

PEAK BIO

Optimizing Biology

we create **progressive** supplements



for the human race

EDUCATION AND INSTRUCTION MANUAL

Synergistic Nutritional Supplements are the Key to Health and Wellness

Synergy is defined as **the sum being exponentially greater than all of the individual parts**. The law of synergy applies in all biological systems and nutrition is a shining example.

Unlike the multitudes of single supplements available that may add a little extra fuel to your tank, **PeakBio** is a **synergized system** of "**biologically optimized**" supplementation that when combined with specific dietary regimes and exercise can eliminate physical dysfunction and maximize peak performance.

People go to the orchestra to hear the synergy of all of the instruments playing in harmony. The same holds true for nutritional supplementation. There are hundreds of products that make claims to do one thing or another, yet in reality they do very little. Our bodies are comprised of 60 to 100 billion cells with each cell generating an estimated 50 thousand chemical reactions per second. This wonderful biologic orchestra works as one with each system interwoven with all of the others.

Although single nutrients such as Vitamin D and C are important, they fail to support physiology and chemistry on a number of levels. A nutritional and lifestyle system must have a purpose and be strengthened with laboratory and physical data. **Without a purpose and a system you're just swallowing pills**. We're not saying there isn't some benefit to taking individual supplementation; however, we liken it to doing just right arm bicep curls or just reading one genre of books . . . the end result may be of some benefit, but certainly lacks in strengthening the whole.

PeakBio Ten Years in the Making

The formulation and design of **PeakBio** supplements is the result of ten years of data gathered through research - *not hunches*. During this time, we have done thousands of testing procedures and evaluated exercise programs, hormones, digestive systems, blood sugar responses, liver functioning and biochemical work-ups.

We have identified the largest areas in physiology that we can balance and optimize in order for you to receive the best gains.

We've used our innovative clinic and training arena to collect data on a number of biological systems and used our vast array of measurement devices to identify the areas of limitation for individuals attempting to regain health and performance.

The end result is a leading-edge line of nutritional enhancement products that will greatly improve your well-being and performance *well beyond sensible diet and lifestyle choices*.



Where the lion share of supplements are based on a defensive strategy to alleviate one symptom or possibly increase one parameter of performance, **PeakBio** on the other hand is a product "system" that goes on the OFFENSE! Each supplement in our system synergizes with the next to cover as many bases as possible and improve all biological functions. Daily use of **PeakBio** products ensures that you have the *finest in nutritional support and protection*.

Prevention of disease is a wonderful aim; **but maximizing health and physiology should be the ultimate goal**.

A Pioneering Methodology

Although each biological system in your body has a specific task, it is of tantamount importance that each system works in unison with one and other to ensure proper physiology. The Immune, Digestive, Nervous, Hormonal, Circulatory and Detoxification Systems must all be collaborating to ensure that health is not only maintained but that health excellence is a possibility should the correct enhancements be made available.

After years of experimentation, research and working with single systems and single nutrients Dr. Jeoff Drobot came to the conclusion *that supporting all the key systems of the body simultaneously* provided much more benefit and greater performance outcomes than aggressively concentrating on the support of one system.

Together Dr. Drobot and renowned peak performance expert James Fitzgerald collaborated ten years of data to design a supplementation system that would address the need to balance communication between *all the key biological systems* and “build” the best athletes **regardless of genetics**. Although a small percentage of the population has the ability to take their physiology to the next level regardless of the workload, for the rest of us mortals it takes a philosophy, proper diet, rest and support to handle the rigors of our current environment while moving to an optimal level of health.

It's easy to be unhealthy and not that difficult to be disease free for a period of time. However, it takes effort to feel well and intelligence and purpose to be at the highest level of health. **High-level health has nothing to do the absence of disease**. Rather it takes physical, mental and spiritual mastery of your surroundings to advance the quest toward high-level health. Every cell in your body is turning over constantly as it renews itself and small changes will make a big difference in time.

It may seem hard work to climb the mountain, but the view from the top makes it all worthwhile. Once you learn about how your body operates and how you can support it, the rest is easy. Unfortunately we know more about how to operate a computer than how to work with our own body.

