

Nutritional Supplements: What's the Difference?

David A. Ramsey, DC, ACN

In the practice of Functional Medicine, a practitioner's primary goal for every patient should be to help them achieve optimum health and to maintain this for a lifetime. This can only be achieved by teaching the patient how to eat for optimum health and how to use natural nutritional supplements versus pharmaceuticals, which ultimately destroy health.

There are two destructive forces inherent in every over-the-counter or prescription drug. 1) they cause many various toxic side effects; 2) They severely deplete essential nutrients so that they can't be used by the cells for tissue repair and healthy maintenance.

Side effects of drugs are greatly underreported. Experts estimate anywhere from 20% to as little as 1% of drug side effects are ever reported. This implicates them to be much more destructive than we have ever been lead to believe.

Drugs can be very powerful and can often be very fast in alleviating symptoms but there is always a huge price to pay with any regular or long term use. No drug can heal anything in the body. They can only change symptoms. Only nature can heal the body and maintain health.

Disease and illness would be almost nonexistent if people would eat healthy and take the right nutritional supplements. Pharmaceutical-based allopathic doctors are ill equipped to guide their patients in these disciplines. Many patients are aware that they need guidance in healthy eating habits and have an interest in vitamin supplements but easily become overwhelmed by the plethora of bottled supplements stocked in rows and rows at the health food stores, drug stores, or Costco.

In my many years of experience prescribing nutritional supplements for a myriad of many challenging health conditions, I have found that there are primarily two types of nutritional supplements: 1) Whole Food Concentrates, and 2) Nutraceuticals. The first and foremost supplement company recognized by holistic practitioners to be the "gold standard" that manufactures and distributes Whole Food Concentrates is Standard Process Labs in Palmyra, Wisconsin. Nutraceuticals are what is

manufactured and distributed by the majority of other existing supplement companies. This report will explain the differences between these two types of supplements and why 95% of what I prescribe for my patients are the whole food concentrate supplements from Standard Process Labs. The difference is quite significant.

Whether purchased in a drug store, health food store, or ordered online, Nutraceuticals comprise the major portion of nutritional supplements used by those people who take vitamins, minerals, and various other products to supplement what they may not be getting from their dietary food intake alone. Yet, what most people don't realize is that nutraceuticals typically fall short in supplying the nutritional needs of a body to the extent of actually improving the function and level of health in cells, organs, or body systems. In fact, many studies have shown that with long-term use, many nutraceutical products can actually deplete nutritional status and even have negative effects in the body. They are certainly healthier than pharmaceuticals, but not near as powerful or as healthy as whole food concentrates for healing conditions and maintaining optimum health.

Whole food concentrates from Standard Process Labs are the most pure and natural supplements available because they are made from organic vegetables, fruit, herbs, and bovine or porcine organ tissue that are highly concentrated from a proprietary low heat, vacuum drying extraction process developed many years ago by the founder, Dr. Royal Lee. They contain all the complete vitamins, minerals, amino acids, enzymes, and co-factors that naturally occur in nature. It's important to note here that a company can legally claim that their supplements are whole food concentrates even if their product contains only 10% from a whole food source. Even with this caveat, only 10% of supplement companies are considered to be in the category of "whole food concentrates".

Nutraceuticals are synthesized in a lab, don't contain all the naturally occurring enzymes and co-factors, and therefore are not utilized fully by the cells. The methods used for growing and processing whole food concentrates is much more expensive and labor intensive, so other nutritional supplement companies are not inclined to use these methods due to much higher costs and subsequently lower profits.

Dr. Royal Lee was a renaissance man, an inventor, and a dentist who was often compared to Benjamin Franklin and Thomas Edison. He also

became known as the Father of Holistic Nutrition. During his senior year at Marquette University School of Dentistry while doing research for his thesis, Royal made a remarkable discovery that would change the course of his career. He realized that dental diseases, as well as many other diseases, were linked to nutritional deficiencies. In his paper, he cited research which showed that tooth decay was most prevalent in children with a high incidence of childhood diseases. In children who did not have a history of chronic illness, tooth decay was virtually non-existent. He also proved that whole food vitamins were necessary for normal functioning of all the endocrine glands. While doing his research, he became convinced that most illnesses were largely caused by deficiency diseases. This became his lifelong passion and crusade.

