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Declining Nutritional Value In Fruits And Vegetables May Be a Concern

For years the debate has raged on about the benefits and drawbacks of modern farming techniques. Industrial agriculture or “hyper-farming” has resulted in giant strides in crop yield, but many claim nutrient content, and thus their total nutritional value to humans has been suffering.

The average yield in terms of bushels per acre for major crops in the US has sky rocketed since the 1950’s. Corn is up 342%! Wheat is up 290% while both soy beans and alfalfa are up about 170%. Similar sorts of yield gains have occurred in Europe, Australia, Japan and other regions of the world as well.

Data presented by researchers from the Department of Soil Sciences at the University of Wisconsin–Madison¹ shows that while these great advances in crop yield have occurred in the last 50 years nutrient content has been under siege and declining. Similarly, a review of data published by the USDA’s ARC Nutrient Data Laboratory² shows “a sharp decline in the minerals, vitamins and other nutrients in foods since the last comprehensive survey”, about 20 years ago.

Analysis of the mineral content of select produce comparing 1963 data and 1999 data showed significant drops in mineral content. (Chart 1.)

Chart 1 (milligrams/100grams)

Produce:	Calcium		Magnesium		Potassium	
	1963	1999	1963	1999	1963	1999
Beans, snap, green	56	37	32	25	243	209
Broccoli, raw	103	48	24	25	382	325
Carrots, raw	37	27	23	15	341	323
Peaches, raw	9	5	10	7	202	197
Tomatoes, red	13	5	14	11	244	222

Much speculation followed the publication of this and similar data. What did it really say? Did these number truly reflect the soil nutrient depletion many claimed such heavy farming had to cause or was it reflecting something else about the growing prevalence of industrial crops?

New Evidence On Nutrient Depletion

Recent data published by Dr. David Thomas, a primary healthcare practitioner and independent researcher looked at the difference between UK government published tables for nutrient content published in 1940 and again in 2002.³ The comparison was eye-opening. It showed that the iron content of 15 different varieties of meat had decreased 47%. Dairy products had shown similar falls; a 60% drop in iron and up to 90% drop in copper.

Further Consequences Of Nutrient Depletion In Plants

In a report published by the UK’s Mental Health Foundation entitled “Feeding Minds” researchers conclude that changes in the

way we produce food have reduced the amount of essential fats, vitamins and minerals consumed.⁴ They point beyond the foods we consume to the foods we feed the animals we consume. In particular, the way we have changed the diet of food animals has altered not just what they eat, but what we eat as well. In many cases it’s changed their body fat composition, something that has driven the decline in omega-3 fatty acids in our diets.

Greater Availability Versus Less Value

It is true that in the modern world of the industrial nation’s fruit and vegetable availability is at an all time high. If we want it, it’s there. On the other hand despite this increased availability fruit and vegetable consumption has not increased in the population. Indeed in many population sub-groups it has declined. When this knowledge is coupled to the reported declines in nutrient levels in foods it has many healthcare providers, scientists, researchers and government officials looking for answers to how we can hope to sustain the nutritional value and balance of our foods while needing to produce more and more from the same soils to feed an ever-growing population. So far the path ahead is uncertain at best.

All GNLD Nutritional supplements are researched and developed for the purpose of assuring a dietary abundance of the nutrients our foods are supposed to supply and the health protection and disease prevention benefits they provides. We know that minerals are amongst the most important nutrients our bodies need. We also know that due to poor food availability, poor food choices or simply the pressures of modern “fast food” lifestyles, many do not get the minerals they need.⁵ To close this significant nutritional gap GNLD offers several mineral choices including broad spectrum Multi Min, Cal Mag, Zinc and Iron all reflecting our exclusive “double amino acid chelation technology”— developed by Dr. Arthur Furst to maximize mineral uptake and benefit. We also provide a broad array of important minerals in all our multi vitamin and mineral supplements, for both adults and children. The mineral content of your diet need not be an issue even if the mineral content of your food might be.

Factoid: The US will celebrate it’s first ever “Herb Day” on October 14, 2006, to bring attention to the important roles herb and herbalism can play in our health, vitality and longevity.

Factoid: From continued monitoring of “bird flu” in the wild bird populations around the world, it was announced in February that France became the sixth European country to report this deadly disease within their borders. The continued spread of this virus reminds us of the significant role our immune systems will play in the future.

New Studies Show Protection Connection Between Fruits And Vegetables and Women’s Health

Tea and ovarian cancer risk: Researchers at the Karolinska Institute Division of Nutritional Epidemiology in Stockholm, Sweden conducted

Continued on page 2.

