Pro Vitality Nutrition: The Evidence Continues to Build

Scientific evidence reinforcing the importance of key whole food nutrients in maximizing health, vitality and longevity, continues to mount. The nutrients contained in fruits, vegetables, whole grains and fish are so strongly connected to preserving health and wellness, that authorities worldwide urge us to increase our consumption of these foods as the primary tool in the battle against chronic disease.

Here are three recent studies from major research centers published in leading peer-reviewed scientific journals that affirm this message:

• **Too much of the wrong foods sets a course for disease...**
  A study published in the August 15, 2007 issue of the *Journal of the American Medical Association* (JAMA) calls attention to the severe health risks associated with our Western diet, grossly deficient in whole-food nutrients from fruits, vegetables, grains and fish, but excessive in processed fats, carbohydrates and calories. While evaluating colorectal cancer recurrence, researchers from the Dana-Farber Cancer Institute in Boston demonstrated that 80% of all colorectal cancer cases were both directly or indirectly attributable to the Western industrialized-eating habit and preventable with dietary change. Their recommendations for reducing this risk: a prudent diet rich in fruits, vegetables, poultry and fish.1

• **Getting an abundance of the right foods is the path to long-term health!**
  Published in the July 2007 issue of the *American Journal of Clinical Nutrition*, researchers from Monash University and the Cancer Council of Victoria, The University of Melbourne, the University of Cambridge and St. Vincent’s Hospital Melbourne report that, “This combination [of fruit, vegetable, and omega-3 dietary content] is believed to have antioxidant, anti-inflammatory and anti-thrombotic properties that reduce the risk of cardiovascular disease by 30%”. These nutrients have also been shown to lower the rate of incidence for obesity and various cancers.2 Evidence demonstrating the health benefits associated with these foods was also described by a study conducted at the Harvard School of Public Health in 2007 suggesting that higher intakes of antioxidant and anti-inflammatory micronutrients are associated with lower reports of cough, respiratory infections and less severe asthma-related symptoms.3

• **Much is lost to industrialized growing and processing!**
  According to a research from Wageningen University in Holland published in the November 2005 issue of the *Journal of Food Chemistry*, nearly every phase of processing from “farm-to-fork” reduced the level of the healthy phytoneutrients in fruits and vegetables.4 Data presented by researchers from the Department of Soil Sciences at the University of Wisconsin – Madison confirms that while great advances in crop yield have occurred in the last 50 years, nutrient content has been under siege and declining.5 A similar review of data published by the USDA’s ARS Nutrient Data Laboratory (chart 1) shows “a sharp decline in the minerals in foods since the last comprehensive survey [nearly 20 years ago]”

Modern industrialized diets are directly linked to disease.

The diet that has dominated the industrial world for the last few decades is directly related to the epidemic of chronic disease.6 Foods consumed by the average human today are not only energy-dense and nutrient-deficient, but also lack the nutritional diversity fundamental to healthy human biochemistry. Overflowing with processed fats, carbohydrates and chemicals alien to the human food chain, the modern-day diet leaves us overfed, under-nourished and needlessly exposed to vitality-robbing health problems.

Whole food supplementation: A strategy that works.

Changing our diets is not an easy or convenient transition for someone living in the quick pace of the modern industrialized world. But we know that nutritional supplementation that is well-formulated and derived from whole-food sources actually found in the human food chain can fill in the gaps left by the modern industrialized diet. It supports our body in producing energy, and promoting vitality and long life.
**Background:** We first discovered the important role lipids play as building blocks for our cell membranes in 1925\(^1\). By the 1950's researchers realized that the cell membrane not only served as a mechanism to separate the inside of the cell from the outside, but also functioned as a highly selective filter that facilitated transport systems controlling nutrient entry and waste removal\(^2\). From that point, we began to recognize the importance of specific lipids in membrane function, energy production and metabolite secretion (biochemicals manufactured in cells; i.e.; hormones, enzymes)\(^3\).

**GNLD Research:** In the mid-1950s, a group of Southern California doctors investigating the possible causes of patient-reported ‘chronic fatigue’ drew a connection between the absence of whole grain dietary lipids and reduced cellular energy production. This research led to the concept of lipid supplementation made from whole grain wheat, rice and soy, as a solution to ‘chronic fatigue’. This gave rise to GNLD’s Tre-en-en Grain Concentrates. In the years that followed, Tre-en-en's beneficial effects on cell membrane structure and function were further confirmed. The most compelling demonstration of the positive effects of the lipids and sterols in Tre-en-en Grain Concentrates was in a study conducted at Texas A & M University in 1987. This study compared the effects of Tre-en-en use in the test group to a control group. The results (see charts 2-4) were dramatic\(^4\).