Dr. Lee's discoveries were strikingly similar to one of his contemporaries, Weston A. Price, also a dentist and well-known forefather of holistic nutrition. Dr. Price traveled the world to study indigenous cultures in 14 different countries. He wanted to figure out why the people in these remote cultures did not succumb to the degenerative ailments common to the western world. He discovered that these societies were, for the most part, immune to disease and were in perfect physical health. In examining these people, the most obvious finding was very healthy teeth and dental arch forms. In every culture he visited, all the people in these tribes had one thing in common: they all cultivated and ate the local foods from their environment while obeying the original laws of nature starting from the nutrient rich soils that their food was grown in. As time passed and explorers from the western world introduced their eating habits to these tribes, Dr. Price on many subsequent visits started noticing not only more dental decay, but overall physical degeneration and chronic health conditions in these tribes. As these people continued to consume more "modernized" foods such as refined grains (white flour), sugar, and vegetable fats, their sicknesses and physical breakdown became increasingly prevalent. The offspring born to these parents who adopted western modernized foods had even worse outcomes. Dr. Price's book, *Nutrition and Physical Degeneration*, first published in 1939, is in its 23rd printing and still a popular seller.

The name Dr. Royal Lee, a master of engineering, electronics, physics, physiology, biochemistry, and disease causation is not known by most people. Dr. Lee himself expressed his frustrations with his life work in a letter to a physician friend in the 1960's: "As I see it, I have spent about

two percent of my life developing new and useful products. The other 98% of my time has been occupied with a constant battle with someone to make him believe the new facts on which my work is based.” Dr. Lee spent the largest percentage of his time combating established allopathic medicine with their narrow focused indoctrination from their pharmaceutical-based education and training. So, unfortunately Dr. Lee’s work still remains relatively unknown even though many practitioners in the world of holistic medicine feel that he was a genius deserving of a Nobel Prize.

Most people when asked to recall a Nobel Prize winner in the field of biochemistry would probably think of Linus Pauling. I personally met him many years ago at a health convention and I remember him as one of the nicest people I’d ever met. He won the Nobel Prize for chemistry in 1954, but his research with mega doses of Vitamin C, for which he is most known for, came many years later. The “Vitamin C” as used in Pauling’s research is actually Ascorbic Acid, which is just one component of the entire whole food complex of true Vitamin C. When one takes mega doses of Ascorbic Acid, they usually always end up with diarrhea. This is a very good example of what can happen when a person consumes a synthetic nutraceutical, especially in a high dose. The body very quickly reacts to the substance as being toxic, so the built-in defense mechanisms of the body react by flushing it out, in this case by means of diarrhea. Linus Pauling was definitely a highly intelligent man, a very nice person (in my experience), but his research regarding using Ascorbic Acid to combat cancer was flawed and was disproven by research conducted at Mayo Clinic. It’s also important to note that other negative effects of high doses of ascorbic acid is that it raises blood uric acid and oxalate levels leading to gout and kidney stones, and can cause excess absorption of iron and aluminum, factors related to heart disease and dementia, respectively.

Because of the dedication of the early pioneers of human nutrition like Royal Lee and Weston A. Price, we thankfully still have access to these completely natural, non-synthetic food supplements that offer a tremendous advantage in bettering our health. My mission as a natural health care physician is to use every skill I’ve been taught and have discovered through experience in a clinical setting. By applying powerful healing supplements, and teaching health restoring eating habits away from dependencies on harmful pharmaceuticals, it is a blessing and a privilege to witness many sick and suffering patients enjoy a life of

optimum health completely free from the destructive effects of drugs. My goal for this report is to hopefully convince you that there is a distinct difference between powerful whole food concentrate supplements and the standard, widely used nutraceutical products that I feel are largely a waste of your time and money, and only produce minimal results, if at all.

