



Everything Your Body Needs

OPTIMIZED SUPERFOOD MEAL REPLACEMENT FOR MAXIMUM DAILY NUTRITION

## User's Guide

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## What is *Living Fuel Rx*?

*Living Fuel Rx* is a complete foundational food. It is a whole, raw, optimized super-food meal replacement for all blood types and all metabolic types. *Living Fuel Rx* provides **complete building blocks and fuel for every cell** of your body and brain in a nutrient-dense, restricted-calorie format. Most people, including professional athletes, find that they can thrive on one serving of *Living Fuel Rx* for three to six hours, depending on their activity level. Some athletes or strong protein metabolic types, who generally require heavier proteins and fats, do even better by adding raw organic eggs and/or coconut to their *Living Fuel Rx* in addition to eating another heavy protein source.

Each serving of *Living Fuel Rx* has more calcium than milk, more potassium than bananas, more fiber than oatmeal, more friendly bacteria (probiotics) than yogurt, more protein than half a dozen egg whites, and more greens, co-factors, vitamins, minerals, antioxidants, and other phytonutrients than a basket of fruits and vegetables, plus omega-3 essential fatty acids and selected herbs (see *Nutritional Information*).

*Living Fuel Rx* contains virtually **every known nutrient**. It is designed to be a **completely balanced** and **hypoallergenic, low-caloric, low-glycemic, and high-antioxidant** food. It is a blend of the earth's most potent organic, wildcrafted, and all-natural foods that have been optimized with the most bio-available and usable nutrients and co-factors in existence, including the following:

- Stabilized probiotics for healthy intestinal function
- Herbs to enhance major body systems
- Antioxidants to protect against free radical damage
- Vitamins and minerals to optimize the naturally occurring vitamin and mineral profiles of foods
- Amino acids to optimize the naturally occurring amino acid profiles of plant proteins
- Custom enzyme complex to maximize the delivery of nutrients

*Living Fuel Rx*'s companion product, **Omega 3 & E—The Ultimate in Essential Fatty Acids** (see *Omega 3 & E—The Perfect Companion to Living Fuel Rx* or visit [www.livingfuel.com](http://www.livingfuel.com) for more information) is the highest-quality and most sophisticated essential fatty acids supplement on the market, taking essential fatty acids to a new level. *Living Fuel Rx* and *Omega 3 & E* are quite possibly the most important foods in existence, as they address the three proven methods of life extension (see *The Four Corners of Optimal Nutrition*).

### LIVING FUEL RX SUPER BERRY

If you desire the level of nutrition only available from *Living Fuel Rx* but don't care for greens or simply desire an exciting change of pace, then you'll love *Living Fuel Rx Super Berry™*

*Living Fuel Rx Super Berry* is a nutritious taste sensation. Instead of greens, each serving of this new super-food meal replacement contains over 120 g of whole organic berries, including strawberries, raspberries, blueberries, and cranberries. It's a new taste you're sure to love at the level of nutrition you have come to expect!

**WHY BERRIES?** Berries are nature's powerhouse fruit. They taste great and are densely packed with antioxidants, phytochemicals, and flavonoids. They are also high in fiber and vitamin C, and they are relatively low in sugar, so they won't stimulate insulin swings when eaten in moderation.

Studies show that eating cranberries and blueberries (two of the berries in *Living Fuel Rx Super Berry*) leads to higher levels of a flavonoid called *quercetin* in the blood. **Quercetin is a powerful antioxidant that may protect against cardiovascular disease and possibly cancer.** Also, antioxidant compounds in blueberries, strawberries, sweet cherries, and blackberries may **fight arterial disease by preventing the oxidation of LDL ("bad") cholesterol.**

**THE BERRIES IN LIVING FUEL RX SUPER BERRY.** Different berries contain different levels of nutrients and are more beneficial for certain types of illnesses, which is why we include an assortment of berries in *Living Fuel Rx Super Berry*.

**BLUEBERRIES.** Researchers at the USDA Human Nutrition Center have ranked blueberries No. 1 in antioxidant activity when compared to 40 other fresh fruits and vegetables. They contain vitamins A and C, zinc, potassium, iron, calcium, and magnesium. They are high in fiber and low in calories. Blueberries are associated with numerous health benefits, including **protection against urinary tract infections, cancer, age-related health conditions, and brain damage from strokes.**

**STRAWBERRIES.** Coming in second on the USDA Human Nutrition Centers analysis of antioxidant capacity are strawberries. They are also **high in fiber, folic acid, potassium, and manganese, and they contain more vitamin C than any other berry.** Two of the strawberry's main antioxidants are anthocyanins and ellagic acid, phytochemicals that have been shown to fight carcinogens.

**CRANBERRIES.** Most people know that cranberries are useful in treating urinary tract infections. But did you know they also protect against cancer, stroke, and heart disease? **Cranberries are rich in polyphenols, a potent antioxidant.** Researchers have found that cranberries may **inhibit the growth of human breast cancer cells and reduce the risk of gum disease and stomach ulcers.**

**RASPBERRIES.** Rich in **anthocyanins and cancer-fighting phytochemicals**, such as ellagic, coumaric, and ferulic acid, raspberries also contain calcium, fiber, folic acid, and vitamins A, C, and E. Raspberries contain soluble fiber, which has been shown to **lower cholesterol.** Raspberries have also been found to protect against esophageal cancer and other cancers.

**GREAT TASTE AND GREAT NUTRITION.** *Living Fuel Rx Super Berry* has the same concentrated sources of vitamins, minerals, proteins, essential fats, enzymes, co-enzymes, herbs, botanical extracts, and soluble plant fibers as the original *Living*

*Fuel Rx* plus the added nutrition and great taste of organic blueberries, cranberries, strawberries, and raspberries.

*Living Fuel Rx Super Berry* is the ideal way to begin your *Living Fuel Rx* eating plan. As your tastes adjust, you can gradually combine some original *Living Fuel Rx Super Greens* to the *Living Fuel Rx Super Berry*. Experiment with what works best for you. Some people stick with the *Super Berry* formula or a combination of berries and greens, while others eventually transition to drinking only the original *Living Fuel Rx*. Either way, you'll be giving your body the nutrition and good health it deserves.

## **LIVING FUEL RX OVERVIEW**

### **Living Fuel Rx Is:**

- Hypo-allergenic
- Energy producing
- Endurance enhancing
- Strength building
- Weight optimizing
- Anti-aging
- Pleasant tasting
- Organic, wildcrafted, and all natural
- Complete balanced nutrition
- Enzymatically alive
- Filled with potent antioxidants and herbs
- A complete protein complex including 10 essential amino acids, precursors, and enzymes
- A powerful detoxifier
- Made with super-greens, vegetables, and fiber
- Enhanced with essential fatty acids (ALAs)
- Ideal for vegetarians
- A replacement for supplements and food
- Able to satisfy hunger and cravings

### **Living Fuel Rx Has:**

- No GMO
- No irradiation
- No pesticides
- No herbicides
- No sugar
- No soy Protein
- No wheat
- No yeast
- No dairy
- No whey
- No egg
- No nuts
- No maltodextrin
- No preservatives
- No fillers
- No artificial flavors
- No artificial colorings
- No hydrogenated oils

**Living Fuel Rx Super Greens has virtually no gluten (<0.2 mg per serving) and is ideal for most people with gluten sensitivities (see *Organic Oat-Soluble Beta-Glucan Fiber*). Living Fuel Rx Super Berry contains NO gluten.**

# Philosophy and Design

## HOW WE DEVELOPED *LIVING FUEL RX*

*Living Fuel Rx* was created to feed the needs of every cell and organ in the body. Despite the abundance of food today, **people are simply not meeting their nutritional needs**. Consider the stunning prevalence of such diseases as cancer, heart disease, diabetes, and autoimmune disorders. Extensive research clearly links such conditions to poor nutrition; indeed, science shows us that these factors are key elements in disease development. Poor nutrition is further complicated by such related issues as constant exposure to toxic chemicals and our high-speed, high-stress lifestyle. **To deny nutrition's profound effect on our lives is sheer folly.**

To counter our poor nutritional habits, many companies have developed nutritional drinks that vastly improve nutritional intake. However, **these drinks lack many vital nutritional elements** and even **contain ingredients that are toxic** to the body. One way to make up for the deficiencies in most nutritional drinks is to make use of the vast array of nutritional supplements now available. These supplements do much to extend the nutritional coverage of common nutritional drinks, but this cumbersome method of ingesting a drink along with an array of supplements is unappealing to most people. This is where *Living Fuel Rx* comes in.

*Living Fuel Rx* provides the positive aspects of a traditional nutritional drink (including green drinks and meal replacements) as well as a complete array of essential macro and micro nutrients—all in one product. **Complete coverage of the body's essential needs while avoiding (and countering) toxic substances**—this is a foundational principal of *Living Fuel Rx*.

We sought to create a drink that would **appeal to a much wider population** and that would **address a much greater range of nutritional requirements**. At the same time we wanted to address the excessive toxic chemicals in our food supply and environment. This meant, for example, that the foods in *Living Fuel Rx* would be **grown organically** (if available) and **without the use of genetically modified organisms (GMOs)**.

Our underlying premise is that **health begins with the consumption of organic/non-GMO, nutrient-rich whole foods** (which actually account for 84% of *Living Fuel Rx* by weight!). Ideally these foods would be in the category of **superfoods**—foods with a high proportion of essential nutrients, yet low in toxic chemicals, anti-nutrients, sugar, and high-glycemic carbohydrates. Recent research and clinical studies clearly show the health benefits of a diet relatively high in protein, low in simple carbohydrates, and sufficient in essential fatty acids and medium-chain triglycerides is a very healthful diet. We have not yet included medium-chain triglycerides in *Living Fuel Rx* (but we are working on it), and this is why we suggest that you combine your servings of *Living Fuel Rx* with either **fresh or shredded coconut or coconut oil**. Since most people find it difficult to discern what makes a coconut oil good or bad, *Living Fuel Rx* will soon be making recommendations and providing links to the highest-quality coconut oils and a

combination of finely powdered organic coconut and organic chia seeds called **Cocochia** at [www.livingfuel.com](http://www.livingfuel.com).

From day one we have considered a number of factors in designing *Living Fuel Rx*: **quality, taste, completeness, usability, cost, volume, shelf-life, and safety.** *Living Fuel Rx* has been meticulously created to be of the highest quality (using **organic, non-GMO, wildcrafted, and all-natural sources**). We have also made **taste a very important consideration**—after all, if it doesn't taste good, few people will take it regularly. We designed *Living Fuel Rx* so that, when it is mixed with water, most people will find it to taste neutral to slightly sweet. Some people are extremely sensitive to the taste of greens and prefer *Living Fuel Rx Super Berry* or to use one of the **many recipes we provide**. Finally, we made sure that ***Living Fuel Rx* is convenient to use**, an important factor to busy people.

We have worked very hard to make *Living Fuel Rx* as nutritionally complete as possible so that a **person could actually live on the product for extended periods of time if not indefinitely.** We considered the question of safety in selecting every ingredient in *Living Fuel Rx*. By including oxygen and moisture absorbers and by producing the product in small batches, we have **extended its shelf-life.** Because of our desire for completeness, product volume is relatively large but not excessive. Interestingly, cost was the least important design element. In fact, we are amazed at the amount of nutrition one gets from *Living Fuel Rx* for a **meal replacement cost of about \$5.50 for Super Greens and \$6.50 for Super Berry.** If you bought the ingredients separately, **it would likely cost as much as \$15 to make a meal that contained all the ingredients of *Living Fuel Rx*.**

## THE FOUR CORNERS OF OPTIMAL NUTRITION

The best method for avoiding the dire consequences of poor nutrition is to apply the well-researched principles of what we call the **four corners of optimal nutrition—CRON (calorie restriction with optimal nutrition), a low-glycemic diet, a high-antioxidant diet, and the use of protected pure fish oil and critical fats.** *Living Fuel Rx* **directly addresses each of these Four Corners.**

Most of us think that monitoring nutrition involves tracking calories. While calorie-counting is a component of optimal nutrition, **calories are a poor measure when determining which kinds and what amounts of food to eat.** Consider what a calorie is: a unit of energy. Metabolism is a highly complex process, and judging foods simply by counting the number of calories they contain does not account for how much energy is used to digest the food, how much of the food is used in the constantly ongoing bodily processes of breakdown and rebuilding, food quality (and the amount of food that remains undigested and is subsequently excreted), or how the digestive process may be compromised.

Optimal nutrition requires that we **focus not on calories but on balancing the right macro nutrients (proteins, fats, and low-glycemic carbohydrates) and achieving maximum nutrient density to cover the body's most basic requirements.** Optimal nutrition also demands that we ingest foods that produce a low glycemic response, which involves avoiding sugars and other foodstuffs that

result in blood-sugar spikes and choosing foods that minimize the insulin response. The effects of insulin on the body and the role of insulin regulation are crucial to an understanding of the four corners of optimal nutrition.

**IMPORTANCE OF THE INSULIN RESPONSE.** We all know that insulin is involved in regulating blood sugar levels. But insulin's role in living creatures is much greater than that, even pivotal.

One of insulin's primary roles is the **storage of excess nutrients**. Since the time of Adam and Eve, human beings have lived through dramatic periods of feast and famine. We would not exist as a species if we hadn't been able to store the excess energy gathered in times of plenty. Our ancestors, like ourselves, could do just this because our bodies increase the amount of insulin in response to elevations in energy. The release of insulin—in other words, the signal that the body has more than enough sugar—triggers your body's storage mechanism, which takes the sugar and stores it, mostly as the saturated fat palmitic acid, triglycerides, and cholesterol.

