutrients were carotenoids and vitamin E.⁴

My favorite carotenoid product is made with a patented Nutri-Max process. It is encapsulated in a nitrogen environment to prevent it from reacting with oxygen. Studies by the United States Department of Agriculture demonstrated that the product increase immune function 37% in 20 days, improved natural killer cell activity 20%, increased antioxidants in cholesterol 5-fold, and reduced oxidation at the cellular level by 44%. Powerful medicine!

1. Di Mascio, P., Devasagayam, T. P. A., Kaiser, S., and Sies, H. (1990) Carotenoids, tocopherols, and thiols and biological singlet molecular oxygen quenchers. *Biochem. Soc. Trans.*, 18:1054-1056.

2. Di Mascio, P., Kaiser, S., and Sies, H. (1989) Lycopene as the most efficient biological carotenoid singlet oxygen quencher. *Arch. Biochem. Biophys.*,

274:532-538.

3. Di Mascio, P., M. E. Murphy, and H. Sies. (1991) Antioxidant defense systems: the role of carotenoids, tocopherols, and thiols. *Am. J. Clin. Nutr.*, 53:1945-2005.

4. Cutler, Richard G., Antioxidants and aging, *Am J Clin Nutr*, 1991;53:375S.

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