Vitamins' Earliest Roles

More than 100 years ago the earliest discoveries of different vitamins were necessitated by the prevalence of classical deficiency diseases such as: night blindness (Vitamin A), Beriberi (Vitamin B1), Pellagra (Vitamin B3), Rickets (Vitamin D), and of course the most famous of all deficiency diseases, Scurvy (Vitamin C) a common disease that plagued early sailors and pirates. An interesting fact is that that the old nickname for sailors, "Limey" came about from the discovery that the eating of limes when the "old salts" visited islands that were abundant in this citrus fruit, cured them of Scurvy. No wonder pirates were crazy! Symptoms of Scurvy: fatigue, loss of appetite, fever, painful joints, bleeding gums, loose teeth, leg termites, rusty hook, and loose bowels (can you say di ARRRRRRRRRRhea?! Sorry, I couldn't resist a good pirate joke!

Like in the case of the limes used for treating Scurvy, the early discoveries of treating these deficiencies with vitamins most likely came from very natural food sources. As you will learn in this report, vitamins from foods in their natural complex forms are entirely different from the single, isolated, chemically processed artificial substances commonly known as "vitamins".

What signifies a true, natural Vitamin is it's complete biochemical utilization by living cells. Every true Vitamin is actually a group of biochemically related compounds. Separating the individual components into a single incomplete substance, converts it from a biochemical, physiologically active micronutrient into a deconstructed chemical with little to no value to the cell.

What Actually is a Vitamin?

A Vitamin is a vital organic substance essential for metabolic processes in human life. They are food and fuel for the cells. Vitamins are actually coenzymes that regulate all chemical and physiological metabolic processes including energy production. There are primarily two

categories of Vitamins. 1) the fat-soluble Vitamins: A, D, E, K, and the essential fatty acids: Arachidonic Acid, Linoleic Acid, and Linolenic Acid; and 2) the water-soluble vitamins: B Complex, and C Complex. (Notice I did not list it as Vitamin C, which will be explained later in this report)

Recommended Daily Allowance? (Seriously?)

Many experts in the field of nutritional sciences regard the U.S. government's Recommended Daily Allowance (RDAs) of vitamins as entirely inadequate for the average individual in the prevention of disease. Every person has unique requirements and needs different nutrients in different amounts. How can there be an established universal "allowance" for the needs of a whole population of people? Individual need for nutrients is based on many factors such as diet, genetics, familial environment, geographical environment, toxin exposure, and many other circumstantial conditions.

RDA recommendations are based on the pseudoscience of nutraceuticals (synthetic vitamins), which are measured in volume (units) or weight (milligrams or grams). When the body consumes these fractionated synthetic substances, it has difficulty processing these chemicals, so consequently, biochemical imbalances and even toxic overdoses can occur. On the other hand, with whole organic foods and whole food concentrates, the body chooses what its needs are for assimilation and easily excretes what is not needed. This natural process in the body is referred to as "selective absorption".

Common Sources of Whole Food-Based Nutrients (hint: not from "vitamin-enriched boxed cereals!")

The richest sources of the most potent Vitamin and Mineral supplements come from organic naturally grown vegetables, fruits, seeds of all kinds, nuts, some whole grains (avoid gluten), eggs, nutritional yeast, and liver and other organ meats (free range-grass fed, no antibiotics or hormones). Because most people are not getting the proper variety of all these foods, all the more reason for the necessity of using high quality whole food concentrate supplements to supply the body what it needs from these foods (I'm happy to take my supplements, don't make me eat liver)

What Happened to Healthy Food?