A diet high in complex carbohydrates—such as the standard American diet—is essentially a high-sugar diet because **high-glycemic foods convert so quickly to sugar that the body does not know the difference**. Our bodies naturally react to such a diet by storing much of it as saturated fat.

Another role of insulin is **storing magnesium**. But high levels of insulin cause the body's cells to develop resistance to this magnesium. Thus, high insulin levels lead to an ironically lower level of bodily magnesium, which is excreted in urine when resistant cells cannot use it. This loss of magnesium causes blood vessels to constrict and blood pressure to increase. Even more importantly, energy is lost because **magnesium is critical to all energy-producing reactions within cells**.

This concept of increased insulin leading to increased insulin resistance is important. In fact, it is not going to far to say that **insulin resistance and the associated state of hyperinsulinemia are largely responsible for what are considered the chronic diseases of aging**. Any diet aimed at improving and prolonging our lives must thus address insulin regulation with the goal of decreasing insulin resistance or, to state it in a positive way, increase insulin sensitivity.

The four corners of optimal nutrition all revolve around the CRON concept—**eating fewer calories extends life, delays disease, and promotes health**. Scientists agree on this, though various camps have arisen to explain the success of CRON. Some scientists think that CRON works because fewer calories equal lower glycemic effect, regardless of the type of food eaten. Others maintain that high-antioxidant diets, or low oxidative stress, is why CRON works because of the well-known aging effects of oxidation. The four corners encompass and synthesize these data into a coherent whole, adding the related and well-known benefits of fish oil and “critical fat.”

**Let's look at each of the four corners and their benefits to the human body.**

**CRON.** Food both keeps us alive and kills us. **Eating is the biggest stress we put on our body.** Caloric restriction is the only proven way of actually reducing the rate of aging—not just the mortality rate but the actual rate of aging.

Over 2,000 medical studies support the conclusion that **CRON diets can increase lifespan by as much as 30%–50%.**<sup>1</sup> That's an astounding fact. Apply these percentages to the human life span: 30%–50% would mean living between 120 and 150 years! **CRON diets have been shown to greatly enhance life span in every species in which CRON has been studied.**<sup>2</sup>

CRON is the most researched method of life extension and delaying the onset of disease<sup>3</sup>—but why does it work? Compelling research that is just being released suggest that the primary mechanism for the success of CRON-based diets may be **controlled insulin response.**<sup>4, 5, 6</sup> When you consider the foregoing discussion of insulin, it is easy to see how such a mechanism can so profoundly improve life span and quality.

**LOW-GLYCEMIC DIET.** We all need carbohydrates, but we are consuming far too many. The body's storage capacity for carbohydrates is quite limited. Excess carbohydrates are converted, via insulin, into cholesterol and saturated fat and stored in the adipose (or “fatty”) tissue.

Any meal or snack high in carbohydrates causes blood glucose to rise rapidly. To compensate, the pancreas secretes insulin into the blood stream, which lowers the glucose. You remember how insulin is essentially a storage hormone? **Insulin stores the excess calories from carbohydrates in the form of fat.**

High insulin levels glucagons and growth hormones, which burn fat and sugar and promote muscle development. Thus, **insulin from excess carbohydrates promotes fat and wards off the body's ability to lose that fat.**

Excess weight and obesity lead to heart disease and many other diseases. Furthermore, grains and sugars suppress the immune system, contribute to allergies, and underlie a host of digestive disorders. **High-glycemic foods contribute to depression and are associated with many of the chronic diseases that currently plague us, such as cancer and diabetes.**

**HIGH-ANTIOXIDANT DIET.** Antioxidants are important in that they **prevent damage from free radicals.** To understand how free radicals are harmful, we must understand how free radicals affect cells.

The human body is composed of many types of cells, which are themselves composed of many types of molecules. Molecules consist of one or more atoms of one or more elements joined by chemical bonds. At the atomic level, chemical activity is rooted in the complex interactions of electrons. Certain types of bonds between electrons give rise to free radicals, which are very unstable and react quickly with other compounds. Generally, free radicals attack stable molecules, “stealing” their electrons. When a molecule loses its electron in this way, it becomes a free radical itself, beginning a chain reaction. This process can cascade, resulting in the **disruption of living cells.**

Some free radicals are normal, such as those used by the body's immune system to neutralize viruses and bacteria. However, environmental factors such as pollution, radiation, cigarette smoke, and herbicides can also spawn free radicals. **Damage results when antioxidants are unavailable or when free-radical production is excessive.**

Antioxidants neutralize free radicals. In essence, **antioxidants act as scavengers**, helping to prevent cell and tissue damage that could lead to cellular damage and disease.

**Low oxidative stress and high-antioxidant diets have been shown to have extend life and delay the onset of disease.**<sup>7</sup>

**PURE FISH OILS (ESSENTIAL FATS) AND CRITICAL FATS.** Fish oil (essential fatty acids) that is free of toxins and has been protected with therapeutic doses of full-spectrum vitamin E and daily use of high-quality organic coconut oil (which we call critical fats) can have profound effects on **extending life, delaying disease, and enhancing performance.**

**Pure fish oil is a nutritional wonder**; not only does it contain high levels of the essential fat omega-3, it contains two critical fats, EPA and DHA, which are **vital to mental and physical health.**

Omega-3 fat benefits the body by increasing insulin sensitivity. We tend to think of circulation as that which flows through arteries and veins; obviously this is the case, but the major part of circulation is what goes in and out of the cell.

Consider the cell membrane, the cell's fluid permeable surrounding. Regardless of what nutrient is delivered to a cell, it will have no effect if it can't get into the cell. Cellular circulation is deeply affected by the intake of fatty acids, which in turn affects the fluidity of the cell membrane. Increasing omega-3 content increases cell-membrane fluidity and hence allows more nutrients to reach the cells.

**The essential fatty acids found in fish oil have also been shown to extend life even in the absence of any other dietary changes.**<sup>8,9</sup>

**Coconut oil, a critical fat**, is unusually rich in short- and medium-chain fatty acids. (Living Fuel coined the term *critical fat* because although coconut oil is not generally considered an essential fat it is critical nonetheless.) The shorter chain length of these fatty acids allows them to be metabolized outside of the carnitine transport system. Medronate, a component of coconut oil, **protects cells against stress** partly by opposing the action of carnitine. Comparative studies showed that added carnitine had the opposite effect, promoting the oxidation of unsaturated fats during stress and increasing oxidative damage to cells.<sup>10</sup>

A look at the composition of *Living Fuel Rx* reveals just how comprehensively this amazing food adheres to the Four Corners concept.

## Composition

Please also refer to Nutritional Information and the Detailed List of Ingredients at the end of this brochure.

**Living Fuel Rx contains the following:**

Food	Nutrient
Brown rice protein ( <i>non-GMO</i> )	Yellow pea protein ( <i>non-GMO</i> )
Organic barley grass	Stabilized brown rice bran ( <i>pesticide-free</i> )
Organic Chia seeds	Organic vegetables
Pure lecithin ( <i>98% oil free</i> )	Organic spirulina
Organic soluble barley fiber	Microencapsulated probiotic cultures
Organic Marshmallow Root	Organic Astragalus
Organic ginger	Organic dandelion root
Standardized milk thistle extract	Ginkgo biloba ( <i>standardized 24/6 extract</i> )
Organic turmeric root	Organic Nova Scotia dulce
L-glutamine, L-lysine, L-aurine	Green tea catechins ( <i>90% polyphenols</i> )
N-acetyl-L-cysteine ( <i>NAC</i> )	Grape seed extract ( <i>&gt;85% OPC</i> )
Glutathione ( <i>reduced</i> )	Quercetin
Coenzyme Q10	Alpha lipoic acid
Complete multivitamin formula ( <i>includes co-enzyme B vitamins</i> )	Complete mineral formula ( <i>includes chelated and trace minerals</i> )
Stevia leaf extract ( <i>decaffeinated</i> )	Organic FOS ( <i>fructo-oligosaccharides</i> )
Mannitol	Natural vanilla extract
Enzymes to enhance nutrient utilization	

**More specifically, each serving of two rounded scoops (69 g) of *Living Fuel Rx Super Greens* contains the following:**

<b>Foods</b>	<b>Amount</b>
Protein from non-GMO brown rice and non-GMO yellow pea proprietary complex	20,000 mg
Stabilized brown rice bran (GMO- and pesticide-free)	7,000 mg
Organic barley grass leaf ( <i>gluten-free</i> )	6,000 mg
Organic Chia seeds ( <i>excellent source of essential fatty acids</i> )	5,000 mg
Proprietary taste-enhancing complex containing xylitol, mannitol, , fructo-oligosaccharides (FOS), natural vanilla extract, and debittered Stevia leaf extract	3,800 mg
Organic low-temperature dried vegetable ( <i>proprietary complex including broccoli, spinach, kale, carrot, and beet root</i> )	2,500 mg
Organic Hawaiian Pacifica spirulina	2,000 mg
Non-GMO lecithin (high phosphatide and 98% oil-free)	2,000 mg
<b>Enzymes (plant source)</b>	
Proprietary enzyme complex (including protease 3.0, 4.5, and 6.0; peptidase; and cellulase, hemicellulase, and pectinase)	20 mg
<b>Probiotics (stabilized)</b>	
Microencapsulated dairy-free probiotics including L-Rhamnosus, L-Acidophilus, and bifidobacteria longum (stabilized at room temperature)	7.5 billion live organisms
<b>Added amino acids (plant source)</b>	
L-glutamine	1,000 mg
L-lysine	300 mg
L-aurine	100 mg
<b>Herbs</b>	
Organic marshmallow root	300 mg
Organic turmeric	100 mg
Organic ginger root	100 mg
Organic dandelion root	100 mg
Organic Astragalus leaf	100 mg
Milk thistle extract (standardized to 80% Silymarin)	100 mg
Ginkgo biloba (standardized Greenwave 24/6 extract)	60 mg
<b>Antioxidants</b>	
N-acetyl-L-cysteine (NAC)	300 mg
Quercetin	100 mg
Green tea catechins (90% polyphenols)	100 mg
Grape seed, skin, and stem extract (>85% OPC)	50 mg
Alpha lipoic acid	50 mg
Glutathione (reduced)	25 mg
Co-enzyme Q10	25 mg
Organic oat-soluble beta glucan fiber	2,000 mg

<b>Added vitamins</b>	<b>Amount</b>	<b>% DV*</b>
Choline (from bitartrate)	500 mg	100
Vitamin C (from buffered Ca/Mg/Zn ascorbates)	500 mg	833
Inositol (pure crystalline)	500 mg	NA
Vitamin E (as d-alpha tocopheryl succinate)	100 IU	333
Vitamin B3 (as niacinamide)	25 mg	125
Vitamin B6 (from coenzyme pyridoxal 5'phosphate)	10 mg	500
Vitamin B5 (Pantothenic acid)	10 mg	100
Vitamin B2 (from coenzyme riboflavin 5'phosphate)	5 mg	294
Vitamin B1 (from coenzyme thiamin diphosphate)	5 mg	334
Beta Carotene (from <i>Dunaliella salinas</i> )	5 mg	167
Lycopene (from tomatoes)	3 mg	NA
Lutein (from Marigold flowers)	1 mg	NA
Folate (as folinic acid from calcium folinate)	0.8 mg	200
Vitamin B-12 (as methylcobalamin)	0.5 mg	8,325
Biotin (pure crystalline)	0.5 mg	170
Vitamin K (as phyloquinone)	0.5 mg	625
Vitamin D3 (as Cholecalciferol)	600 IU	150
<b>Added minerals</b>		
Potassium (from Krebs cycle bionutrients)	396 mg	12
Calcium (from Krebs cycle bionutrients)	350 mg	35
Magnesium (from Krebs cycle bionutrients)	300 mg	75
Trace minerals (from inland sea water)	100 mg	NA
Zinc (from Krebs cycle bionutrients)	15 mg	100
Silica (from horsetail stems)	5 mg	NA
Manganese (from Krebs cycle bionutrients)	5 mg	250
Boron (from citrate/aspartate/glycinate)	2 mg	NA
Copper (from sebacate)	1 mg	25
Chromium (from polynicotinate and arginate)	100 mcg	85
Selenium (from L-selenomethionine)	70 mcg	100
Vanadium (from Krebs cycle bionutrients)	50 mcg	NA
Molybdenum (from Krebs cycle bionutrients)	50 mcg	65
<b>Additional co-factors</b>		
Krebs cycle bionutrients (from magnesium, calcium, potassium, zinc, manganese, vanadium, molybdenum citrates, succinates, alpha-ketoglutarates, umarates, and malates)	3,200 mg	NA

\* %DV = Percentage of the daily value; NA = daily value has not been established.