PeakBio was designed to provide the educational and nutritional support that you require to take your physiology to optimal functionality!

The expression “you can't shoot a cannon out of a canoe” speaks to the need to build a strong foundation. Unfortunately, most of us have at least one core system that needs additional support. If your goal is performance, you'll need all your systems working at peak capacity to attain peak energy output and fast repair.

Exercise is wonderful, but it is also a stressor. Diet is pivotal, but it requires individualization. Your immune system is constantly under stress from our increasingly toxic environment. Hormones are overworked and rarely in balance. Our nervous systems are taxed with the rigors and constant bombardment of information. Life is not simple anymore and our rising disease rates echo the fact.

For example:

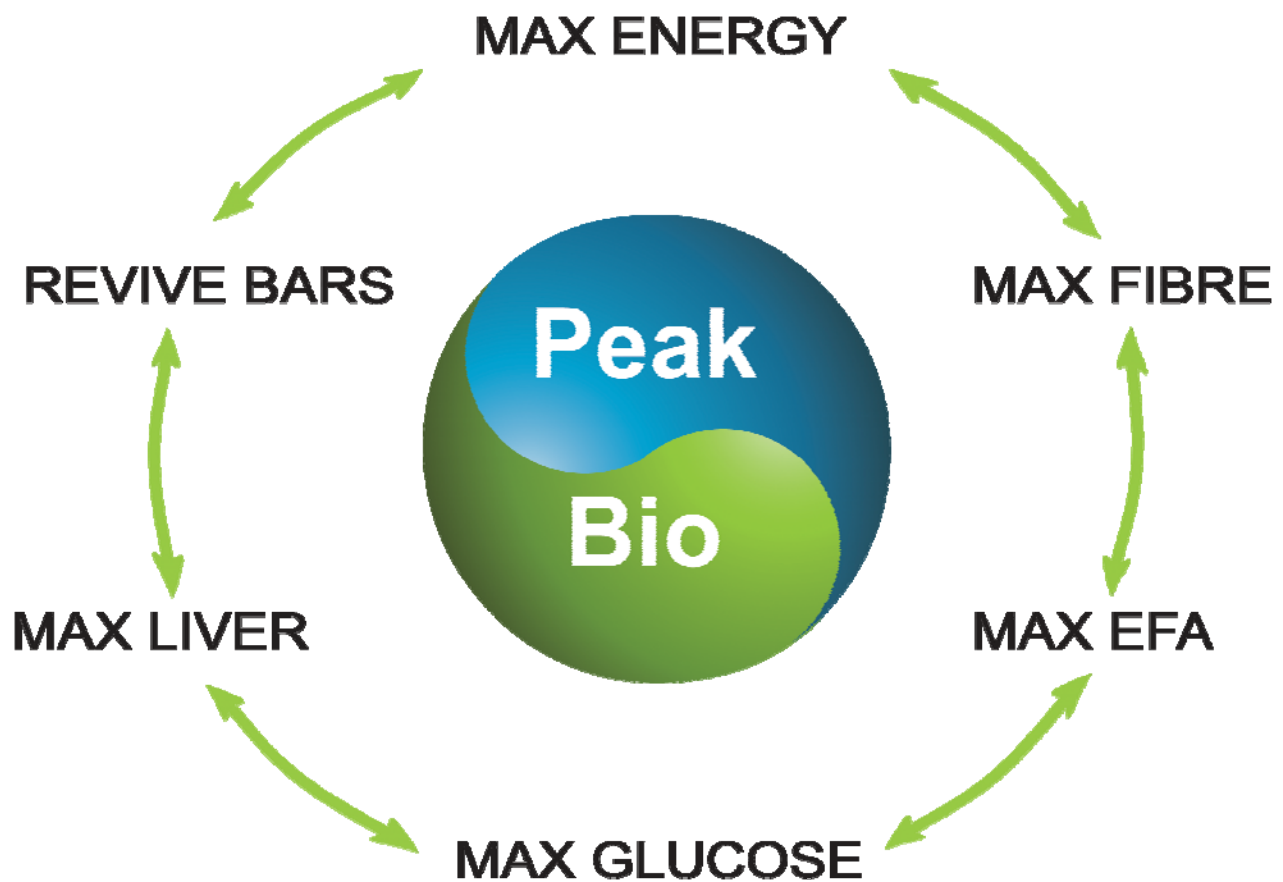
Blood sugars affect stress hormones which break down the digestive tract and a weak digestive tract reflects in a weak immune system. A weak immune system equates to poor detoxification and poor detoxification affects each of the 100 trillion cell membranes which are responsible for energy creation.