When the body is not provided the essential nutrients from these foods in the proper amounts, the degenerative diseases of deficiencies are ultimately the final stages in a long-term depletion of vital nutrients. Many various chronic diseases are eventually likely to develop including: cardiovascular disease, arthritis, liver and kidney disease, diabetes, cancer, osteoporosis, autoimmune diseases, and dementia.

The food industry is largely to blame as a source for many deficiency diseases in their efforts to lower costs and boost profits. By the refining, hybridization and genetic modification of whole grains and other whole foods which remove the vitamin-rich portions; the emphasis on muscle meats over organ meats; methods of food preparation and processing including pasteurization of dairy products, and overcooking which devitalizes enzymes and nutrients; and the shipping and storage of produce that is harvested too early to allow for the full ripeness with highest nutrient density.

Then “Big Ag” comes in with their “modern farming methods” which not only depletes more nutrients out of the foods but also adds toxins by chemical fertilizers, pesticides, water and air pollution, and growing the produce in soils that are “dead”, not mineral-rich. And we hear from “The Authorities” that all we need to do to obtain proper nutrition is to “eat a varied and balanced diet”. I don’t think so.

Studies done in the 80’s and 90’s showed, depending on the specific nutrient, from 40% to 90% deficiencies of all nutrients. Another study way back in the mid 60’s of 120 patients showed only 12% of the people had normal blood serum levels of all the vitamins tested (And older adults from that era thought that Beatlemania was of grave concern!). As a nation, we are severely malnourished. In the past, the word “malnourished” conjured up images of emaciated people in poverty-stricken parts of the world. The new image of “malnourished” is what we now view in every public location, such as a shopping mall. You can currently see that a large percentage of people walking by are obese. And the larger the individual, the more likely that they will be holding a frappuccino piled high with whipped cream. Their diets consist mostly of sugar and starchy carbohydrates devoid of many essential nutrients. By their appearance, they aren’t “starved” by the accepted sense of the word, but they are certainly nutrient starved. This is the “new

malnutrition” and with it comes many degenerative diseases and early death. What’s missing is nutrient-dense whole foods. Do you think that if more people knew that getting adequate levels of Beta-Carotene (found in carrots, squash, dark green vegetables) would reduce heart attack risk by 50%, they would be seen walking through a shopping mall gnawing on a carrot instead of sucking a frappuccino? You could only hope.

Natural Versus Synthetic

As stated earlier, there are basically two types of nutritional supplements. One is made of vitamin factors, or parts, which are synthesized in a lab or prepared in a “chemically pure” form (free from all naturally occurring associated components). These isolated components are in high concentrations, otherwise referred to as “high potency”. The result is a crystalline-pure chemical that hardly resembles the original intricate vitamin complex. It has even been shown that repeated use of these synthetic, fractionalized supplements can actually create a deficiency of the very vitamin that these substances are supposed to represent. This is the standard way of manufacturing that is employed by pharmaceutical companies and most supplement companies. Unfortunately, most biochemists and nutritionists believe that there is no difference between natural and synthetic vitamins and that the human body cannot distinguish the difference. This is no further from the truth.

In the 1950’s, Ehrenfried E. Pfeiffer, M. D., a German biochemist perfected a method of using chromatography to compare nutrient vitality in soils, foods, and vitamins. A chromatogram is created when two or more substances are exposed to a chemical reagent and a color pattern is displayed on special filter paper. A definite pattern of colors and shape is exhibited for all natural, organic elements of foods and vitamins. The fresher and more natural the substance tested, the more evident its biological and enzymatic activity was displayed by more intricate patterns and more vibrant colors than that of synthesized, inactive, nutritionally denatured foods and vitamins (see examples at the end of this report.)

Completely natural supplements in the form of whole food concentrates are just like nutritious organic whole foods. They exist as extremely complex groups of synergistically associated substances. If this complex

substance is fractionized (taken apart), it becomes a substance incapable of producing its natural, cell nourishing, and metabolic function that it was designed for. It's another reminder of the marvelous creation by God of the incredible and intricate workings of the human body and His creation of all things on the earth that we need for fuel and sustenance to supply these amazingly designed bodies. A synthetic nutraceutical cannot come close to that which only God could create.