# The *Living Fuel Rx* Nutritional Program

## CHANGING YOUR LIFE FOR THE BETTER

Our bodies are a **myriad of continuous complex chemical reactions requiring a constant flow of raw materials**. The typical American diet, which consists of pasteurized dairy, grains, sugar, and processed and refined foods, does not provide enough raw materials and even introduces avoidable mutated proteins, fats, and toxins to the body. This combination of providing too few raw materials and too many undesirable substances leads to many health problems and challenges. **The only realistic way to cover the four corners of optimal nutrition is to use *Living Fuel Rx* along with *Omega 3 & E<sup>11</sup>* while avoiding nutritional and lifestyle hazards.**

**FEELING GOOD IS A GREAT MOTIVATOR.** The *Living Fuel Rx* Nutritional Program (which is one aspect of the *Living Fuel Rx* Lifestyle Program) is **not about replacing foods you love with boring foods**. It is about **replacing destructive foods you love with healthy foods that taste great and are good for you**. People enjoy the variety of foods on this program and do not need to be hungry.

The *Living Fuel Rx* Nutritional Program is designed for today's average person. In fact, the people who gain the tremendous benefits of **increased energy, strength, endurance, and weight loss** are not "perfect" and do not necessarily adopt all the nutritional recommendations at one time. People who generally do not eat well are likely to gain the most from adopting even small pieces of this program. ***The greater the adoption, the greater the benefit.***

A complete and balanced diet is critical to obtaining optimal health. Unfortunately, **the Standard American Diet ("SAD") is high in pasteurized dairy, grains, overt and covert sugars, and processed foods**. SAD is neither complete nor balanced. In addition to all the other health problems associated with SAD, people tend to get in the habit of eating only a handful of unhealthy foods over and over again. They make little attempt to experience other foods. Many of these "preferred" foods become problematic, and some result in **food intolerances and other health consequences** over time. Beyond the health benefits of rotating good foods, your tastes tend to change over time and it is a good idea to regularly try new foods.

**EXPERTS AGREE THAT EVERYONE BENEFITS FROM OUTSTANDING NUTRITION.** The *Living Fuel Rx* Nutritional Program is for people who are serious about **improving their health and performance regardless of their current health status**, from the health-challenged to world-class athletes.

**FOR VEGETARIANS AND NON-VEGETARIANS.** Even if you are a vegetarian, the *Living Fuel Rx* Nutritional Program can work for you. **Many if not most vegetarians do not get enough complete protein**, because a diet composed only of grains and vegetables does not supply adequate amounts of all ten essential amino acids, co-factors, and certain other vital nutrients the body requires (grains, such as soy and corn, are not vegetables and should be avoided by most people). This is particularly true because **most vegetarians think of grains as vegetables and rely largely on**

them as their primary source of nutrition. Most vegetarians would benefit by replacing grains with raw greens and with high-quality (non-grain or soy) plant protein plus essential supplementation. **Living Fuel Rx is ideal because it provides the required protein, essential nutrients, and co-factors.** For meals that do not use *Living Fuel Rx*, vegetarians can supplement their meals with **essential amino acids or brown rice and yellow pea protein powders plus essential nutrients and co-factors.** Organic eggs are also extremely nutritious and are acceptable to many vegetarians.

**OUTSTANDING FOR ATHLETES.** *Living Fuel Rx* provides **building blocks and fuel for strength and endurance athletics.** The combination of optimized plant proteins with virtually every known nutrient, including powerful antioxidants, provides for **maximum performance, sustained energy, and rapid recovery.** *Living Fuel Rx* is currently being used as performance fuel before, during, and after performance by **amateur and professional athletes in tennis, football, basketball, triathlons (including Ironman), and many other sports.** Serious athletes should contact us for more information at [www.livingfuel.com](http://www.livingfuel.com) or [athletics@livingfuel.com](mailto:athletics@livingfuel.com).

**THE KEY: BALANCE, NUTRIENT DENSITY, AND LOW GLYCEMIC RESPONSE.** While you should consider calories in any optimal nutritional program, you also need to be aware of **what the body gets after digestion occurs.** Contrary to popular belief, **it is possible to thrive and even build muscle mass on 800–1500 calories per day without hunger and cravings, even for athletes.**<sup>12</sup> Rather than calorie content, **the most important considerations in optimal nutrition are**

- The **right balance of macro nutrients** (proteins, fats, low-glycemic carbohydrates)
- **Maximum nutrient density** covering the spectrum of the body's requirements
- Eating foods that produce a **low glycemic response** (avoid sugars and things that cause your blood sugar to rise quickly and *minimize* insulin response)
- Taking protected fish oils (essential fatty acids) and coconut oil (critical fats).

The *Living Fuel Rx* program is a low-calorie, nutrient-dense diet that delivers everything the human body needs in a low-glycemic, restricted-calorie form (a *Living Fuel Rx* meal replacement shake contains approximately **250 calories or less.** Living Fuel Rx is the basis of a High Performance CRON diet.

**CRON HAS EXTENDED LIFESPAN IN EVERY SPECIES STUDIED.** As discussed in detail in the earlier section on the Four Corners of Optimal Nutrition, over 2,000 medical studies support the conclusion that CRON diets can increase lifespan by as much as 30-50%.<sup>13</sup> In humans, that would mean living between 120 and 150 years!<sup>14</sup> While no one can guarantee a lifespan of 120 years or beyond, the bottom line realistic goal should be to **expand your vital years to be younger longer, not older longer.** The *Wall Street Journal* even recently ran a front-page article on CRON's life-extension benefits.<sup>15</sup>

CRON is the most researched method of life extension and delaying the onset of disease. Compelling research is now coming out that shows that controlling insulin response may be the primary reason that calorie restriction works (see earlier discussion of the Four Corners). Essential fatty acids found in fish oil have also been shown to extend life where no other dietary changes have been made.

***Living Fuel Rx* and *Omega 3 & E* address all Four Corners of Life Extension.** *Living Fuel Rx* is the most nutritious food in existence, yet it is low in calories (250 calories or less per meal). It has a low glycemic response and therefore does not disrupt insulin levels and *is high in antioxidants (high ORAC)*. Additionally, *Omega 3 & E* is the highest-quality essential fatty acids supplement on the market today.

**A HIGH-PERFORMANCE CRON DIET.** *Living Fuel Rx* is unique among CRON diets, because unlike fasting and severe calorie restriction, ***Living Fuel Rx* satisfies hunger and cravings.** Combined with its companion product *Omega 3 & E*, *Living Fuel Rx* satisfies every nutritional need of the body. People on the *Living Fuel Rx* Nutritional Program do not experience the body-wasting effect typical of severe calorie restriction, nor does the *Living Fuel Rx* Nutritional Program involve counting calories. *Living Fuel Rx* provides generous amounts of nutrient-dense, high-quality living foods while minimizing or eliminating the intake of damaging foods. For many people, this nutrient density results in **weight optimization, not just weight loss.** In fact, the only people who appear to lose weight on this program are those who need to lose weight. We have seen overweight individuals lose between two and five pounds per week on this program until they achieved their optimal weight. They report **successfully maintaining their new ideal weight** while continuing the program. We have also seen **underweight individuals on the exact same regimen gain weight.** Professional and amateur athletes are using this program to enhance energy, strength, and endurance.

## HOW TO GET STARTED

The following guidelines are designed to give you optimum results on the *Living Fuel Rx* Nutritional Program. Remember, this is not an all-or-nothing program. **Adopt only what you can today.** As you experience results and your motivation increases, you can adopt more lifestyle guidelines that best suit you. For more information regarding *Living Fuel Rx* and the complete *Living Fuel Rx* Lifestyle Program, please visit [www.livingfuel.com](http://www.livingfuel.com).

**DRINK LOTS OF FRESH PURIFIED OR SPRING WATER**<sup>16</sup> (8–12 glasses per day, which can be as much as 1 quart per 50 lbs of body weight per day). **Do not drink distilled water**<sup>17</sup> **or water in cloudy plastic containers.**<sup>18</sup>

Those who drink water exclusively seem to experience the best results; however, occasional drink alternatives can include organic herbal teas (dioxin and caffeine free) served hot or cold, lemon water, or lemonade sweetened with Stevia, Xylitol, or Mannitol. Stevia and Mannitol are excellent natural sweeteners with virtually *no* glycemic index. If you choose a sweet-tasting beverage, it's best to drink it with food. Drinking a sweetened beverage on an empty stomach or without food is not advisable, because in reaction to the sweet taste the human body can make

enzymes in anticipation of food. If the food is not forthcoming, those **enzymes can actually burn fuel and trigger hunger**. This can be largely avoided by using reasonable amounts of the above mentioned sweeteners.

**CHANGE YOUR BREAKFAST, CHANGE YOUR LIFE.** Breakfast is the meal where most people make the biggest nutritional mistakes, ranging from not eating anything to eating sugars, grains, pasteurized dairy products, or fried foods. **Don't let the breakfast food paradigm force you into making poor breakfast choices.** It is nutritionally proper to eat lunch and dinner foods for breakfast (ie, left-over chicken or steak and salad from dinner). **The goal is to get protein, healthy fats, and low-glycemic carbs at every meal.**

**LEARN WAYS TO BALANCE A NEGATIVE WITH A POSITIVE.** Recognize that there are only two reasons why people should eat and at least three reasons why we actually do. The two essential reasons are **Foundation (building blocks) and Fuel**. The third reason why people eat is for **Fun**. Most people are not going to give up eating for fun, so **the trick is to discover those fun foods that are the least destructive to health.** It is also important to learn how to reduce the negative impact some of these fun foods have on the human body. For instance, if you choose to consume a high-starch meal, a sweet dessert, or an alcoholic beverage, then eat high fiber foods like a large dark green salad or other greens or eat quality fats and proteins beforehand or you can get all three by having a *Living Fuel Rx* shake. It is also helpful to drink water with lemon or have vinegar on your salad. All these things help to slow down the pace at which sugar enters your bloodstream, thereby reducing the harmful insulin response from the concentrated sugars.

**HAVE A SNACK STRATEGY AND INVENTORY ON HAND.** Great snack choices are *Living Fuel Rx* Nut Butter (see *Non-Drink Recipes* later in the guide) or a *Living Fuel Rx* shake, berries, salads, above-ground raw vegetables, soft-boiled eggs, raw nuts and seeds (walnuts, almonds, macadamia nuts, brazil nuts, Cocochia, coconuts, chia seeds, pumpkin seeds). Again, **eat organic whenever possible.**

## FOODS TO EAT

**Even if you are not ready to make radical nutritional changes there are four simple things anyone can do to that can dramatically impact your health!** Even if you are not taking *Living Fuel Rx* regularly, you can dramatically improve your health by:

- Eliminating all sweet drinks and stimulants and drinking 8–12 glasses of water per day
- Minimizing all sugars and grains (replace with raw or steamed greens)
- Minimizing pasteurized dairy products
- Taking fish oil combined with full-spectrum vitamin E plus GLA daily (see the later discussion of *Omega 3 & E*)
- Minimizing heat in preparing foods

**EAT A VARIETY OF SALADS, GREEN VEGETABLES, AND BRIGHT-COLORED (ABOVE-GROUND) VEGETABLES.** Some good choices include broccoli, spinach, kale, mustard

greens, collard greens, mixed greens, asparagus, green beans, peppers, cucumbers, Brussels sprouts, barley greens, radishes, and onions. **These vegetables deliver the most nutrition when they are raw, juiced, or slightly steamed, as cooking decreases the nutrient quality.** You will want to make vegetables and *Living Fuel Rx* the foundation of your diet; therefore, consider eating three to four times as many of the above-mentioned vegetables as your protein source at each meal.

**EAT EGGS.** By this we mean eggs from **organically raised free-range or free-roaming hens that are not grain-fed.** Look for **high DHA** on the label. Buying organic eggs is important, because in addition to pesticides and hormones processed or "tricked-chicken" eggs, where farmers trick the chickens into laying more eggs by using lights 24/7, are not as nutritious. A natural free-roaming hen lays approximately 80 eggs per year, whereas a tricked chicken lays over 250 eggs per year. Don't be afraid to add more eggs to your diet. **Eating eggs does not increase blood cholesterol levels.**<sup>19</sup> Additionally, eat only eggs that are raw<sup>20</sup> or have been prepared with low heat, such as soft-boiled, poached, over-easy, or even raw eggs. **If your eggs have been burned, do not eat them, and if they are not organic, do not eat them raw!**

**EAT ORGANIC FOODS WHENEVER POSSIBLE, INCLUDING ORGANIC CHICKEN, ORGANIC TURKEY, AND WILD GAME.** If you are not eating organic foods and grain-free/grass-fed meats and eggs because of their compromised omega 6 to 3 ratios, then it is even more **critical that you take *Living Fuel Rx's* companion product, *Omega 3 & E*,** in doses equivalent to eating a medium-sized piece of fish (see *Omega 3 & E—The Perfect Companion to Living Fuel Rx*).

**EAT FISH (BUT ONLY FISH THAT HAVE BEEN CERTIFIED FREE OF MERCURY).** Testing shows that unsafe mercury levels and other pollutants contaminate most fish, including farm-raised fish<sup>21</sup>; therefore, you may want to minimize your fish intake and take *Living Fuel Rx's* companion product, ***Omega 3 & E*, which is the most sophisticated essential fatty acids supplement** on the market today (see *Omega 3 & E—The Perfect Companion to Living Fuel Rx*). Another option is to take a high-quality fish oil supplement (mercury-free) daily together with a **high-quality full-spectrum vitamin E supplement** to prevent potential oxidation and toxicity within the body. If you choose to eat fish, the fish with higher levels of the essential fats EPA and DHA include Pacific Salmon, Summer Flounder, Tilapia, Haddock, and Sardines. **AVOID commercial farm-raised fish as they are fed pollutants and are virtually devoid of omega-3 EPA/DHA essential fats.**

**EAT OTHER GREAT SOURCES OF PROTEIN.** These include **beef** (grain-free/grass-fed; commercial beef has numerous problems and should be minimized), **bison** (grain free/ grass-fed), **lamb**, and ***Living Fuel Rx*** (vegetarians can use *Living Fuel Rx* instead of meat).