Looking at it from another angle, a person or athlete eats a diet that appears very healthy on paper, yet unbeknownst to them, they have food sensitivities to two of the foods they consume daily. This constant inflammation results in more repairs for the body to perform daily as well as more stress hormone to combat the digestive inflammation.

While all of this is going on behind the scenes they are in a heavy training circuit creating more inflammation for an already taxed hormonal and immune system to manage. The resulting inflammation eventually prevails and they are hormonal, immunologically and neurologically broken. It doesn't matter where one's limitations are in the system, failure to identify the limitation and support the system in it's entirety will never allow maximal health or performance.

The **PeakBio** system addresses the extra burdens that our daily existence creates and takes the guesswork out of daily supplementation as it creates a solid foundation for the individual to paint their idealistic health portrait. **PeakBio** was designed to build the foundation and strengthen and support the major pillars of human physiology thus taking individuals to ever increasing levels of health and vitality!

Each **PeakBio** supplement has a task and they are heavyweights in their ability to shine in their area of expertise. Yet the true magic of our "optimized" system is in how each supplement in the **PeakBio** family seamlessly merges into the other's primary function, thus creating a balance of the whole.



MAX GLUCOSE

PROMOTE HEALTHY BLOOD SUGAR LEVELS AND HORMONE BALANCE

One of the fundamentals of the **PeakBio** model is the constant control of insulin and blood sugars. Over time, chronically high or heavily fluctuating **blood sugar levels can inflict enormous hidden damage** as the excess glucose combines with proteins, collagen, and enzymes, and reacts with cellular DNA.

This can trigger serious negative long-term effects that shave years or even decades off your life.

Your body needs carbohydrates for energy. Although they are essential for fueling the cells, they also have a disastrous effect when they are consumed in excess - *and the average North American consumes 140 pounds of sugar a year.*

Carbohydrates are like a spark and overconsumption creates a systemic forest fire that affects every one of the 60-100 trillion cells in your body. Your body responds by creating insulin that shuttles sugars out of your blood stream and in to the awaiting cells for energy.



The body is a wonderfully integrated machine that is equipped to adapt to its inputs and fulfill the ultimate goal of survival. If there's extra carbohydrate around, your body places them in storage for later use. However, excess leads to imbalance and imbalance leads to disease. With excess sugar and cortisol production from your adrenal glands, insulin levels climb, cells become intoxicated and physiology suffers. Exercise and diet are the main defenses against blood sugar imbalance and critical in the prevention of disease.

While excess carbohydrates (sugar being the worst), are a big player in maladapted blood glucose response, stress and intense exercise also contribute. As mentioned earlier, exercise is a stressor. Moderate exercise is wonderful but moderation provides balance and not necessarily excellence. Life is short, and while balance is the key, excellence is what we should strive for while we have the ability. That being said, few of us will get paid millions of dollars to eat, sleep and train. Most of us while have to push the envelope to see what we can do in addition to managing our social and professional lives. Here presents the dilemma. Exercise will always raise stress hormones and stress hormones will always raise sugar levels. The wonderful thing about exercising regularly is that you are always burning the sugar thus keeping the levels balanced.

However, if life becomes hectic stress hormones can become increasingly difficult to control. Your body's response is simple: **create more fuel to enable you to flee or fight**. If a tiger is chasing you, the immediate fuel needed to run for your life becomes paramount. Constant dietary, emotional, physical, mental and environmental stress put a load on your stress hormones and often time's blood sugar imbalance is created in the wake. **MAX GLUCOSE** is designed to ease the burden of insulin response and alleviate the effects of chronic stress hormone on the cells. Even with a low carbohydrate diet the stress hormone cortisol can wreak havoc on your ability to manage your blood sugars. This leaves you feeling weak, shaky and nervous. Burnt out athletes experience this regularly as the stress hormones rage and repair mechanisms fail. Shoring up this metabolic system is crucial in ensuring you can train at max output. You will notice a positive difference in energy stability when these synergistic nutrients are working to control insulin and cortisol levels. **MAX GLUCOSE** eliminates the blood sugar surges and insulin spikes allowing more hormones to be used for repair and growth rather than reacting to inflammation.