Continued from page 1.

a 15 year follow-up study of more than 61,000 women aged 40 to 76. Their evidence, published in the Archives of Internal Medicine (2005; 165(22): 2683-2686) showed that those women who consumed tea on a regular basis had a dramatically lower risk for ovarian cancer. Tea drinkers who averaged less than one cup per day equaled an 18% risk reduction. One or more cups per day provided a 24% risk reduction and 2 or more cups a day showed 46% risk reduction. As you might expect, these findings prompted the researchers to conclude. "These results suggest that tea consumption is associated with a reduced risk of ovarian cancer."

Soy and breast cancer risk: Publishing their work in the January 15, 2006 issue of *Cancer Research*, a team of researchers from Wake Forest University, Winston-Salem, North Carolina, USA concluded that soy phytoestrogens may protect against breast cancer risk in post menopausal women. Using direct laboratory evidence plus that from population studies that show that women who consume diets high in soy generally have lower rates of breast cancer and animal models researcher sought to clear up some confusing data from other studies. Lead researcher Dr. Charles Wood stated "Our study sought to make sense from these seemingly contradictory data." First they looked for negative potential and found that even at very high doses there was no evidence that the estrogen like compounds in soy, called isoflavones, stimulate breast cell growth in any negative way. Looking at the positive side Dr. Wood concluded "The study also suggests that women who have higher levels of estrogen may actually gain a protective effect from higher doses of isoflavones."

Broccoli, soy and breast, ovarian and prostate cancer risk: A study performed by researchers from Georgetown University, Washington DC, and published in the *British Journal of Cancer* (volume 94, pp. 407-426) investigated the potential of the cruciferous phytonutrient indole-3-carbonol and genistein and isoflavones from soy to boost the presence of two known tumor suppressors genes called BRCA1 and BRCA2. Lead researcher Eliot Rosen explained that "BRCA1

and BRCA2 have both been identified as tumor suppressors in several different hormone-responsive cancer types." When tested individually levels of these protectors increased from 5 to 10 fold in breast cancer cells and 8 to 16 fold in prostate cancer cells. When the three were combined however they observed a "greater effect on BRCA induction than in either agent alone." Professor Rosen concludes "It is now clear that the function of crucial cancer genes can be influenced by compounds in things we eat. Our findings suggest a clear molecular process that would explain the connection between diet and cancer prevention."

Identifying and understanding the inter-relationships of nutrients within nature's blueprint for human nutrition has always been a foundation principle of the research into and behind GNLD supplements. We have devoted a great deal of effort to assuring the presence of whole families of nutrients in our products and have led the way in the science and technology of nutrient diversity. That approach is displayed perfectly in the formulation of our product Cruciferous Plus™. Cruciferous Plus contains the whole family of phytonutrients found in the plants from which its made, including all three of the protector phytonutrients mentioned above. The benefits of such a formulary strategy were confirmed in the middle 1990's when Cruciferous Plus was tested in a US National Cancer Institute protocol, using MCF7 human breast cancer cells, and found to be protective against cancer forming events and to inhibit the spread of cancer cells once they are formed.

Reference

- 1.) Originally presented November 7, 2000 at the annual meeting of the Soil Science Society of America. <http://www.soils.wisc.edu/~barak>
- 2.) www.nal.usda.gov/fnic/foodcomp/
- 3.) www.pponline.co.uk/encyc/magnesium.html
- 4.) Feeding Minds - the impact of food on mental health January 2006 <http://www.mentalhealth.org.uk/page.cfm?pagecode=PRFM>
- 5.) USDA – Agriculture Research Center <http://www.tna-support.org/newlook/Articles/CAM/Lemole2.htm>

More Good News About Omega-3 For Asthma Sufferers!

Exercise-induced bronchoconstriction, or EIB, is a common challenge confronted by asthma sufferers when they engage in the prolonged physical exertion needed for sports, exercise or physically demanding jobs. New research published in the January 2006 issue of the journal *CHEST* (Vol. 129, No. 1, pp 39-49) shows that supplementation with omega-3 fatty acids can protect them against EIB. In a double-blind, placebo-controlled crossover study researchers showed beyond a doubt that supplementation with omega-3 fatty acids can "...reduce airway inflammation in asthmatic subjects with EIB." This is important news for the 100's of millions of asthma sufferers around the world. This evidence backs up an earlier study published in the December 2005 issue of *CHEST* that reported improved lung function by decreasing inflammatory factors in lung tissue.

And even more good news about omega-3's and heart health!