**EAT APPROPRIATE SOUPS, BROTHS, AND STEWS.** These items are also healthy as long as their ingredients are consistent with the above.

## FOODS TO AVOID

**AVOID SUGAR AND THINGS THAT TURN TO SUGAR QUICKLY AFTER EATING.**<sup>22</sup> Such items include all grains, syrups, pasta, potatoes, white rice, oatmeal, breads, and cakes.<sup>23</sup> A good rule when considering these types of carbohydrates is “**If it’s white, it ain’t right.**” This rule is generally accurate, but realize that cauliflower, radishes, onions, and some other foods that are great for you are exceptions to this rule. **Regular consumption of sugar and high-glycemic foods causes chronic hyperinsulinemia, which is the root cause of most diseases of aging.**<sup>24</sup>

**AVOID SNACK FOODS, DESSERTS, MOST FRUITS, SOFT DRINKS,**<sup>25</sup> **SPORTS DRINKS, FRUIT JUICES,**<sup>26</sup> **SWEET DRINKS,**<sup>27</sup> **COFFEE,**<sup>28</sup> **AND ALCOHOLIC BEVERAGES.**<sup>29</sup> **Alcohol is essentially liquid sugar and is extremely high-glycemic, and it adversely raises insulin levels.** If you must have a drink or juice or other “destructive carbohydrate,” then treat each such food or drink as if it were a dessert and govern yourself accordingly. **Avoid all artificial sweeteners.**<sup>30</sup>

**DRASTICALLY MINIMIZE OR AVOID ALL PASTEURIZED DAIRY PRODUCTS.**<sup>31</sup> Only use such foods if you get them raw, right from the farm, prior to the pasteurization process (*eggs are poultry NOT dairy*).

**AVOID UNFERMENTED SOY PRODUCTS.** Soy is not healthy for most people because of its **anti-nutritional properties** (unless it is Non-GMO and fermented soy such as soy sauce, miso, or tempeh); 98% of the soy crop worldwide is genetically modified, which has been shown to have negative health consequences.<sup>32</sup>

**AVOID ALL JUNK FOOD,**<sup>33</sup> **FRENCH FRIES,**<sup>34</sup> **FRIED FOODS,**<sup>35</sup> **PIZZA,**<sup>36</sup> **AND MARGARINE.**<sup>37</sup> Raw organic butter and raw butter from grass-fed cows are very nutritious and are exceptions to the no-dairy rule but minimize all pasteurized dairy products.

**The foods to avoid are the majority of foods that most people eat and by their nature are highly addictive.** This part of the program may require some “won’t power” at first, even though you will not be hungry. However, realize that you will be making better choices and learning new habits. **Most people overcome their unhealthy cravings and food addictions to coffee, dairy, grains, and sugar after only 1–4 weeks on the program.**

Once you start eating the healthy foods, you’ll realize that there are a **tremendous number of possible food combinations.** Remember, eat all you need (of the right foods mentioned above) and **you should be able to thrive on this program without hunger and cravings.**

## THE LIVING FUEL FAST

**The Living Fuel Fast** is for detoxification, regeneration, weight loss (fat loss), and accelerated release from unhealthy cravings. It is designed to **detoxify the body** and more quickly **repair damaged metabolism** by removing the stress of everyday foods and providing everything the body needs to thrive in a nutrient-dense, low-glycemic, restricted-calorie form. It is critical to take *Living Fuel Rx's* companion product, **Omega 3 & E** (see *Omega 3 & E—The Perfect Companion to Living Fuel Rx*), during the fast.

This fast generally results in a **renewed digestive system, weight optimization, relief from unhealthy cravings, and relief from various kinds of symptoms.**

During this fast you should not feel hungry and should be able to carry on your daily activities, including exercise and athletic activities, with a high level of energy. For most people, **the best approach is to build up to the fast by replacing one meal per day, then two, etc.** When you have the experience and confidence that you will not be hungry or tired, then it's time to begin your fast.

To conduct the fast, **have a *Living Fuel Rx* shake for breakfast, lunch, and dinner and as a snack every 3–6 hours.** To extend your energy and the time between shakes, you may want to mix in organic coconut oil or Cocochia—finely ground organic coconut and organic chia seeds (soon to be available at [www.livingfuel.com](http://www.livingfuel.com))—into your shakes, particularly for athletes who are training or competing. **Continue the fast for as many days as you feel comfortable.** Some people only fast for 4 days, while others go up to a month and beyond in cases of serious health conditions (conduct longer fasts under the supervision of your healthcare practitioner). **For a first-time fast, most people find that striving for 4–7 days is ideal.** If you feel the need to have something to chew during the fast, eat raw (or steam) some non-starch, above-ground organic green vegetables or coconut or organic walnuts, almonds, or macadamia nuts.

**Do not allow yourself to get hungry during a fast.** Learn how long a shake lasts before you get hungry and have another shake 15 minutes to 1 half-hour prior to that point (ie, if a shake lasts you 4½ hours before you get hungry, then have another shake in 4 hours and 15 minutes). Have up to 3-4 shakes per day.

This does not happen very often, but **some people find that fasting detoxification causes cold and flu-like symptoms** (which can be a sign of substantial detoxification). These people find it is best to continue the fast until the symptoms subside. **If you are ever concerned about any symptoms, consult your physician.**

## **Omega 3 & E—The Perfect Companion to Living Fuel Rx**

**Omega 3 & E—The Ultimate in Fatty Acids** is the most sophisticated essential fatty acids supplement available today. It is **balanced omega-3 EPA and DHA fatty acids and mixed tocotrienols and tocopherols with GLA**. Most people who eat the Standard American Diet are **dangerously deficient in omega-3 essential fatty acids**. Virtually everyone would benefit from taking *Omega 3 & E* because of its powerful combination of the omega-3 essential fatty acids **EPA and DHA**, which are derived from fish oil, mixed with therapeutic doses of **tocotrienols and tocopherols plus GLA**. In addition to the many health benefits of full-spectrum vitamin E, therapeutic doses of **full-spectrum vitamin E** from rice bran (including tocotrienols and tocopherols) are added to provide **antioxidant protection** to these delicate polyunsaturated oils inside the body.<sup>38</sup> **GLA from cold-pressed borage seed oil** has been added to enhance the production of prostaglandins to increase the anti-inflammatory effect.<sup>39</sup>

### **WHY FISH OIL?**

While a few other foods like flax seeds<sup>40</sup> contain the essential fat omega-3, the most beneficial form containing two fatty acids, **EPA and DHA, can only be found in fish oil**. These fatty acids are essential to fight or prevent both physical and mental disease. The tremendous health benefits of fish oil would best be derived from eating fatty cold-water fish, if there were any that were not contaminated with unsafe levels of mercury and other contaminants.<sup>41</sup> Unfortunately, safe fish are not readily available because of the mass pollution of our waterways. Farmed raised fish are contaminated for different reasons and nonetheless do not have the beneficial fatty acids ratios of cold-water fish.<sup>42</sup>

With the dangerous levels of mercury often present in fish today, *Omega 3 & E* is a safe and effective way to incorporate these essential fats into your diet. The only safe way to get the benefits of these essential omega-3 fatty acids, specifically EPA and DHA, is to **take a purified fish oil together with a full-spectrum vitamin E supplement**. *Omega 3 & E* contains the omega-3 fatty acids EPA and DHA, which are essential to fighting both physical and mental disease.<sup>43</sup> Fish oil has been shown to **increase energy levels; improve concentration; provide greater resistance to life-threatening disease, the common cold, and flu; and assist with ulcers, depression, and hyperactivity**.<sup>44</sup> Fish oil has been clinically shown to significantly extend life and delay the onset of disease where no other dietary changes have been made, and when fish-oil supplementation (*Omega 3 & E*) is combined with calorie restriction or a low-glycemic diet (ie, *Living Fuel Rx*), the results can be even more dramatic.<sup>45</sup>

### **WHY IS OMEGA 3 & E THE BEST CHOICE FOR FISH OIL AND MORE?**

*Omega 3 & E* contains the purest fish oils which, contrary to popular belief, come from sardines and anchovies because these fish feed directly on plankton – at the lower levels of the food chain – and thus are known to contain significantly less

contaminates, such as mercury, in their tissues, than fish such as tuna, cod, and salmon. Next, our fish oils go through a delicate process that includes flash molecular distillation, which purifies the oil and removes any heavy metals, pesticides, and oxidized contaminants that may be in the oil. **Because we wish to retain a totally natural fish oil product, we retain the natural triglyceride form of the oils unlike higher concentration esterified fish oils. Each batch is then rigorously tested to guarantee purity according to AOCS standards. Minimally processed fish oils that remain in their natural triglyceride form must retain some of the original flavor and aroma of the fish from which they came. If not, it means the oils have been over processed.**

It is critical to take a high quality full-spectrum vitamin E every time you take fish oil to protect yourself from potential lipid peroxidation (which is toxic to every cell in the body)<sup>46</sup>. The amounts and form of Vitamin E in commercially available fish oils are **not** sufficient to guard against potential lipid peroxidation within the body.

### **WHY FULL-SPECTRUM VITAMIN E (TOCOTRIENOLS AND TOCOPHEROLS) AND GLA?**

Most commercially available vitamin E is in the d-alpha tocopherol form or dl-alpha tocopherol (synthetic) form and can deliver only a fraction of the benefits of full-spectrum vitamin E. Full-spectrum vitamin E is a critically important phytonutrient. It consists of eight naturally occurring isomers, a family of four tocopherols (alpha, beta, gamma, and delta), and four tocotrienol (alpha, beta, gamma, and delta) homologues. Tocotrienols are in the class of vitamin E compounds along with tocopherols. They consist of a double-ring structure called the **chromanol head** and an **isoprenoid tail** (similar to co-enzyme Q10). Depending on whether the chromanol head has three, two, or one methyl groups attached and where these groups are attached, they are called **alpha, gamma, delta, or beta tocotrienols/tocopherols**. The major difference between the tocotrienols and the tocopherols is that the tail is saturated in the case of the tocopherols but is polyunsaturated in the case of the tocotrienols. As with the fatty acids, a polyunsaturated structure means that **the molecule is more reactive and more fluid**. This means, for example, that alpha tocotrienol would be much more protective of cell membranes than alpha tocopherol and would more easily be regenerated by vitamin C.<sup>47</sup> In fact, research has shown that in cell membranes **alpha tocotrienol is 40–60 times more protective against free radicals than alpha tocopherol**, leading to the conclusion that rice-bran tocotrienols are more potent than tocotrienols from palm oil because of rice bran's higher concentrations of alpha tocotrienols. Other research has shown that **gamma tocotrienol enzymatically blocks the synthesis of cholesterol**. In addition to the above, tocotrienols have the following qualities:

- May reduce arterial plaques and enhance blood flow<sup>48</sup>
- Are potent inhibitors of platelet aggregation and thromboxane<sup>49</sup>
- Protect serum lipids from oxidation, including LDL and HDL<sup>50</sup>
- Reduce carotid stenosis (narrowing) and may help prevent stroke<sup>51</sup>

- Serve as a trap to harmful nitrogenous radicals<sup>52</sup>
- Are anti-proliferative and anti-cancer agents
- Provide powerful oxidative defense for the skin<sup>53</sup>

When EPA is present, **GLA is known to convert into the most anti-inflammatory prostaglandins (prostaglandin-1) and to inhibit the conversion of pro-inflammatory prostaglandins (arachidonic acid).**

## PRODUCT DESCRIPTION

*Omega 3 & E* is a unique product containing eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA)—important usable forms of essential omega-3 fatty acids—as well as mixed tocotrienols and tocopherols (full-spectrum vitamin E). We added to it gamma linolenic acid (GLA), an important essential omega-6 fatty acid that, when combined with EPA, promotes beneficial prostaglandins to enhance the anti-inflammatory response. EPA and DHA are derived from marine lipids using a flash molecular distillation process. The mixed tocotrienols and tocopherols (full-spectrum vitamin E) are derived from rice bran and are included in the soft-gel capsules to provide antioxidant protection to these polyunsaturated oils, both within the bottle and within the body. The GLA is derived from cold-pressed borage seed oil.

**NUTRITIONAL CONSIDERATIONS AND APPLICATIONS.** Omega-3 and omega-6 fatty acids are known to play important roles in the formation of prostaglandins, which are important cellular regulators that control inflammatory processes and pain in the body. Fish oil has been shown to increase energy levels and improve concentration, provide greater resistance to common colds and flu, and assist with ulcers, depression, and hyperactivity. Fish oils may be useful adjuncts in protocols that deal with such conditions as:

- Cardiovascular disease
- Hypertension
- Arthritis and other inflammatory disorders
- Psoriasis and other skin problems
- Diabetes mellitus
- Kidney disease<sup>54</sup>

GLA may be a useful adjunct in protocols that deal with multiple sclerosis and arthritis.<sup>55</sup> Research has indicated that in a balanced formula, EPA, DHA, and GLA act synergistically. For example, it is known that EPA inhibits the conversion of GLA into arachidonic acid, which causes pain and is pro-inflammatory.<sup>56</sup> Because these fatty acids have many double bonds that are prone to oxidation both in the bottle and in the body, we have ensured that *Omega 3 & E* contains a complete range of vitamin E in the form of mixed tocotrienols and tocopherols.