MAX GLUCOSE

PROMOTE HEALTHY BLOOD SUGAR LEVELS AND HORMONE BALANCE

MAX GLUCOSE is a potent combination of vitamins, minerals and herbal extracts uniquely formulated to have maximal effect on combating multiple sources of blood sugar deregulation and energy impairment.

KEY SUPPORTING FACTORS:

Vitamin C (as ascorbic acid) / Vitamine C (as acid ascorbique)

A major antioxidant and vitally important to many biologic functions. It's highest concentrations exist in the adrenal gland.

Thiamine / Thiamine

As co-enzymes, the B vitamins are essential components in most major metabolic reactions. They play an important role in energy production, including the metabolism of lipids, carbohydrates, and proteins. B vitamins are also important for blood cells, hormones, and nervous system function. As water-soluble substances, B vitamins are not generally stored in the body in any appreciable amounts (with the exception of vitamin B-12). Therefore, the body needs an adequate supply of B vitamins on a daily basis. **Thiamine (Vitamin B-1)** is an essential coenzyme in energy production. Thiamine is converted quickly into thiamine pyrophosphate, which is required for glycolytic and Krebs cycle reactions. Thiamine also appears to be related to nerve impulse transmission.

Riboflavin / Riboflavine

Riboflavin is an essential coenzyme in energy production. It is a component of the coenzymes FAD and FMN, which are intermediates in many redox reactions, including energy production and cellular respiration reactions. Niacinamide / Niacinamide Niacin (vitamin B3) occurs in the body as two metabolically active coenzymes, NAD (nicotinamide adenine dinucleotide) and NADP (NAD phosphate).

The niacin coenzymes NAD and NADP have pervasive roles in energy-related and biosynthetic metabolic processes. At least 200 enzymes depend on these niacin cofactors. The NAD-dependent enzymes are involved in mostly catabolic, oxidative reactions that release energy from carbohydrate, fat, and protein, whereas the NADP-dependent enzymes more commonly function in biosynthetic pathways of such compounds as fatty acids and steroid hormones. Independent of its functions as NAD or NADP, niacin is also involved in the regulation of normal blood lipoprotein and cholesterol levels. Dietary niacin can be obtained from niacinamide, an amide of niacin, which is typically well tolerated and not associated with causing a "flushing" reaction.

Pyridoxine / Pyridoxine HCl /P-5-P

The biological functions of vitamin B6 (pyridoxine) are accomplished by its coenzyme form, pyridoxal-5-phosphate. Pyridoxal-5-phosphate's actions mainly involve the metabolism of amino acids and other nitrogen compounds. In the liver, pyridoxal-5-phosphate is essential for glucose production from amino acids through its role as a coenzyme for the transaminase enzymes. Pyridoxal-5-phosphate is also needed in the liver and muscles to access stored glycogen for glucose production, and to synthesize niacin from the amino acid tryptophan. In red blood cells, pyridoxal-5-phosphate is needed for hemoglobin synthesis, and regulation of oxygen affinity. Moreover, cell receptivity to steroid hormones is influenced by pyridoxal-5-phosphate. In the nervous system, pyridoxal-5-phosphate is needed for synthesis of several neurotransmitters, including serotonin (from tryptophan), taurine, dopamine, norepinephrine, histamine, and gammaaminobutyric acid (GABA).

MAX GLUCOSE

PROMOTE HEALTHY BLOOD SUGAR LEVELS AND HORMONE BALANCE

Many experimental and clinical observations support the fact that dietary vitamin B6 is required to maintain normal nervous system function. Along with vitamin B12 and folic acid, pyridoxal-5-phosphate is involved in single carbon metabolism, and is necessary for maintaining normal plasma homocysteine levels.