Writing in the November 1 2005 issue of *Circulation*, the journal published by the American Heart Association, researchers presented a study showing that daily supplementation with omega-3 fatty acids can reduce the risk of fatal cardiac events in high-risk patients. The benefits are seen as lowered risk of unstable or erratic heart beat, specifically ventricular tachycardia (VT) arrhythmias in which the heart beats too quickly, or ventricular fibrillation (VF) arrhythmias

in which the heart quivers ineffectively. Maintaining stable and efficient heart rhythm is obviously important at any age, but in an aging population such cardiac events are becoming increasingly more frequent. Looking for safer alternatives to drug therapies and their related side effects, the researchers wrote, "If the present data are confirmed, these (omega-3) fatty acids may also be recommended as a less toxic alternative to usual antiarrhythmic drugs to prevent recurrent episodes of VT/VF."

The GNLD Scientific Advisory Board has studied the research and published literature relating to the health benefits of omega-3 fatty acids in general and cardiovascular health in particular for decades. We are acutely aware of the importance of these nutrients to the human diet. First introducing the idea of omega-3 supplementation more than 25 years ago GNLD Omega-3 Salmon Oil (from Nature's richest whole food source, Salmon) and Omega-3 Concentrate (with "heart specific" lipotropic factors) offer health conscious consumers two perfect choices to assure they provide the healthy abundance of omega-3 fatty acids nature intended and their bodies need.

Note, anyone under a physicians care for a serious heart condition, including the two arrhythmias mentioned above, should discuss that physician about the complementary benefits omega-3 supplementation can provide.

Protein Needs For Athletes.

Ask one hundred athletes what they consider to be the most important nutrient for performance, and you can bet that 90% of them will answer “protein.” It’s for good reason, too. Originating from the Greek word “Proteois” which means “of first importance,” protein is critical to athletic performance.

Protein is vital for virtually everything from healthy muscles, ligaments, tendons, organs, and immune function to healthy hair and nails. Besides water, protein comprises the largest portion of our bodyweight; the body’s requirement for protein is directly related to good health. Additionally the central nervous system cannot function properly without components of protein called amino acids, which are necessary for the brain to both send and receive information.

For athletes, the importance of protein goes beyond its basic biological functions—protein is critical in the body’s ability to rebuild muscle (protein synthesis) after a bout of strenuous exercise or competition. Without sufficient dietary protein intake, the athlete risks reduced recovery and even muscle atrophy (loss). Therefore, athletes must focus not only on proper training and recovery, they must also ensure that they receive adequate amounts of protein every single day.

Though most experts agree upon the importance of protein for athletes, many experts still debate the timing of protein intake. Is there any benefit to protein ingestion before or after training and competition preparation?

In a review article published in the *Journal of the International Society of Sports Nutrition* (2 (1); 50-67, 2005), researchers concluded that for optimal protein synthesis to occur in the body as a result of

athletic training, protein ingested immediately after exercise is most effective. The authors examined protein ingested immediately before exercise, immediately afterwards, and several hours afterwards.

All results suggested that protein intake immediately after exercise stimulated protein synthesis at the highest levels.

There is also tremendous confusion as to how much protein an athlete should consume every day; experts disagree on the amounts to support athlete’s needs. The same study suggests that for optimal protein synthesis to occur, athletes should consume around 1.4 grams of protein for every kilogram of bodyweight (.64 grams per pound). For a 180 pound athlete, that means 115 grams of protein every single day! With athletes on calorie restricted diets, or athletes who focus on carbohydrate-rich diets, this goal can be difficult to meet. Plus, a protein source that is readily available immediately after exercise (and is appealing to the palate) can be a challenge.

GNLD protein supplements are a delicious, nutritious and perfect choice for athletes. They provide all 22 amino acids involved in human nutrition, mix easily with milk, juice or water (many athletes enjoy GR² Control Meal Replacement Protein Shake as a delicious, convenient protein source). GNLD also has a wonderful protein source with the GGreat Bar. It’s packed with 15 grams of protein, low in carbohydrates and fat, but high in taste. All of GNLD’s protein products are highly bioavailable, and are equal to nature’s finest protein sources, such as egg and milk.

For athletes at all levels, protein is a vital component of peak performance. Any athlete who desires to be his/her best, should include GNLD protein products as part of an overall training program.



SAB HAS THE ANSWERS:

Q. Many glucosamine products contain MSM, why did GNLD choose not to use it in Full Motion?

A. MSM, Methyl Sulfonyl Methane is a derivative of the solvent DMSO (dimethyl sulfoxide). MSM is not part of the human food chain, and there is no dietary need for it. In addition there is no evidence MSM promotes cartilage repair or regrowth. In contrast, the combination of ingredients that make up Full Motion are based on leading edge science that shows direct supplementation of glucosamine, the primary cartilage building block, can support healthy joint function and regenerate lost or damaged cartilage.