**COMPOSITION.** Each hermetically sealed soft gelatin capsule provide the following percentages of the U.S. Recommended Daily Allowance (U.S. RDA) for adults:

<b>Lipids</b>	<b>Amount</b>	<b>%DV*</b>
EPA (eicosapentaenoic acid)	120.0 mg	NA
DHA (docosahexaenoic acid)	80.0 mg	NA
GLA (gamma linolenic acid)	30.0 mg	NA
<b>Vitamins</b>		
Vitamin E (d-alpha tocopherol)	8.0 IU	27
Mixed tocotrienols (d-gamma, d-alpha, d-delta, and d-beta)	9.6 mg	NA
Mixed tocopherols (d-gamma, d-delta, and d-beta)	1.0 mg	NA

\*%DV = percentage of U.S. RDA; NA = no has been established for this nutrient.

#### Nutritional Information per Serving (1 gel cap)

Calories	8
Protein	<1 g
Carbohydrates	<1 g
Fat	0.9 g
Cholesterol	<1 mg

**DOSAGE.** As a dietary supplement, take one (1) soft gel per 25 lbs of ideal body weight with meals, or as directed by a healthcare professional.

**INGREDIENTS.** Flash molecularly distilled fish oils (mercury-free < 0.01 ppm), rice-bran oil (*Japonica* species), cold-pressed borage seed oil, gelatin, glycerin, and water.

*Omega 3 & E* does not contain wheat, rye, oats, corn, barley, gluten, sugar, wax, egg, yeast, sulfates, chlorides, phosphates, preservatives, casein, or any other milk derivatives.

## Related Materials

### FAQs (FREQUENTLY ASKED QUESTIONS)

#### ► HOW DOES *LIVING FUEL RX* TASTE?

This is the most frequently asked question regarding *Living Fuel Rx*. Most people find it hard to imagine that ***Living Fuel Rx Super Greens*** could actually taste good, especially when you consider the unequaled level of super-greens, vegetables, Krebs-cycle bionutrients, botanical extracts, and other strong-tasting nutrients in each serving. *Most people seem to like Super Berry with only water.* Nevertheless, whether you mix it with just water or come up with your favorite ***Living Fuel Rx*** recipe, you will love the way it tastes and particularly love the way it makes you feel.

When you mix ***Living Fuel Rx Super Greens*** with only water it looks like freshly juiced greens or drinks made from barley grass or wheat grass, but it does not have the strong greens taste typically associated with green drinks. Some people take a few days to grow accustomed to its flavor. People have described the taste of ***Living Fuel Rx*** with water as everything from awesome to awful, yet even those who initially did not like the taste but continued to take it have grown to love it. **There is a recipe that you will enjoy.**

When you first begin taking ***Living Fuel Rx Super Greens*** you may wish to start by mixing a half serving until you find the right recipe for you. **Due to the adverse effect of most juices on blood sugar and insulin levels, we do not recommend that anyone drink high-glycemic juices by themselves, even if freshly squeezed.** However, ***Living Fuel Rx*** is counter-glycemic by design, meaning it slows down the uptake of sugar into the bloodstream. *Super Greens* has a nearly **2:1 protein-to-carbohydrate ratio and a 2:1 carbohydrate-to-fiber ratio.** Plus it has numerous nutrients that support the stabilization of blood sugar levels. Therefore, you can mix in small amounts of any kind of juice or fruit and still not raise blood sugar levels significantly. If you want improve the taste of your ***Living Fuel Rx*** to taste better you may want to start with *Living Fuel Rx Super Berry* or at least mix *Super Greens* with *Super Berry*, or you could:

- Add a touch of **lemon juice** or 1–2 ounces of **lemonade** (best if sweetened with natural low-glycemic sweeteners like Stevia, Mannitol, Xylitol, or brown rice sweetener or cactus sweetener, instead of sugar), or
- Add 1–3 ounces of **orange juice** or **grapefruit juice** (most people like pink grapefruit juice best)

It is also extremely healthy and energy-enhancing to add 1–2 tablespoons of coconut oil or finely ground coconut and extra chia seeds to your shake, especially for athletes or highly active people or Protein Metabolic Types. Most people enjoy chia seeds—the incredibly nutritious tiny whole seeds found in ***Living Fuel Rx***. However, some people, usually children, prefer to have the ***Living Fuel Rx*** powder put into a coffee bean grinder to grind up the seeds before mixing a shake or even to have their shakes poured through a strainer to remove the seeds. It is nutritionally best to leave the seeds in; if you choose to strain out the chia seeds, it is even more

important to supplement your diet with **Living Fuel Rx's** companion product, **Omega 3 & E—The Ultimate in Essential Fatty Acids**. For more information on chia seeds (see *Organic Chia Seeds* under *Detailed List of Ingredients* or *Omega 3 & E—The Perfect Companion to Living Fuel Rx* or go to [www.livingfuel.com](http://www.livingfuel.com).

Many fruit and vegetable juices work great with **Living Fuel Rx** (fresh juiced or squeezed is best). Citrus or tomato juice seems to be most people's favorite, and lemon juice and lemonade sweetened with low-glycemic natural sweeteners are some of the healthiest choices. **Be careful how much sugar you add to your shake through the various juice and fruit options, as sugar is unhealthy and should be reduced or eliminated over time.**

#### ► **WHAT IF I'M CONCERNED ABOUT THE TASTE, TEXTURE, OR COLOR OF LIVING FUEL RX?**

One option is to start with Living Fuel Rx Super Berry and add in Super Greens over time. Keep in mind that **Living Fuel Rx** is likely to be the most nutritious meal you have ever had. Experiment with different recipes until you find the ones you like. Even people who initially did not like the taste, texture, or color of **Living Fuel Rx** end up loving it once they find the right recipes for them.

For taste concerns, try Living Fuel Rx Super Berry or the above-mentioned recipes and begin with smaller doses. For texture, mix your shake in a high-speed blender and use more or less water until you achieve the desired thickness. **Living Fuel Rx** Super Greens has a vibrant green color much like juiced greens when mixed with water, and some people find it difficult to drink something that is green. If the green color is a concern for you, drink your shake from a sipper cup or a cup with a lid and straw. You can also change the color of your **Living Fuel Rx** shake by mixing it with Living Fuel Rx Super Berry or a strong-colored juice or berries like tomatoes, grape juice, or blueberries. Finally, try the non-shake recipes, like **Avocado Supreme** or **Fuel Nut Butter**, or add **Living Fuel Rx** to cold or warm soups (not hot, as high temperatures degrade probiotics and enzymes).

#### ► **CAN I USE LIVING FUEL RX WHEN I AM PREGNANT OR NURSING?**

My wife took six scoops of **Living Fuel Rx** per day plus six **Omega 3 & E** gel caps and ate three regular meals from conception through nursing. **Living Fuel Rx** was also our baby's first food other than mother's milk. We also feed **Living Fuel Rx** to all four of our children every day. Please remember that when pregnant or nursing you are eating for two, so take eating very seriously. **Living Fuel Rx** may not be a sufficient source of iron for pregnancy. Consult a qualified health practitioner when making major nutritional changes during pregnancy.

#### ► **HOW DO I GET MY KIDS TO TAKE LIVING FUEL RX?**

Start your kids on **Living Fuel Rx Super Berry** or try some of the ideas discussed above. I have found that with my own children and many others, **it just takes a little time and a little incentive** to get them used to **Super Greens** but it is much easier with **Super Berry**. Incentives can be an activity they enjoy, toys, money, or—as a last resort—even a very small piece of a treat they love. It is also critical to make their first shake taste good by using less **Living Fuel Rx** (sometimes token

doses), more juice, and/or more fruit than you should at first; then increase the Fuel and wean away from the juices and fruit over time. Some people like to use grape juice or blueberries to alter the color from green. Also, the soup recipes and the **Fuel Nut Butter** recipes work well with kids. It is also important to reinforce the great behavior with **praise and compliments**. I have seen many people, from 6-month-old babies to teenagers to the elderly, who hated **Living Fuel Rx** at first and are now regular users. It is also critical for kids and adults alike to take **Living Fuel Rx's** companion product, **Omega 3 & E**.

### ► WHAT ABOUT HUNGER?

If you get hungry within a couple of hours of taking a full serving of **Living Fuel Rx**, it is likely that (1) you are an **athlete or Strong Protein Metabolic Type** who may benefit from adding a 1-2 of tablespoons of **coconut oil or finely ground coconut** or **one or two raw organic eggs (or eat eggs separately)** or both to the **Living Fuel Rx**; or (2) your hunger pangs may be **due to thirst** or **because you have been conditioned to eat at certain times**. Try drinking a large glass of fresh water when you feel hunger coming on, or try the option described in item 1 above.

### LIVING FUEL RX DRINK RECIPES

**Use a high-speed blender for maximum smoothness. Hand mixers or shakers also work well if you are not adding fruit.**

Some people like using **almond, rice, or oat beverages** in their shakes; however, most believe that **Living Fuel Rx** lends itself more to fruit or vegetable juices.

#### BASIC RECIPE

For a complete and balanced meal, the basic recipe is to mix **one serving (two scoops) of Living Fuel Rx** with at least **16 ounces of water or lemon water**.

#### LIVING FUEL RX FRUIT SMOOTHIE

Mix the shake as described above particularly Super Berry in the basic recipe and then **add some fresh or frozen berries and/or a third to a half of a banana and a small amount of crushed ice**. Blend the ingredients into your drink (try not to make it too cold, as very cold drinks compromise digestion).

#### LIVING FUEL RX VEGETABLE SMOOTHIE

**Mix 2–3 ounces of fresh vegetable juice** (eg, tomato juice) with **Super Greens** and water to desired thickness.

#### LIVING FUEL RX PICK-ME-UP (EXCELLENT WHEN YOU DO NOT FEEL WELL)

Mix 2–3 ounces of your favorite vegetable or fruit juice with two scoops of **Living Fuel Rx** plus water in a high-speed blender. Add one to three cloves of fresh garlic or hot peppers plus 1–2 tablespoons of coconut oil and add lemon to smooth the taste. The coconut and lemon tend to hide the garlic.

#### CHILDREN'S FAVORITE RECIPE

Most kids prefer Super Berry both but either works. For a delicious treat add a splash of orange juice, a splash of apple juice, a splash of almond or rice beverage, and perhaps a few berries to the **Living Fuel Rx** shake.

## NON-DRINK RECIPES

### **LIVING FUEL RX AVOCADO SUPREME RECIPE**

Mix one scoop of *Living Fuel Rx* with one large ripe avocado, one whole tomato, one-half chopped onion, one tablespoon olive oil, juice from one whole lemon, plus pepper, salt, Tabasco, and other seasonings to taste. Mash the avocado and mix in the above ingredients. Chill and serve with almond crackers or other healthy equivalents, or eat it alone as a complete and balanced meal or snack.

### **LIVING FUEL RX NUT BUTTER DELIGHT (ALSO GOOD AS AN ATHLETIC FOOD)**

This is a snack and an athletic fuel. Mix one scoop of *Living Fuel Rx* with enough coconut oil or water to make it soupy. Mix in two or three tablespoons of almond butter. Mix in brown rice syrup or cactus sweetener (very low glycemic indexes) to taste. It is also tasty to mash a banana into the mix, but note that it will require much less brown rice syrup or cactus because of the sugar content of the banana. Add two or three tablespoons of mixed finely organic ground coconut or one to two tablespoons of coconut oil and chia seeds. Eat with a spoon or as a raw veggie dip. This recipe is a tasty treat and is also the base formula we use for athletes. Because organic coconut and chia seeds are so hard to find, we plan to make them available premixed at [www.livingfuel.com](http://www.livingfuel.com) and called Cocochia. For more information on *Living Fuel Rx* for athletics go to [www.livngfuel.com](http://www.livngfuel.com) or send an e-mail to [athletics@livingfuel.com](mailto:athletics@livingfuel.com).

## Soups

Mix *Living Fuel Rx* into cold or warm soups (do no use hot soups as heat degrades probiotics and enzymes).

Be creative by adding additional healthy ingredients to your serving of **Living Fuel Rx**. **Make the effort to find a recipe that works for you because Living Fuel Rx is the optimum way to achieve this level of nutrition in a single meal. And remember, some of the best things in life are acquired tastes.** Discover what works for you and your family by trying various juices, fruits, and almond, rice, or oat beverages.

Please e-mail us your favorite recipes or questions to [info@livingfuel.com](mailto:info@livingfuel.com) or for more information go to [www.livingfuel.com](http://www.livingfuel.com).

## DETAILED LIST OF INGREDIENTS OF *LIVING FUEL RX SUPER GREENS* AND HOW *LIVING FUEL SUPER BERRY* IS DIFFERENT

**BROWN RICE PROTEIN (ENZYMATICALLY EXTRACTED, NON-GENETICALLY MODIFIED (NON-GMO)).** The rice protein in *Living Fuel Rx* is extracted using a proprietary enzyme process starting from California-grown non-GMO rice. Our rice protein is processed **without the use of acids, bases, or other chemicals**. In addition, the **protein content of the extracted product is over 70%**. That is substantially higher than other extraction methods (<53%), which leave a much higher percentage of carbohydrate in the end product.