Elevated plasma homocysteine may be an independent risk factor for the development of cardiovascular disease. Also, due to its involvement in single carbon metabolism, pyridoxal-5-phosphate assists in maintaining normal immune function.

Folic Acid / Acide folique

Folic acid plays a key role in the metabolism of homocysteine. Homocysteine is a sulfur containing amino acid that is created in the body from methionine, an essential amino acid derived solely from dietary intake. High plasma levels of homocysteine appear to injure the vasculature, impairing the functional abilities of endothelial and smooth muscle cells. Elevated homocysteine also appears to be thrombogenic. Suboptimal intake of several B vitamins, including folic acid, in addition to renal failure and genetic defects in homocysteine metabolism, can all contribute to abnormal homocysteine levels.

Vitamin B-12 (as cyanocobalamin) / Vitamine B-12 (as cyanocobalamine)

Vitamin B12 is essential for normal energy metabolism of carbohydrate, fat and protein. As a cofactor for methylmalonyl-CoA mutase enzymes, vitamin B12 helps convert odd chain fatty acids and branched chain amino acids into succinyl-CoA, a common citric acid cycle intermediate. Vitamin B12 is also required for nucleic acid (DNA) synthesis, methionine synthesis from cysteine, and normal myelin synthesis in the nervous system. Along with vitamin B6 and folic acid, adequate levels of vitamin B12 are required to maintain normal plasma homocysteine levels. Elevated plasma homocysteine may be an independent risk factor for developing cardiovascular disease.

Biotin / Biotine

Biotin is a water-soluble vitamin necessary for normal growth and body function. Biotin is a key regulatory element in gluconeogenesis, fatty acid synthesis, and in the metabolism of some amino acids. Alongside its role in energy production, Biotin enhances the synthesis of certain proteins. In addition, Biotin promotes normal immunity and plays a critical role in skin health. Biotin serves as a cofactor of glucose metabolism and induces glucokinase, an enzyme that encourages cells to retain glucose for energy production rather than release it into the blood stream.

Pantothenic Acid (as d-calcium pantothenate) / Acide pantothénique (d-pantothénate de calcium)

Pantothenic acid, also known as vitamin B-5, is a coenzyme essential for energy production from dietary proteins, fats and carbohydrates. It is a component of coenzyme A and of phosphopantetheine, and is therefore essential for Krebs cycle operation.

Magnesium (as Magesium Citrate) / Magnésium (citrate de magnésium)

Magnesium plays an essential role in a wide range of fundamental cellular reactions. More than 300 enzymes require magnesium as a cofactor. Complexed with ATP, the main carrier of metabolic energy in the body, magnesium is essential for all synthetic processes: glycolysis, formation of c-AMP, energy-dependent membrane transport, transmission of genetic code for protein synthesis, and muscle function. Magnesium is involved in maintaining already normal heart function and blood pressure.

Zinc (as Zinc Citrate / citrate de zinc)

Zinc is an essential trace element required for the activity of over 300 enzymes and is involved in most major metabolic pathways. Zinc participates not only in catalytic processes, but also in the structure and stability of some regulatory proteins.

Selenium /Sélénium (as Selenium Krebs† / sélénium Krebs †)

Selenium is a cofactor to about 10 selenoproteins in the body; the most important of these appears to be glutathione peroxidase (GPX). GPX uses glutathione to reduce hydrogen peroxide and thus protect cells and plasma against free radical injury. GPX activity depends on an adequate supply of dietary selenium. Recently, selenium as selenocysteine has been identified in the active center of type 1 and 3 iodothyronine deiodinases, two important enzymes regulating the formation and degradation of the active thyroid hormone, triiodothyronine (T3).

Chromium (as Chromium Polynicotinate) / Chrome (Chrome Polynicotinate)

Chromium is an essential trace mineral that potentiates insulin action and thus influences carbohydrate, protein, and fat metabolism. The biologically active form of chromium, sometimes called glucose tolerance factor (GTF), occurs naturally in brewers yeast. GTF has been proposed to be a complex of chromium, nicotinic acid (vitamin B-3), and possibly the amino acids glycine, cysteine, and glutamic acid. Although many attempts have been made to isolate or synthesize natural GTF, none have been entirely successful. Adequate chromium nutrition is essential for the formation of GTF and subsequent control of blood glucose levels. Studies have shown that supplemental chromium may be useful for the maintenance of healthy blood sugar.