**Latest Findings:** The significance of the key role whole grain lipids and sterols play in cellular structure and function, and in human health overall, continues to be supported by even more recent scientific publications and government-funded awareness campaigns. A 1998 study of 34,000 women showed whole grain nutrition had a strong cardio-protective effect\(^5\). A component of the 1999 Nurse’s Health Study (a survey of 75,000 nurses) showed regular whole grain consumption lowered the risk of heart disease by 25% and stroke by 36%\(^6\). Another study from 2000 published in the Journal of the American Medical Association showed nearly a 50% reduction in ischemic stroke risk for people who normally consumed whole grain products\(^7\). Whole grain nutrients and the importance of lipids and sterols continue to be a strong focus point for nutritional research\(^8\).

Here are a few more examples:

- A May 2005 article in Human Nutrition & Metabolism identified whole grain oils, now nearly devoid from the average diet, as anticancer dietary components\(^9\).
- Two studies conducted in 2005\(^10,11\) demonstrated the unique benefits of rice bran oil in cholesterol reduction.
- A 2007 meta-analysis study (a study of an accumulation of evidence)\(^12\) concluded that the need for whole grain nutrition is so acute in the population that government efforts to promote awareness should be doubled. The researchers further concluded that the process of refining grains removed many biologically active agents, including fiber, vitamins, minerals, lipids, sterols and other compounds. “These biological agents influence cardiovascular risk through effects on glucose metabolism, lipids, lipoproteins, endothelial function, and other mechanisms, potentially accounting for much of the observed benefit of high intake of whole grains” wrote lead author Phillip Mellen of Wake Forest University.

---

**Charts:**

**Chart 2 - Cardiovascular Development**

<table>
<thead>
<tr>
<th>Weight in Grams</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without Tre-en-en(^*)</td>
</tr>
<tr>
<td>With Tre-en-en(^*)</td>
</tr>
</tbody>
</table>

**Chart 3 - Nutrient Utilization Efficiency**

<table>
<thead>
<tr>
<th>Ratio growth and development to nutrients consumed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without Tre-en-en(^*)</td>
</tr>
<tr>
<td>With Tre-en-en(^*)</td>
</tr>
</tbody>
</table>

**Chart 4 - Overall Growth Development**

<table>
<thead>
<tr>
<th>Weight in Grams</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without Tre-en-en(^*)</td>
</tr>
<tr>
<td>With Tre-en-en(^*)</td>
</tr>
</tbody>
</table>
Carotenoid Complex
Protect your cells

Background: Carotenoids first took center-stage as protector nutrients in the mid 1970’s when researchers at the US Department of Health and Human Services and the Centers for Disease Control and Prevention (CDC) identified their role in reducing the risk of disease. National Cancer Institute researcher Regina Ziegler went on to reveal its connection to lung cancer prevention in 1986, and then showed a lower risk of cancer in those with the highest dietary intake of fruit and vegetable-derived carotenoids. The National Health and Nutrition Examination Survey (NHANES) and other studies at the time found carotenoids also functioned in heart health and reduced the risk of heart disease. Proof of benefit soon expanded to include eye health and visual acuity and immune function.

GNLD Research: Research conducted on GNLD’s Carotenoid Complex has spanned more than 15 years. It started with the first ever proof of bioavailability of whole food-derived carotenoids. USDA researchers went on to reaffirm its bioavailability and then demonstrated its cardio-protective powers and cellular protective powers. This was followed by two more studies conducted by the USDA researchers showing Carotenoid Complex’s beneficial effects on immune capacity. In 2001, GNLD researchers reaffirmed bioavailability across an even broader spectrum of dietary carotenoids.

Latest Findings: Evidence supporting the importance of carotenoid intake for health benefits continues to mount. Concern by leading health authorities over insufficient carotenoid consumption has resulted in campaigns to increase awareness for higher levels of carotenoid intake.

Heart and cardiovascular health: A 2004 study conducted by a team at the Harvard Medical School found that men in the top quintile with higher levels of serum carotenoids (including alphacarotene, beta-carotene, lycopene, lutein, and beta-cryptoxanthin) had a 40% decreased risk of ischemic stroke than those with the lowest serum levels. Similarly, a 2008 study of 559 men showed that increased intake of alpha and beta carotene from carrots equated to a 17% reduction in risk of cardiovascular (CVD) death. Swedish researchers in 2006 correlated consistently lower levels of the carotenoids lutein, zeaxanthin, and beta cryptoxanthin with coronary artery disease occurrence. The healthy controls had significantly higher levels of these carotenoids in their blood.