The protein of brown rice contains all of the essential amino acids, but it is somewhat low in the amino acid lysine. The pea protein described below tends to have plenty of lysine, but it is somewhat low in methionine and cysteine, which the rice protein has in abundance. Thus, the combination of these two protein sources provides a **more complete protein profile**. We have also added specific amino acids to further enhance the amino acid profile (see *Additional Amino Acids [Plant Source]*).

**PEA PROTEIN (MECHANICALLY EXTRACTED, NON-GMO).** The pea protein powder used in *Living Fuel Rx* contains **over 82% protein** and is a concentrated natural protein fraction of yellow peas with a low level of denaturation and very high solubility. It is a non-GMO protein.

The amino acid profile of pea protein is good and complementary to that of brown rice protein (see above discussion). The methods used to extract the pea protein used in *Living Fuel Rx* are strictly mechanical—**no harsh chemicals are used in the process**. Furthermore, all of the anti-nutritional factors that may be found in high levels in protein sources such as soy are extremely low in pea protein. In fact, pea protein is now being used to produce infant formulas.

**STABILIZED BROWN RICE BRAN (PESTICIDE-FREE).** Our producer of the stabilized brown rice bran in *Living Fuel Rx* has created a process that reliably **inactivates the lipase in rice bran while retaining the rest of the food's chemistry**. This is done with a mechanical extrusion process that forces the grain to deform as it squeezes through small openings in a metal die. The high rate of deformation during extrusion causes just the right amount of internal heating for the precise amount of time needed to inactivate the lipase.

The process requires careful control of a number of other variables, and some of the processes involved are proprietary trade secrets. The result is a stabilized rice bran product that retains most of the vital nutrients of fresh rice bran but has a **shelf-life measured in years rather than hours**.

Analysis of the rice bran in *Living Fuel Rx* has shown the presence of over 75 nutrients. Some of the key nutritional elements are:

- [Gamma oryzanol, beta sitosterol ferluate, and five other related compounds.](#) These are potent antioxidants and trace nutrients that play a vital role in many

- aspects of human physiology. Gamma oryzanol is found only in rice bran and has been used successfully in dealing with female hormone imbalances.
- Tocopherols and tocotrienols. These include all of the eight known forms of vitamin E, including d-alpha tocopherol. The importance of the other forms is probably at least equal to that of the alpha form.
  - Polyphenols including ferulic acid, alpha-lipoic acid, and four others. Lipoic acid is important to sugar metabolism at the cellular level and is a powerful antioxidant. Ferulic acid is a powerful antioxidant as well.
  - The important minerals magnesium, calcium, and phosphorous, as well as manganese and other trace minerals. Minerals are involved in all of the enzyme functions of the body, including energy production.
  - Phytosterols, including beta sitosterol, campesterol, stigmasterol, and at least 11 more. Phytosterols have been shown to prevent the absorption of cholesterol, support healthy prostate function, and help to build immune function.
  - Carotenoids, including beta-carotene, alpha carotene, lycopene, lutein, zeaxanthin, and more. Although beta-carotene is commonly sold as a single-ingredient supplement, alpha-carotene may in fact be more important. Lycopene is responsible for some of the recent health claims relating to tomatoes, and lutein and zeaxanthin play key roles in retinal function.
  - Essential amino acids, including tryptophan, histidine, methionine, cysteine, cystine, and arginine. Amino acids are the body's raw materials for building all of its enzymes, DNA, RNA, and connective tissue.
  - Nine B vitamins supporting the body's metabolic machinery, polysaccharides (known to support immunity, among other functions), and phospholipids. Phospholipids are vital to maintaining healthy cell membranes.
  - Lecithin that contains the important phospholipids phosphatidyl choline and phosphatidyl serine. For a more in-depth discussion of lecithin see the discussion of lecithin below.
  - Seven identified enzymes, including co-enzyme Q10 (involved in energy production—see *Additional Amino Acids* below) and superoxidase dismutase (an important antioxidant).

**ORGANIC BARLEY GRASS (GLUTEN-FREE).** (*NOTE: Barley grass is not in LF Rx Super Berry: Instead, Super Berry contains Organic Strawberries, Cranberries, Raspberries, and Blueberries.*) The nutritional concentration of cereal grasses depends on where they are grown, when they are harvested, and how they are processed and stored. Our grower follows all the **quality-control safeguards** that 75 years of research have proved essential for maximum nutritional concentration.

Our barley grass is organically grown, without herbicides or pesticides, in rich farmland soil. This fertile, mineral-abundant soil is located in the **perfect climate for cereal grasses**. Cereal grasses planted in the fall and grown through the winter are nutritionally superior because the grasses grow slowly and develop naturally in an ideal climate.

The barley grass contained in *Living Fuel Rx* is harvested just prior to jointing. Many years of research have clearly established the fact that during this period of the growing cycle, **nutrient levels are highest and the grass contains no gluten.**

Furthermore, our grower uses direct cutting so that the leaves never touch the ground and are moved quickly (within an hour) to dehydrators.

In addition, our grower uses specially designed, low-temperature dehydrators that help to maintain maximum nutrient levels. The dehydrator is a triple-bypass drum dehydrator, through which the grass leaves fly for 2–3 seconds. This processing method ensures that **the cell temperature of the leaf never gets high enough to degrade heat-sensitive nutrients such as beta-carotene and enzymes.**

**ORGANIC CHIA SEEDS.** Chia seeds are very tiny seeds that have the approximate circumference of the lead in a No. 3 pencil. These seeds digest well when swallowed whole, even in people with compromised digestive systems. We do not grind our seeds, because all ground seeds become rancid (toxic) shortly after being ground. Additionally, the seeds absorb more than seven times their weight in water and form a gel that causes a slow release of carbohydrates and an equally slow conversion of carbohydrates into glucose (blood sugar) for energy. The outer layer of chia seeds is rich in mucilloid-soluble fiber (the seed has 5% soluble fiber). When chia seeds are mixed with water or stomach juices, a gel forms that creates a physical barrier between the carbohydrates and the digestive enzymes that break them down. The carbohydrates are digested eventually, but at a slow and uniform rate. **There is no insulin surge or spike needed to lower the blood sugar level after eating chia.** The water-retaining ability of the gel also helps level out the water intake and retains electrolyte balance.

**A key reason that we include chia seeds in *Living Fuel Rx* is to provide essential fatty acids.** Chia seeds contain oil amounts varying between 32% and 39%, with the oil offering the highest-known natural percentage of alpha-linolenic fatty acid (60%–63%). Alpha-linolenic acid is an essential fatty acid that, in the human body, acts as a substratum for transformation into EPA and DHA through the action of desaturation and elongation enzymes. The seeds also contain some omega-6 essential fatty acids and have a favorable omega-3 to omega-6 ratio of 3:2. Modern diets contain too little omega-3 fatty acids. The 5 g amount we have included in the meal replacement formula contains about 1 g of alpha-linolenic acid per serving.

Chia seeds contain 19%–23% protein. Furthermore, the amino acids of chia protein have no limiting factors in the adult diet (ie, they are a **complete protein source** having all of the essential amino acids in an appropriate balance). Chia seed also is a good source of B vitamins, calcium, phosphorus, potassium, zinc, boron, and copper.

**Chia seeds have demonstrated strong antioxidizing activity.** The most important antioxidants obtained are chlorogenic acid, caffeic acid, and flavonol glycosides. Since oxidation is significantly delayed, chia shows a great potential within the food industry compared to other alpha-linolenic acid sources such as flax seeds, which decompose rapidly because of a lack of antioxidants.

**ORGANIC VEGETABLES.** . *Living Fuel Rx* contains 2,500 mg of a mixture of the most nutritious organic vegetables, including broccoli, kale, spinach, carrot, and beet. This blend of vegetables contains both above-ground and below-ground vegetables.

The amount contained in *Living Fuel Rx* is equivalent to at least one full serving of fresh vegetables. All of the vegetable powders are processed at low temperatures to preserve their nutritional value (**NOTE: These vegetables are not in LF Rx Super Berry: Instead, Super Berry contains Organic Strawberries, Cranberries, Raspberries, and Blueberries.**)

**HIGH-PHOSPHATIDE LECITHIN (98% OIL-FREE AND NON-GMO) AND CHOLINE.** Recent years have seen a resurgence of interest in the health benefits and dietary requirements of choline and lecithin. It is known that soy as a whole and certain of its components, particularly soy protein, have significant anti-nutritional properties and are highly allergenic in some people. However, **the high-phosphatide 98% oil-free lecithin in *Living Fuel Rx* is extremely pure and largely free of soy antigens.** As such, many *Living Fuel Rx* users who are intolerant of soy report positive results with *Living Fuel Rx*. Growing evidence now suggests that dietary choline and lecithin are very important in preventing many pathologic conditions, and both substances have been used as a dietary supplement for treating or preventing several human diseases, including cirrhosis of the liver, arteriosclerosis, and certain deficiencies of brain function and memory. In fact, the most recent research has shown that **lecithin and choline are essential dietary components for ensuring optimal nutrition**, and although they are both sources of choline, they may have different and complementary properties that make it desirable to supplement with both.

**Lecithin and its component phosphatidyl choline are known to be essential to liver function.** In fact, even a few weeks on a choline-deficient diet has been shown to cause abnormalities in liver function. Studies in primate models of alcohol-induced cirrhosis have shown that lecithin, but not choline, protects the body from alcohol liver damage. This is a particularly important finding, since liver cirrhosis caused by excessive intake of alcohol is the fourth-leading cause of death in people 25 to 64 years of age in the United States.

Choline and lecithin have also been shown to be essential to proper brain development in infants and children. In fact, supplementation of animal diets with choline or lecithin at particular times of brain development has been shown to permanently increase cognitive function. A published study on the effects of choline supplementation on carnitine metabolism<sup>57</sup> shows that choline supplements reduce the urinary excretion of carnitine through the conservation of skeletal muscle carnitine. This *Journal of Nutrition* study also suggested that those tissues have an increased capacity for fatty-acid oxidation, a beneficial effect due to the increased synthesis of carnitine. The degree to which lecithin exerts the same effects is unknown. The data and research to date suggest that it is prudent to consume both lecithin and choline to ensure all the benefits of both of these sources of dietary choline.

**ORGANIC SPIRULINA AND ORGANIC SEA VEGETABLE COMPLEX.** Spirulina provides a wide range of delicate phytonutrients with very significant health benefits. Phytonutrients include antioxidants known for giving fruits and vegetables their orange and yellow colors. **Nutritionists recommend increasing our intake of phytonutrients to protect against the harmful effects of UV sunlight, pollution, and environmental stress.** Just a few grams of organic Hawaiian spirulina

supplies the phytonutrients contained in a whole salad. A special process has been developed and patented to reduce losses of these delicate compounds normally incurred in processing. The Hawaiian spirulina in *Living Fuel Rx* is dried with this process, giving Hawaiian spirulina much higher levels of phytonutrients and enzymes.

The organic spirulina contained in *Living Fuel Rx* is grown with deep ocean seawater as a rich source of magnesium, calcium, and trace elements. This pure deep ocean water is pulled from a depth of 2,000 feet and is exceptionally clean. It contains over 90 elements and has not been in contact with the atmosphere for over 2,500 years. **(NOTE: Spirulina is not in LF Rx Super Berry: Instead, Super Berry contains Organic Strawberries, Cranberries, Raspberries, and Blueberries.)**

In addition to organic spirulina, *Living Fuel Rx* contains a proprietary blend of organic sea vegetables: organic Nova Scotia dulse and organic Icelandic kelp.

**Nova Scotia Dulse.** The dulse contained in *Living Fuel Rx* is hand-harvested, sun-dried at low temperature, and immediately milled into a fine powder. The entire harvesting and handling process follows strict organic standards to eliminate possible processing contamination. Analytical testing shows that our dulse contains approximately 30% minerals (over 30 minerals, including trace minerals).

**Icelandic Kelp.** The milled Kelp (*Laminaria digitata*) in *Living Fuel Rx* grows deep in the cold sub-tidal waters of Northwestern Iceland. This kelp is the only commercially available kelp that is sustainably harvested, dried, milled, and bagged following the organic standards of Quality Assurance International. The kelp used in *Living Fuel Rx* is an excellent source of organic iodine, and the amount included in a meal replacement serving provides a minimum of the recommended daily allowance for iodine.

**ORGANIC OAT-SOLUBLE BETA-GLUCAN FIBER.** *Living Fuel Rx* now contains a patented proprietary oats-based product enriched with (1-3/1-4) beta-glucans. This oat-soluble beta-glucan fiber is produced via a proprietary technology. Oat-soluble beta-glucan fiber is a Kosher-certified and organically processed product that does not contain any additives or preservatives.

We use organic oat-soluble beta-glucan fiber in *Living Fuel Rx* because the **level of gluten is less than 0.2 mg per serving**, which is suitable for almost any person with a gluten sensitivity. *Living Fuel Rx* also contains the enzyme peptidase, which is known to break down gluten. **(Note: This form of fiber is not in LF Rx Super Berry. Instead, Super Berry contains only stabilized rice bran fiber. LF Rx Super Berry is gluten-free.)**

Furthermore, oat-soluble beta glucan fiber provides health benefits from its beta-glucan fraction in a hydrocolloid format. A single meal replacement serving of *Living Fuel Rx* contains over 200 mg of beta-glucans. When used at this level, it qualifies for the **FDA-approved healthy heart claim**, which states, "May lower blood cholesterol levels and reduce the risk of Coronary Heart Disease." In addition to healthy heart benefits, beta-glucans are also well known for their ability to lower the glycemic index of consumed foods, slow sugar absorption, and act as an appetite

satiator. Furthermore, beta-glucans are well known enhancers of the immune system.