Then God said, Behold, I have given you every plant yielding seed that is on the surface of all the earth, and every tree which has fruit yielding seed; it shall be food for you. Genesis 1:29

Nutritional Supplement Companies Generate Billions of Dollars in Profits

Don't believe the hype! Every mailbox is routinely stuffed with letters and magazine-like publications touting various miracle cures of all kinds. These come from marketing companies that are not really nutrition companies. The fact is that only 3% of "nutrition companies" manufacture their own products. 97% of these companies put on a private label, which quite often has incorrect information with false and misleading claims that are created by their marketing people. "A revolutionary newly discovered nutrient from the berry of the Zambambahoo tree that only produces its fruit once every 25 years, discovered in the rain forests deep in the Amazon that unclogs arteries, prevent strokes and heart attacks, headaches, fatigue, and arthritis pain, and not to mention your energy levels will be off the chart!" You can bet any amount of money that contained in the capsules that are in the bottles of these new miracle cures are merely the synthetic, denatured, fractionalized, dead, unnatural substances that hardly represent anything that even comes close to a "Real Vitamin" as nature intended.

Another example is supplements that are sold through "distributors" who are members of multi-level marketing companies (MLMs). Not all products from these types of companies are bad, I've actually recommended a few of them to patients in the past. For the most part, though, their products are mostly synthetic nutraceuticals that are lower in quality and cheaper to manufacture. They have to be, so that a good portion of the sales cost can be passed on to the distributors in the multi-level "downline". The products distributed by these companies are not natural, but they are promoted as such in their hyped-up "ra ra"

meetings. The distributors become convinced that these products are mankind's greatest discovered miracle cure. These high-potency supplements are not natural nutrients but, in essence, like drugs. People who sell these and take these products often feel an immediate energy boost, even euphoria, which is often experienced with high potency fractions. This "high" is a result of the increased heart rate as the body rushes the chemicals through the circulatory system for excretion. This is referred to as the xenobiotic effect. I believe that some of the euphoria comes from what has been called "the green poultice effect" which is the endorphins that are created in the brain when a distributor dreams about how much money they are going to make from recruiting all other distributors to their downline.

"But These Natural Whole Food Concentrates Are So Low in Potency"

Thanks to the majority of vitamin companies who, for decades, have produced and sold the synthetic, denatured supplements, the definition of potency has been twisted to mean weight as measured in milligrams or micrograms. The true definition of potency refers to a substance's power, strength, ability, or capacity to bring about a desired result. "High Potency" vitamins as produced by the synthetic supplement companies are produced this way to achieve a specific, often temporary reaction in the body, that is not necessarily an effective nutritional reaction. Whole food concentrates conversely often show a much lower "potency" weight-wise. This is often misconstrued to mean that they are less effective or biochemically weaker. The difference is that a small amount of a natural vitamin that is kept in its whole food form is tremendously more nutritionally powerful and effective than a chemically fractionized isolate. Therefore only small amounts of natural vitamin complexes with their synergistic components are required.

Synthetic vitamins are often treated by the body as toxins, especially if a person has been taking them for a long time. Through the urinary tract, the human body attempts to rid itself of the major quantity of these foreign unnatural chemicals, especially the water-soluble vitamins. A great example is the fact that when people take synthetic forms of B Complex, they have bright yellow urine. This doesn't happen with a whole food source of B Complex.