Prostate health: Since the early nineties, scientific research has reported a connection between the carotenoid Lycopene and prostate cancer risk reduction. One study showed that Lycopene (from tomatoes) present in the diet 4 to 5 times per week, attributed to a 25% reduction in prostate cancer risk. The 2-year study found that an 82% increase in blood Lycopene levels corresponded with a 42% decrease in prostate-specific antigen (PSA) levels.

Immune health: Swedish researchers in 2001 observed higher levels of natural killer cells (NK cells) in people with higher levels of these carotenoids, confirming the relationship between dietary carotenoid intake, immune capacity and health.

Vision health: In a 48-week intervention trial, researchers tested Lutein supplementation for vision protective-function in patients with retinitis pigmentosa (RP). They concluded: “Comparing the development of vision measures against the natural loss expected to occur over the course of the 48 weeks, most measures showed reduced decline, and these reductions were significant for normal illumination.”

Mental performance: A 2007 French study showed a connection between carotenoids and cognitive performance in a healthy elderly population. Study author Tasnime Akbaraly states “In this study, low levels of specific plasma carotenoids (lycopene and zeaxanthin) were associated to poor cognitive functioning in a highly educated, community-dwelling elderly population.”

Inflammatory health: A 2005 UK study by Cambridge University researchers showed that study subjects with the highest (top one third) daily intake of beta-cryptoxanthin had only about one-half the risk of developing polyarthritis than those in the bottom one-third. Researchers commented that even modest increases in beta-cryptoxanthin intake were associated with a significantly reduced risk of developing inflammatory disorders such as rheumatoid arthritis.
Background: Not only are omega-3 fatty acids in general directly tied to heart health, but their individual abilities to lower triglycerides, increase HDL (good cholesterol), inhibit plaque formation, stabilize heart rhythm and maintain healthy veins and arteries have highlighted the huge importance of having all eight members of the omega-3 fatty acid family. Researchers were aware of the benefits of omega-3 fatty acids before they were even publicized in the 1970s. In 1936, an epidemiologist studying the Inuit in Greenland observed a zero rate of incidence of heart disease in the population, and first drew connections between heart health and the presence of these fatty acids in the Inuit diet. In 1980, Danish researchers documented the extent of the health protecting powers of omega-3 fatty acids by comparing the incidence of several diseases in Danish versus Greenland Inuit populations. They showed the Danish population had 10 times more cases of heart attacks, 20 times more cases of Psoriasis, 25 times more cases of asthma, and 9 times more cases of diabetes than the Inuit.

GNLD Research: GNLD introduced Salmon Oil, derived from pure, natural Salmon, as the most biocompatible, whole food, human food chain source of omega-3 fatty acids. Throughout the 1980’s and 90’s the SAB followed scientific and technological developments in omega-3 supplementation. In the early 2000’s they directed the development of a unique technology called “molecular differentiation” which, for the first time, allowed consistent identification, quantification and delivery of all eight members of the omega-3 fatty acids family in a whole food supplement. Introduced in 2006, Omega-III Salmon Oil Plus set a new standard for excellence in omega-3 supplementation. Human clinical trials conducted under the direction of SAB member Dr. Arianna Carughi and presented at the Annual meeting of the Federation of American Societies for Experimental Biology, April 2008, and at the annual meeting of the American College of Nutrition in October 2008, displayed powerful performance across a wide range of benefits, including:

- Rapid bioavailability and assimilation; resulting in increased anti-inflammatory balance in cell membranes.
- Triglyceride reduction; on average, 17% in just 8 weeks.
- Improved omega-3 to omega-6 ratio; lowering indicators of heart disease risk.
- Improved omega-3 index; a 38% increase in this cardio-protective measure.
- Lowered the inflammatory index by 68%; reducing the tendency toward inflammation and inflammatory conditions.

Latest Findings: As more is being discovered about their importance to health, many scientists and researchers have coined the term “master molecules” to describe the power of omega-3 fatty acids. They are fundamental to human biochemistry, and have been proven to have an important role in health, vitality and longevity.