Oat-soluble beta-glucan was tested *in vivo* to provide evidence for its physiological activity. According to results collected from four independent *in vivo* studies, **long-term use of oat-soluble beta-glucan reduced cholesterol levels by 27% and LDL levels by over 36%**. A possible mechanism involves the formation of propionic acid in the colon (through fermentation of beta-glucans) that can partially inhibit HMG CoA reductase—a key enzyme in the production of cholesterol. Other *in vivo* studies (using obese Zucker rats) show that oat-soluble beta-glucan prevents body weight gain by 19% with only 2 weeks of treatment. In parallel, the level of triglycerides was reduced by 41%. Therefore, this ingredient is another aspect of *Living Fuel Rx* that may have great value for controlling body weight and triglycerides levels.

**ENZYMES TO ENHANCE NUTRIENT UTILIZATION (PLANT SOURCE).** The complexity and significant amounts of proteins and peptides found in *Living Fuel Rx* require the combination of multiple proteases to optimize digestion. Proteins are made up of over 20 different amino acids, with each combination presenting different characteristics. Each of the proteolytic enzymes in *Living Fuel Rx* has a different ability to break the chemical bonds found in the proteins (hydrolysis); thus, **the combination shows the greatest rate of hydrolysis**. Peptidase breaks amino acids off the ends of the peptide chain. Our proprietary enzyme complex contains both amino-peptidase and carboxy-peptidase activity and thus can remove amino acids from both ends of the peptide chain. Protease 4.5 and protease 3.0 break bonds at points within the peptide chain that depend on their bond specificities. Significant differences in the action of these enzymes have been seen both in the laboratory and in digestive product usage. The pH levels of these two enzymes are also an important benefit of combining these proteases. Protease 4.5 has an optimal pH of 4.5 (range, 2.0–6.0). Protease 3.0 has an optimal pH of 3.0 (range, 2.0–7.0). Protease 6.0 has an optimal pH of 6.0 (range, 4.0–11.0). Together, these proteases provide proteolytic action throughout the human digestive system.

Because *Living Fuel Rx* contains a large amount of plant matter, we have added additional enzymes to the formula. Cellulase enzymes offer distinct advantages for people consuming large amounts of vegetables. These enzymes hydrolyze the bonds in various fibers. Cellulase hydrolyzes glucose–glucose bonds in cellulose. By disrupting the structure of the fiber matrices that envelop most of the nutrients in plants, **cellulase increases the nutritional value of fruits and vegetables**. Hemicellulase and pectinase also works to macerate, or disrupt, the cell walls of fruits, vegetables, seeds, and herbs. These enzymes hydrolyze non-starch polysaccharides (NSPs), which can have anti-nutritive effects. NSPs have also been shown to bind digestive enzymes and inhibit mineral absorption.

**STABILIZED PROBIOTIC CULTURES (MICROENCAPSULATED).** Microencapsulation is a new, patented technology that protects the viability of the specific probiotics contained in *Living Fuel Rx* under stressful conditions such as moisture, heat, compression, and high acidity. These **stabilized probiotics are as much as three times as potent as commercially available probiotics**. Currently, *Living Fuel Rx* contains *Lactobacillus rhamnosus*, *Lactobacillus acidophilus*, and *Bifidobacteria*

*longum*. As they become available, we intend to add *Lactobacillus casei* and one additional *Bifidobacteria* strain. The benefits of each of these organisms are described below.

***Lactobacillus rhamnosus***. Like other lactobacilli that can implant in the intestinal tract, *L. rhamnosus* accomplishes several important functions:

- Creates a favorable environment for a desirable microbial balance
- Limits the action of putrefactive microbes, thus controlling production of toxins and their noxious effects on vital organs and body cells
- Inhibits pathogenic bacteria and prevents diseases caused by intestinal infections
- Hydrolyzes lactose and eliminates lactose intolerance
- Aids intestinal peristalsis and eliminates harmful amines derived from amino acids
- Accelerates the evacuation of excrements
- Coats the intestinal mucosa and protects against invasion and activities of harmful microorganisms
- Increases immunity by use of lactic-acid bacteria (as reported by several researchers studying anti-tumor activity and activation of immunity)

Because of its beneficial effects on nutrition (ie, protection of the digestive tract, inhibition of vaginal infections, production of immunity against pathogenic bacteria and viruses), *L. rhamnosus* may be considered one of the most important lactobacilli, if not the best.

***Lactobacillus acidophilus***. According to its newest classification, *L. acidophilus* is a natural inhabitant of human and animal intestinal tracts. It produces DL-lactic acid from carbohydrate fermentation. Its optimum growth temperature is 37°C. Studies have shown its efficacy in **reducing lactose intolerance, inhibiting undesirable microorganisms in the intestine, reducing the level of cholesterol, lessening the proliferation of *Candida albicans*, and controlling diarrhea and undesirable intestinal bacteria.**

*Results of some recent studies:*

- Daily ingestion of 8 oz of yogurt containing *L. acidophilus* decreased both candidal colonization and infection.<sup>58</sup>
- *L. acidophilus* has been found to inhibit *Candida albicans* on MRS agar. *Lactobacillus* peroxidase involvement is postulated.<sup>59</sup>
- Human strains of *L. acidophilus* have demonstrated the inhibition *in vitro* of several species of pathogenic and spoilage bacteria.
- *L. acidophilus* has shown an *in vitro* viricidal effect on human immunodeficiency virus type I.<sup>60</sup>

**Bifidobacteria.** *Bifidobacteria* consist of rods of different shapes, are anaerobic, and have an optimum growth temperature of 36°–38°C. These organisms do not grow at a pH below 5.5. They exhibit limited fermentation of carbohydrates, although they ferment lactose, glucose, galactose, fructose, and lactulose to acetic and L(+) lactic acids. *Bifidobacteria* are acido-tolerant and they partly survive passage through gastric juice and reach the intestinal tract. *Bifidobacteria* are normally very abundant in the human colon. In humans, specific species of *Bifidobacteria* are present, and their predominance changes with age. The most important are *Bifidobacterium infantis*, *B. longum*, *B. breve*, *B. adolescentis*, and *B. bifidum*.

Here are some of the ways *Bifidobacteria* benefits the body:

- Maintains balance of normal intestinal flora, especially among the elderly and children
- Inhibits coliforms and *Clostridia*—a freeze-dried culture of *B. bifidum* administered to children suffering from enteric infections has eliminated pathogenic *Escherichia coli* in 60% of cases
- Improves lactose intolerance; furthermore, the L(+) lactic acid produced by *Bifidobacteria* is easily metabolized, especially by infants, thus preventing metabolic acidosis
- Prevents production of toxic amines by putrefactive bacteria
- Has anti-carcinogenic activity
- Lowers serum cholesterol
- Synthesizes the B-complex vitamins (thiamin, riboflavin, pyridoxine, and vitamin K)
- Lowers intestinal pH from 7.8 to 5.6

**ADDITIONAL AMINO ACIDS (PLANT SOURCE).** The protein profile of *Living Fuel Rx* is excellent, and the enzymes and co-factors work to efficiently deliver amino acids to the body. The following amino acids have been added to provide additional support of major body functions.

- **L-Glutamine.** L-glutamine is the most abundant amino acid in the human body, where it functions as a major fuel source. It is one of the few amino acids that contain two nitrogen atoms. As such L-glutamine is important in DNA synthesis. L-glutamine is also important for the health and function of the intestinal wall. Glutamine deficiency can cause diarrhea, villous atrophy, mucosal ulceration, increased intestinal permeability, and intestinal necrosis. Glutamine has been shown to protect against bacterial translocation, to promote healing, and to enhance the growth and absorptive capacity of the intestinal mucosa. Glutamine is stored in muscle tissue for subsequent use by other body tissues and inhibits muscle atrophy induced by stress hormones.
- **L-Lysine.** As previously mentioned, rice protein tends to be somewhat low in the amino acid lysine. The pea protein we include in *Living Fuel Rx* brings the lysine levels into better balance. However, as insurance that *Living Fuel Rx* has adequate levels of lysine, we have added 300 mg of pharmaceutical grade L-lysine to the formula (300 mg per meal replacement serving).

- **L-Taurine.** L-aurine is one of the most abundant amino acids in the body. It is found in the central nervous system, in skeletal muscle, and (in very high concentrations) within the brain and heart. Taurine is synthesized from the amino acids methionine and cysteine, in conjunction with vitamin B6. Taurine affects cell-membrane electrical excitability by normalizing potassium flow in and out of heart muscle cells. Taurine helps to maintain the correct composition of bile as well as the solubility of cholesterol. It has been found to have an insulin-like effect on blood sugar levels. Furthermore, taurine helps to stabilize cell membranes and seems to have some antioxidant and detoxifying activity. It helps the movement of potassium, sodium, calcium, and magnesium in and out of cells, which helps generate nerve impulses. In addition, taurine is necessary for the chemical reactions that produce normal vision.

**HERBS CONTAINED IN *LIVING FUEL RX*.** The following herbs have been added to *Living Fuel Rx* to specifically support the function of major body systems and to further enhance the nutrient density of the whole-foods complex. These herbs are added in non-therapeutic doses; *Living Fuel Rx* is safely used in pregnancy, lactation, and infant feeding.

- **Organic Marshmallow Root.** This root helps relieve digestive discomfort and provides mucilage to soothe the digestive tract. Mucilage is a long chain of sugars (polysaccharides) that make a slippery substance when combined with water. Marshmallow root is also rich in nutrients and is easy to digest, making it an excellent food during times of digestive discomfort.
- **Organic Astragalus.** Astragalus is derived from the root of a plant (*Astragalus membranaceus*) in the pea family. It is an *adaptogen*, meaning it has a balancing effect on bodily functions. Astragalus is often used to strengthen or tone the body's overall vitality, improve digestion, and support the spleen. Studies confirm that it contains medicinally active compounds, including a polysaccharide that stimulates the immune system.
- **Organic Ginger.** Ginger rhizome (*Zingiber officinale*) is an incredibly active and effective gastrointestinal aid that (1) contains a digestive enzyme whose effectiveness exceeds even that of papain, (2) stimulates the flow of saliva and increases the concentration of the digestive enzyme amylase in the saliva, and (3) activates peristalsis and increases intestinal muscle tone. Ginger is also known to be helpful in cases of nausea.
- **Organic Dandelion Root.** Dandelion root enhances the flow of bile, improving such conditions as liver congestion, bile duct inflammation, hepatitis, gallstones, and jaundice.
- **Standardized Milk Thistle Extract.** Extensive research has shown that silymarin, the major component of milk thistle extract, exerts both a protective and restorative effect on the liver and can stimulate the growth of new liver cells to replace old damaged cells.

- **Ginkgo Biloba (Standardized 24/6 Extract).** Ginkgo Biloba has been shown to enhance memory in both normal adults and those with cerebral insufficiency. It can be effective against cerebral aging and has been shown to be an effective nutritional supplement in psychological and behavioral disorders of the elderly and in cognitive disorders secondary to depression. Anti-stress effects have been noted in patients treated with Ginkgo Biloba. The free-radical scavenging effects of Ginkgo Biloba protect lipid membranes against peroxidation. Ginkgo Biloba has been shown to increase peripheral microcirculation and may be a useful adjunct in protocols for the treatment of edema, including cerebral edema. Research has shown that Ginkgo Biloba supplementation may be helpful for normalizing the vascular system. It may be a useful adjunct in protocols for the congestive symptoms of pre-menstrual syndrome and has been shown to be an effective supplement for functional disorders of ischemic origin in the ear, nose, throat, and eye areas. Ginkgo Biloba strongly inhibits platelet activation factor, and patients with diabetic retinopathy have responded well to Ginkgo Biloba. Those with disequilibrium disorders have shown a remarkable response to Ginkgo Biloba supplementation. A study of arterial erectile dysfunction showed that patients benefited significantly from long-term Ginkgo Biloba supplementation.
- **Organic Turmeric Root.** Turmeric, a polyphenol, contains substances called *curcuminoids* that are powerful antioxidants, pain relievers, and anti-inflammatories. Curcuminoids have been shown to exhibit antibacterial activity.

**ADDITIONAL ANTI-OXIDANTS.** Antioxidants have been added to *Living Fuel Rx* to optimize the rich and abundant antioxidant profile of *Living Fuel Rx*'s whole-food complexes and to further strengthen its overall nutrient density. The antioxidants in *Living Fuel Rx* operate synergistically, especially as they relate to the body's ability to quench free radicals in its aqueous (water-based) compartments. Because antioxidants may become free radicals themselves once they have done their job, the body has developed an elaborate system for recovering oxidized antioxidants. For example, reduced glutathione can reduce oxidized vitamin C back to its unoxidized state. Vitamin C is able to reduce oxidized vitamin E back to its unoxidized state and also can reduce glutathione and spare it for its other important functions, including detoxification and immune enhancement. Many of the polyphenols—such as oligomeric proanthocyanidins (OPC), anthocyanidins, and catechins—found in grape seed and green tea extracts spare vitamin C and glutathione in the body as well as operate as powerful antioxidants, anti-inflammatories, and connective-tissue strengtheners. Lipoic acid operates as an antioxidant in both its oxidized and reduced states and can reduce both oxidized vitamin E and oxidized vitamin C; it also has been shown to enhance glutathione levels. The antioxidants in *Living Fuel Rx* have been carefully selected and balanced to provide optimal effect, especially as it relates to free-radical protection, detoxification, immune system enhancement, connective-tissue strengthening, and reduced inflammation.