Q. The distributor guide states Brindal Berry found in the Thermogenic Enhancer helps stabilize appetite and inhibit lipid and cholesterol synthesis. What does this mean?

A. Brindal Berry (*Garcinia cambogia*) is a natural source of hydroxycitric acid (HCA), and studies show that HCA can inhibit an enzyme (ATP- citrate lyase) which is required to convert carbohydrates into fat and cholesterol. HCA also triggers satiety

signals to the brain to help suppress the feelings of hunger to control the appetite.

GNLD’s Thermogenic Enhancer was formulated using “polypharmacy” as an approach to provide the benefits of all 7 herbs working together synergistically. These herbs help the body burn fat for energy, assist in controlling appetite, and increase energy levels—all while doing so without the use of dangerous central nervous system stimulants.

Q. Do any of GNLD’s products contain nitrates, pesticides, herbicides?

A. No, our quality control standards and procedures test for and prohibit the presence of such compounds. All raw materials used in GNLD products must first pass our stringent Quality Control process. Every one of these raw materials requires different types and amounts of tests, which are performed by GNLD and our global quality assurance and control system. Additionally, GNLD requires specification sheets and Certificates of Analysis for all of our nutritive food raw materials that we purchase.

Continued on page 4.

Q. Is the Enjoy/Avoid guide only for the main meal or can it be used for mini meal suggestions?

A. The Enjoy/Avoid booklet is designed to be a real-world “survival guide” for people on the GR² program. Primarily, the booklet helps GR² Control participants pick items for their main meal. Additionally, the booklet provides guidelines for meal choices when a GR² Control shake is not available, like at a party or when dining out. By using the guide in these circumstances, the participant can choose foods that are both nutritious and will help the participant stay in the Glycemic “control zone.” Finally, the booklet gives food choices for those individuals who have met their weight loss goals and are now in a maintenance phase.

Q. Is folic acid the only ingredient that lowers homocysteine levels?

A. Though folic acid is a key nutrient for helping to keep homocysteine at safe levels, research shows that the greatest benefits result when it is present with vitamins B-6 and B-12.

The SAB first introduced the importance of homocysteine to cardiovascular health in the mid-1990's with the introduction of advanced formula Lipotropic Adjunct. Evidence has shown that elevated blood homocysteine levels are a consistent indicator of heart disease risk and that supplementation is a viable tool for lowering elevated levels.

Today, many scientists agree that homocysteine can injure artery walls, oxidize LDL (so-called “bad cholesterol”), and lead to formation of artery clogging plaques (atherosclerosis). An increasing number of studies have shown that supplementing the diet with folic acid as well as vitamins B6 and B12 can help in decreasing the level of homocysteine in the blood; therefore potentially reducing the risk of developing heart disease. Additionally, Betaine HCl and choline support the metabolic cycle which keeps homocysteine in check.

GNLD's exclusive Lipotropic Adjunct formula combines folic acid, vitamins B6, B12 and Betaine HCl with choline; all in the appropriate ratios to help support a heart-healthy environment. GNLD's special formula provides balanced amounts of lipotropic factors and other nutrients known to support the metabolism of homocysteine.

Q. What part of the grapefruit does the extract come from in Flavonoid Complex?

A. Flavonoid Complex contains extracts and concentrates derived from whole fruit and vegetable sources. With citrus fruits such as grapefruits, the majority of the extract comes from the inner surface of the peel, called the flavedo and mesocarp, since the flavonoids are the most concentrated in that part of the fruit.

Q. What is the difference between omega-3, omega-6, and omega-9 fatty acids?

A. Fatty acids are chains of carbon, hydrogen, and oxygen atoms linked together, and they are the simplest forms of lipids (fats). “Omega” refers to the double hydrogen bond closest to one end of the chain. If the hydrogen bond is 3 carbon links from the end, it is an omega-3 fatty acid. If it is 6 carbon links from the end, it is an omega-6.

Not all omega fatty acids are essential, but two are: linoleic and linolenic. Linoleic is an omega-6 fatty acid and linolenic is an omega-3 fatty acid. Omega-9 fatty acids are found in oleic acid, which is common to nearly all animal and vegetable oils. Omega-9 fatty acids have been shown to play a role in heart health. GNLD's Tre-en-en® Grain Concentrates is an excellent source for the two essential fatty acids and omega-9 fatty acids.

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