Synthetic vitamins have similarities to pharmaceuticals in that they may bring about some degree of improvement in symptoms initially but continuing large amounts eventually causes a reversal that brings adverse effects. In many cases, mega doses result in the same symptoms as many people get from deficiencies of these vitamins. True nutritional supplements help restore biochemical and physiological homeostasis and equilibrium-nothing more, nothing less. This is the definition of optimum health. Taking natural whole food supplements don't typically produce radical positive symptomatic changes initially like the high energy levels that are often experienced with synthetic nutraceuticals. These synthetic supplement effects are often like fireworks that burst with dazzling sparks but quickly burn out. Natural whole food concentrates work gradually to improve healthy physiology and they continue to improve overall health the longer they're taken. Two examples of products that I've personally experienced from Standard Process Labs: Echinacea Premium continues to strengthen my immune system the longer I'm on it; Bacopa Complex continues to keep my brain cognition stronger with continued use.

Natural Versus Synthetic Supplements in Regard to Specific Vitamins

A specific example showing deleterious effects of long term use of artificial vitamins is that of vitamin D. Long term overconsumption of "high potency" synthetic vitamin D has been suspected as being a contributing factor in the development of atherosclerosis and heart disease due to calcifications in both arteries and within the heart.

Whole natural Vitamin E, as found in wheat germ, loses up to 99% of it's potency when separated from it's natural synergists. Vitamin E that comes from a typical nutraceutical company is just basically alpha-tocopherol. That is all that is left when it is isolated in the distillation process. On the other hand, the natural whole Vitamin E complex is surrounded by the protective antioxidant tocopherols and includes Vitamin E2, Vitamin E3, unsaturated fatty acids (F1 and F2), xanthine, lipositol, selenium, coenzyme Q, and more. The importance of proper Vitamin E cannot be overstated. A study reported in the January 1991 issue of The American Journal of Clinical Nutrition showed that a low concentration of Vitamin E in the blood plasma was more of a risk factor for dying from heart disease than elevated cholesterol levels or hypertension. Studies that showed dramatic improvements in

cardiovascular patients from supplementation were carried out using wheat germ oil, a food containing the whole unaltered Vitamin E Complex.

A Comparison of the Components of Natural Vitamin C Versus Unnatural “vitamin”C

Synthetic Nutraceutical: Ascorbic Acid

Whole Food Complex: Ascorbic Acid in its combined and free forms (the combined form, ascorbigen, is the more active of the two and is not present in synthetic versions), bioflavonoids, rutin, vitamin K complex, tyrosinase-containing organic copper, “vitamin J” factors (catechol and Flavin)

This is just one of many examples of all the vitamins showing that a true natural vitamin from whole food concentrates is comprised of several synergistic components that human cells recognize as their real food and source of energy.

Examples of the Whole Food Sources for Two Popular Vitamin Complex Products From Standard Process Labs

Vitamin C (Cataplex C): veal bone protomorphogen extract, bovine adrenal extract, dried buckwheat leaf juice extract, buckwheat seed, nutritional yeast, dried alfalfa (whole plant) juice, alfalfa flour, mushroom, magnesium citrate, bovine bone, defatted wheat germ, calcium acid phosphate, echinacea root, carrot root, veal bone, sunflower lecithin/vitamin E, rice bran, calcium lactate (the most natural and absorbable form of calcium), acerola berry, camu camu berry, and manioc root.

Vitamin B Complex (Cataplex B): bovine liver, beet root, nutritional yeast, porcine duodenum, defatted wheat germ, choline bitartrate, carrot root, sweet potato, rice bran, bovine adrenal, para-aminobenzoate, sunflower lecithin/vitamin E, ascorbic acid, manganese lactate, phosphoric acid, inositol, and riboflavin.

It's important to note that only a whole food source of B complex vitamins contains B4, a little known vitamin in the B complex. B4 has been discovered to be extremely important in promoting the efficient nerve conductivity of the heart and blood vessels and greatly helps in maintaining normal rhythm in the heart. B4 is never found in synthetic

nutraceutical supplements because it cannot be synthesized. Unfortunately the FDA has never recognized vitamin B4 to be necessary in human nutrition. Many holistic practitioners, including myself, who use the Endocardiograph instrument to detect abnormalities in heart valve function, witness dramatic improvements in symptoms and in heart sound graphs of patients after prescribing Cataplex B.