- **Green Tea Catechins (90% Polyphenols, 60% ECGC).** Green tea extract is used primarily for its free-radical fighting capabilities. Its key ingredient, epigallocatechin gallate (EGCG), protects against digestive and respiratory

infections. It helps block the cancer-promoting actions of carcinogens, ultraviolet light, and metastasis from an original site in the skin, stomach, small intestine, liver, or lung. EGCG also reduces platelet aggregation about as much as aspirin. Green tea is very effective in inhibiting pathogenic bacteria that cause food poisoning, and it increases levels of friendly intestinal bacteria. Green tea also blocks the bacteria associated with dental caries from attaching to the teeth.

- **N-Acetyl-L-Cysteine (NAC).** NAC is a powerful free-radical scavenger. A majority of orally ingested NAC rapidly undergoes deacetylation to form L-cysteine, which is necessary for glutathione production. NAC, therefore, has powerful implications for immune function and increasing the body's free-radical trapping capacity. NAC's effectiveness in treating patients with acetaminophen overdose has been well documented. NAC has been used with good results in the treatment of respiratory illness and diseases such as chronic bronchitis and chronic obstructive pulmonary disease. Additionally, NAC has well-known anti-mucolytic properties and has been shown to increase mucociliary transport in the lungs. Furthermore, NAC adds an additional sulfur-containing amino acid to *Living Fuel Rx*, boosting the overall amino acid profile of the rice and pea protein complex.
- **Grape Seed, Skin, and Stem Extract (>85% OPC).** The grape seed extract in *Living Fuel Rx* is extracted by ethanol and water and contains the highest percentage of OPCs of any product on the market. OPCs, a class of bioflavonoids, are one of nature's most powerful free-radical scavengers. As bioflavonoids, OPCs help to increase the effectiveness of vitamin C. OPCs cross the blood-brain barrier to provide antioxidant protection to central nervous system tissue. Studies have clearly demonstrated that OPCs improve and normalize capillary activity, strengthening capillary walls. OPCs bind to collagen fibers, realigning them in the process to a more youthful, undamaged structure. Elasticity, flexibility, and strength are thereby restored to connective tissue.
- **Glutathione (Reduced).** Glutathione is considered to be the most powerful, most versatile, and most important of the body's self-generated antioxidants. Among glutathione's many important properties are (1) it neutralizes free radicals and prevents their formation both enzymatically and non-enzymatically, (2) it is one of the strongest anti-cancer agents manufactured by the body, (3) glutathione can reduce oxidized vitamin C and vitamin E back to their unoxidized states, (4) it plays a key role in Phase I and Phase II liver detoxification reactions, (5) it is involved in nucleic acid synthesis, (6) it plays a role in DNA repair, (7) it maintains the cellular redox potential, (8) it is involved in cellular differentiation and slows the aging process, (9) it is one of the most potent anti-viral agents known, and (10) Glutathione is involved in maintaining normal brain function.
- **Quercetin.** Quercetin is a bioflavonoid that has been shown to have powerful anti-inflammatory and antioxidant effects and may be helpful to those suffering from swelling due to injury or allergic reactions. Also, quercetin is known to reduce viral activity and may be helpful with chronic viral syndromes.

- **Co-enzyme Q10.** In the human body, the primary function of co-enzyme Q10 is to allow the mitochondria to convert food metabolites from the digestive process into energy for the cell. This enzyme, which the body normally produces, is found in all of the body's cells but is far more abundant in the cells of the heart, liver, and immune system. Co-enzyme Q10 has been shown to be an important fat-soluble antioxidant with the ability to protect and regenerate vitamin E in cell membranes. Also, co-enzyme Q10 stimulates the body's immune defenses.
- **Alpha Lipoic Acid.** Alpha lipoic acid is normally made in the human body, where it functions primarily as an important metabolic nutrient. As such, it is crucial to the metabolism of both fats and carbohydrates into energy. In addition, lipoic acid functions as an extremely powerful antioxidant capable of trapping many different types of free radicals in the body. Because it is both water and fat soluble, lipoic acid can operate in a broader range of body tissues than most other antioxidants. Its small size allows lipoic acid to enter areas of the body not easily accessible to many other substances allowing it to, for example, enter the cell nucleus and prevent free-radical damage to DNA. Because it is such a powerful antioxidant and can easily function and exist in both a reduced and oxidized state, lipoic acid protects other important antioxidants such as glutathione, vitamin E, and vitamin C. Lipoic acid also can chelate heavy metals such as lead, cadmium, mercury, free iron, and free copper out of the body.

**COMPLETE VITAMIN AND MINERAL FORMULA.** The whole-foods complex in *Living Fuel Rx* contains virtually every known nutrient and co-factor needed by the human body. However, to ensure completeness, a sophisticated array of vitamins, minerals, and co-factors have been added to *Living Fuel Rx* that further optimize the naturally occurring nutrient profiles and maximize the nutrient density. This formulation incorporates the latest nutritional research and features the highest-quality and most bioavailable forms of vitamins, minerals, and co-factors. The formula features:

- **A full spectrum of B-complex vitamins, mostly in co-enzyme forms.** This includes B1 as thiamin diphosphate, B2 as riboflavin 5-phosphate, B3 as niacinamide, B5 as pantothenic acid, B6 as pyridoxal 5-phosphate, folate as folinic acid, B12 as methylcobalamin, and biotin. The co-enzyme vitamin forms are the same as those found in food and are the forms the body needs to support the metabolic processes.
- **All of the most absorbable and usable forms of the fat-soluble vitamin group.** This includes vitamin A (as beta-carotene, which is a precursor to vitamin A and *does not* have the potential toxicity of vitamin A), vitamin E (as d-alpha tocopherol succinate), vitamin D3 (as cholecalciferol), and vitamin K (as phylloquinone).
- **A complete and balanced supply of the most abundant carotenoids found in the body,** including beta- and alpha-carotene as well as lycopene and lutein.
- **All of the known essential minerals** in forms readily absorbed and recognized by the body, including calcium, magnesium, potassium, zinc,

manganese, boron, copper, chromium, molybdenum, vanadium, and selenium. Over 50 trace minerals from inland sea water are included in *Living Fuel Rx* as well.

- **Mineral carriers such as ascorbates, Krebs cycle bionutrients, and amino acids**, which provide the body with important metabolic substrates and vitamins, including citrate, succinate, alpha-ketoglutarate, fumarate, malate, glycinate, aspartate, ascorbate, and sebacate.
- **Extra-high levels of choline and inositol**, which are crucial to all of the cell membranes of the body, brain function, and liver function.
- **Exclusion of the pro-oxidant minerals of iron and iodine**, which can lead to excessive free-radical production. However, these minerals are present in reasonable amounts in the whole foods included in *Living Fuel Rx*.

#### LIVING FUEL RX PREBIOTIC AND FLAVOR-ENHANCING COMPLEX:

- **Xylitol.** Xylitol is used in both *Super Greens* and *Super Berry*. It has been used in foods since the 1960s. It is a popular sweetener for the diabetic diet in some countries. In the United States, xylitol is approved as a food additive in unlimited quantity for foods with special dietary purposes.

Pure xylitol is a white crystalline substance that looks and tastes like sugar. On food labels, xylitol is classified broadly as a carbohydrate and more narrowly as a polyol. Because xylitol is only slowly absorbed and partially utilized, a reduced calorie claim is allowed: 2.4 calories per gram, or 40% less than other carbohydrates.

Over 30 years of testing in widely different conditions confirm that xylitol is an ideal sweetener in terms of affecting teeth and for diabetics. Xylitol use reduces tooth decay rates in both high-risk groups (high caries prevalence, poor nutrition, and poor oral hygiene) and low-risk groups (low caries incidence using all current prevention recommendations). Sugar-free chewing gums and candies that use xylitol as the principal sweetener have already received official endorsements from six national dental associations.

- **Tagatose.** Tagatose is used in *Super Berry*. It has no glycemic effect, is low-calorie (1.5 kcal/g) and stimulates butyrate. Tagatose is an alternative to or complement of the polyols (sugar alcohols) and fibers. Tagatose is similar to the polyols in having a low caloric value and tooth-friendly properties while producing no glycemic response.

Tagatose is unique combination of sweetness and prebiotic effects. Its use in relatively high doses (10%–30%) has led to a range of claims in the United States, including no glycemic effect, which makes it ideal for low-glycemic

and low-carb diets and does not promote tooth decay. It selectively promotes the production of butyrate and lactic acid bacteria and is pH-stable in acidic conditions.

- **Mannitol.** Mannitol, a powerful hydroxyl free-radical scavenger, is abundant in nature, particularly in beets, pumpkin, celery, mushrooms, and onions. Mannitol is a polyol (sugar alcohol) widely used in the food industry because of its unique functional properties. It is about 50% as sweet as sucrose and has a desirable cooling effect often used to mask bitter tastes. Like FOS, mannitol has no glycemic index and a low caloric content. Mannitol has been used safely around the world for over 60 years.
- **FOS (Fructo-oligosaccharides).** Fructo-oligosaccharides (FOS) are polymers (linked molecules) of fructose, but they do not affect blood sugar because they are indigestible except to the gut bacteria. FOS is about 50% as sweet as sucrose. No glycemic (blood sugar) effect is possible because FOS contains only 1% glucose and 4% sucrose. FOS are used by lactic acid bacteria as a fuel, which allows the rapid growth of beneficial species such as *Bifidobacteria* and *Lactobacilli*. These bacteria support the digestive processes in the gut as well as inhibit the growth of pathogens.
- **Natural Vanilla Extract.** This ingredient has been added to *Living Fuel Rx* to provide a pleasant taste.
- **Stevia Leaf Extract (Debittered).** Stevia is a small green plant with leaves that have a delicious and refreshing taste, which can be 30 times sweeter than sugar in its unprocessed form and over 300 times sweeter than sugar in its extract form. Stevia supports pancreatic function. Stevia extract does not adversely affect the blood sugar levels.

## NUTRITIONAL INFORMATION

### LIVING FUEL RX SUPER GREENS

<b>Nutrition Facts</b>		
Serving Size: 2 scoops (66 gm)		Servings per container: 14
<b>Amount per serving</b>		
<b>Calories:</b> 234	Calories from fat: 46.7	
	<b>Amount</b>	<b>% Daily Value</b>
<b>Total Fat</b>	5.2 gm	7.7%
Saturated	0.7 gm	4.0%
<b>Cholesterol</b>	0 gm	
<b>Sodium</b>	89 mg	3.4%
Potassium	728 mg	21%
<b>Total Carbohydrate</b>	14.9 gm	5%
Dietary fiber	7.2 gm	29%
Sugars	0.9 gm	
<b>Protein</b>	26 gm	
Vitamin A (as <b>beta carotene</b> )	22,600 IU	453%
Vitamin C	527 mg	879%
Vitamin E	120 IU	400%
Calcium	431 mg	43.1%
Iron	5.3 mg	30%
Vitamin B12	0.5 mg	8325%
*Daily Value not established		

Percent Daily Values are based on a 2,000-calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories	2,000	2,500
Total Fat	Less than	65 gm	80 gm
Saturated fat	Less than	20 gm	25 gm
Cholesterol	Less than	300 mg	300 mg
Sodium	Less than	2,400 mg	2,400 mg
Total Carbohydrate		300 gm	375 gm
Dietary Fiber		25 gm	30 gm

Calories per gram:

Fat: 9                      Carbohydrate: 4                      Protein: 4

**LIVING FUEL RX SUPER BERRY**

<b>Nutrition Facts</b>		
Serving Size: 2 scoops (74 gm)		Servings per container: 12
<b>Amount per serving</b>		
<b>Calories: 247</b>		Calories from fat: 51.5
	<b>Amount</b>	<b>% Daily Value</b>
<b>Total Fat</b>	5.8 gm	8.9%
Saturated	0.8 gm	4.0%
<b>Cholesterol</b>	0 gm	
<b>Sodium</b>	72 mg	3.0%
Potassium	696 mg	19.9%
<b>Total Carbohydrate</b>	25.1 gm	8.4%
Dietary fiber	9.2 gm	36.8%
Sugars	10.2 gm	
<b>Protein</b>	26 gm	
Vitamin A (as <b>beta carotene</b> )	85,833 IU	17,167%
Vitamin C	529 mg	879%
Vitamin E	120 IU	400%
Calcium	431 mg	43.1%
Iron	2.6 mg	14.4%
Vitamin B12	0.5 mg	8325%
*Daily Value not established		

Percent Daily Values are based on a 2,000-calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories	2,000	2,500
Total Fat	Less than	65 gm	80 gm
Saturated fat	Less than	20 gm	25 gm
Cholesterol	Less than	300 mg	300 mg
Sodium	Less than	2,400 mg	2,400 mg
Total Carbohydrate		300 gm	375 gm
Dietary Fiber		25 gm	30 gm

Calories per gram:

Fat: 9                      Carbohydrate: 4                      Protein: 4

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