Cardiovascular health: In 2005, daily supplementation of omega-3 fatty acids was shown to reduce risk of fatal heart failures in high risk patients. In 2006 researchers looked at data from more than 340,000 participants and reported a 35% reduction in the risk of cardiac death, and a 45% reduction in the risk of sudden death for those who consumed 850 mg of dietary omega-3’s each day. A 2007 study from Japan reported that daily supplementation resulted in a 24% reduction in angina (heart pain) and a 19% reduction in non-fatal coronary events. That same year researchers from the University of Athens reported that high dietary omega-3 status equated to healthier more stable heart rhythm.

Cognitive health: In 2005 researchers at Louisiana State University (LSU) showed that fish derived omega-3 fatty acid are not only vital to brain tissue building but exerts a protective effect against neuro-degeneration and brain function decline associated with Alzheimer’s. In 2007 researchers published data that showed that elderly with the highest dietary omega-3 intake had significantly less cognitive decline than those with the lowest. That same year it was shown that high dietary omega-3 intake equated to less decline in verbal ability amongst the elderly. A 2008 study from Taiwan showed that 1.8 grams of supplemental Omega-3 fatty acids may improve general clinical function in patients with mild or moderate Alzheimer’s disease and mild cognitive impairment.

Vision health: In addition to the impact of omega-3 fatty acids on reducing the risk of Age-related Macular Degeneration (AMD) by 70 per cent, omega-3 fatty acids, particularly DHA, have been shown play an important role in the layer of nerve cells in the retina.

Pregnancy and lactation: The importance of omega-3 dietary intake during pregnancy and lactation has been shown in several recent studies. One recent example from Canada reported that an increased intake of the omega-3 DHA during pregnancy could produce improved motor function in the offspring in later life.

Bone and Joint health: Confirming previous studies that omega-3 fatty acids can reduce and even prevent inflammation, A study published in the April 2006 issue of the journal Surgical Neurology showed that omega-3 supplementation is effective against back and neck pain. In 2007, Swedish researchers showed that young men with the highest dietary omega-3 fatty acid intake in general; and DHA in particular also amassed the strongest bones.
In their 2005 landmark report entitled “Chronic Disease: A vital Investment”, the World Health Organization (WHO) spotlights the dire state of global health, and sounds the alarm—we are quickly losing this battle. Here is what they told us:

- Chronic Disease (heart disease, cancer, stroke, chronic respiratory disease and diabetes) kills twice as many people as all infectious disease, including HIV/AIDS, tuberculosis, malaria, influenza and pneumonia, combined.
- This count is expected to increase 17% by 2015. (Faster than the rate of population growth.)
- Unhealthy eating is identified as the #1 cause, followed by physical inactivity and tobacco use.

Strategy for prevention:

1: FIX YOUR DIET        2: GET ACTIVE        3: IF YOU SMOKE, QUIT

The first step in preventing chronic disease is changing our diet. Here is what the WHO and other global health authorities have to recommend:

**Heart disease:** Heart disease is the #1 killer, accounting for nearly one-third of all deaths world-wide. WHO’s nutritional strategy for prevention: Increase intake of fish, fruits, vegetables, nuts and whole grains; maintain a healthy weight. Likewise the American Heart Association’s nutritional keys for heart health: eat more fruits, vegetable, whole grains and fish rich in Omega-3 Fatty Acids.

**Cancer:** 20 million people suffered with cancer in 2005. WHO projects a 50% increase in new cases of cancer in just 15 years. They found that dietary factors accounted for about 30% of cancers cases. To reduce the risk of cancer, WHO along with The US Centers for Disease Control and Prevention (CDC) and the US National Cancer Institute (NCI) recommend: Eat more fruits, vegetables and whole grains.

And of course, if you smoke, quit. The NCI in particular draws specific attention to the phyto-nutrient family of carotenoids, highlighting their role in cancer prevention.

**Diabetes:** Diabetes is quickly becoming a global epidemic... 171,000,000 people suffered from it in 2005. And it is projected to grow to 366,000,000 by 2030... a 114% increase! In fact, many medical researchers now believe that for every person diagnosed with diabetes, there will be two more individuals in a state of ‘pre-diabetes’, resulting in more than 1,000,000,000 diabetic sufferers around the world.

The nutritional strategy for prevention according to the American Diabetes Association (ADA) and the US National Institutes of Health (NIH): reduce the consumption of fast, convenience and processed foods; eat more fruits, vegetables whole grains and omega-3 rich fish and be more physically active.

DIETARY SOLUTIONS

- Whole Grains
- Fruits & Vegetables
- Fish

Whole Food Nutrition for Lifelong Health and Vitality... in convenient, on-the-go packets

Tre-en-en® Grain Concentrates  Carotenoid Complex  Omega-III Salmon Oil Plus