My Own Personal Experience Recommending Standard Process Products To Patients

I have been learning about Standard Process Products and prescribing them to patients since 1978, shortly after graduating from Chiropractic College. I have strayed away from using them a few times during my several years of clinical practice from being influenced by different teachers during my education in Functional Medicine. After many years of going back and forth between using several different supplement companies, I came to a realization. When I recalled all the most dramatic turnarounds in patient's health that I had witnessed and was privileged to be a part of as a practitioner, in every single case it was always when I had used Standard Process products in their treatment protocols. I could write a book about all the positive patient outcomes I experienced that I was involved in as a diagnostician and treating doctor. From autoimmune disorders (Rheumatoid Arthritis, Scleroderma), cardiovascular disease, hormone imbalances including infertility, prevention of miscarriage, prenatal care and childhood illnesses, severe digestive disorders, severe cases of insomnia, lung conditions, severe skin disorders, to simple things like treatments to greatly shorten duration of the common cold. As time has gone by and my successful experiences treating various conditions has increased, my confidence in using Standard Process products has grown tremendously. I feel that there are very few acute and chronic health conditions that can't be helped significantly when the right combinations of supplements are utilized for whatever the time necessary to bring about complete healing.

Some Final Thoughts

Dr. Casimir Funk, who in 1912, was the first to discover vitamins and their deficiency disorders and the man who invented the word "vitamin", wrote: "Synthetic vitamins are highly inferior to vitamins from natural sources, also, the synthetic product is well known to be far more toxic."

A magazine article years ago stated that: “many people would appreciate a division of all foods into the two categories that really matter: (1) things that you want to eat now, and (2) things you’ll wish in thirty years you had eaten instead.”

Sources

The Real Truth About Vitamins and Anti-oxidants by Judith A. DeCava, CNC, LNC

Nutrition and Physical Degeneration by Weston A. Price, DDS

From Soil to Supplement: A Course in Food, Diet, and Nutrition-Taught by Dr. Royal Lee by Royal Lee, DDS and Mark Anderson

Conversations In Nutrition by Dr. Royal Lee, DDS, and John Courtney

The Pharmaceutical Myth by Gerald Roliz, CNC

The Clinical Reference Guide-Standard Process Labs

Standard Process Labs-Health Care Professional’s Product Guide

Celebrating 75 Years-The History of Standard Process Inc. 1929-2004

Chromatograms of Synthetic Vs. Whole Food Sourced Supplements



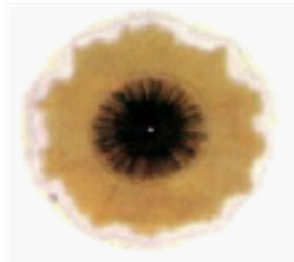
Commercial Vitamin C (ascorbic acid)

Typical color and rings of ascorbic acid – no biological activity.



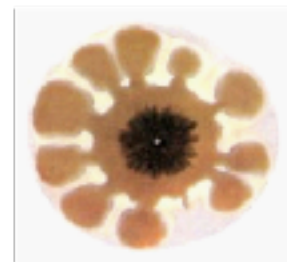
Whole food sourced natural Vitamin C

Jagged border and strong radiations, indicative of natural factors and vitamin and mineral activity.



Alpha – tocopherol commercial Vitamin E only a part of complete E complex.

Intrinsic factors cannot show up because of refined state.



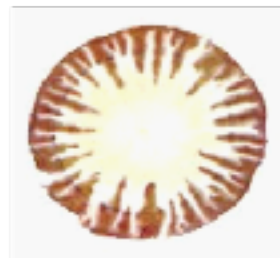
Wheat Germ Oil unheated – excellent source of Vitamin E

In addition to Alpha-Tocopherol fatty Acids and enzymes indicated.



Synthetic Vitamin B complex

No spike like enzyme formations.



Natural "B" complex

Thin outer rim, long jagged teeth indicate intrinsic factors, good protein & enzyme activity