Chromium appears to act by increasing insulin binding, insulin receptor numbers, and rate of insulin receptor phosphorylation. Chromium absorption is typically less than 2% efficient and variable depending on its chemical form. Studies have demonstrated that chromium picolinate has a bioavailability comparable to that of chromium polynicotinate, and higher than that of chromium chloride. Tissues retain anywhere from 2 to 8 times more chromium from chromium picolinate compared to chromium chloride.

The typical dietary chromium intake in the U.S. can vary considerably depending on eating habits. Meats and unrefined whole grain cereal products, especially bran, are good sources of chromium. However, most self-selected diets contain less than 50 mcg per day, which is below the minimum of the Estimated Safe and Adequate Daily Dietary Intake established by the National Research Council, Food and Nutrition Board. Chromium requirements may be increased with high intake of refined carbohydrates and simple sugars, strenuous physical exercise or work, infection, or physical trauma.

Vanadium (as Vanadium Krebs† / Vanadium Krebs †)

Research suggests that vanadium may have unique activity within a number of physiological systems including glucose, lipid and bone metabolism.

Athletes have used vanadyl sulfate extensively as part of their daily supplementation program. It is a form of the trace element vanadium, which is important for normal cell function and development. Vanadyl sulfate has been shown to help maintain blood-sugar levels already in the normal range by its insulin-like effects in the liver, skeletal muscle, and adipose tissue, by activating glucose transport at the cellular level.

MAX GLUCOSE

PROMOTE HEALTHY BLOOD SUGAR LEVELS AND HORMONE BALANCE

Alpha-Lipoic Acid /Alpha-lipoïque

Alpha-lipoic acid is a fat- and water-soluble, sulfur-containing coenzyme. It functions in the body much like a B-vitamin, since it is involved in energy production. As part of several multi-enzyme complexes located in the mitochondria, alpha-lipoic acid is essential for metabolizing carbohydrates, proteins, and fats, and for the conversion of their energy into ATP. Two of these enzyme complexes, PDH (pyruvate dehydrogenase) and alpha-KGDH (alpha-ketoglutarate dehydrogenase) are part of the citric acid cycle (Krebs cycle), and as such assume a central role for general energy production. Another lipoic acid containing enzyme complex, BCKADH (branched-chain keto-acid dehydrogenase), is involved in deriving energy from the branched chain amino acids, leucine, isoleucine, and valine.

A related metabolic function of alpha-lipoic acid is its role in blood glucose disposal. This important coenzyme appears to be necessary for the normal transport of blood glucose into the cell. This may be explained by its functions in the glucose-metabolizing enzymes, PDH and alpha-KGDH, but some researchers suspect a more direct role in cellular glucose uptake at the cell membrane.

N-Acetyl-L Cysteine / N-acétyl-L-cystéine

Oxidative stress is closely related to AGE production and is a known contributing factor to many of the same health concerns thought to be associated with AGE damage. In vitro studies of N-acetyl-L-cysteine have documented inhibition of glycation induced damage to pancreatic cells. N-acetyl-L-cysteine is a potent antioxidant, serving as an intracellular precursor of glutathione.

Vandium Krebs†

Vandium Krebs† is a most important mineral with unique activity within a number of physiological systems including glucose, lipid and bone metabolism. Studies have shown that Vandium can help maintain blood glucose, cholesterol, and triglycerides. It has also possesses the ability to promote healthy cholesterol levels and blood pressure.

†Krebs = *Citrate, Fumarate, Malate, Glutarate and Succinate Complex*

Gymnema sylvestre

Gymnema sylvestre has been used as a naturopathic treatment for diabetes for nearly two millennia. It has been shown to reduce blood sugar levels when used for an extended period of time and reduces the taste of sugar when it is placed in the mouth, thus supporting the fight against sugar cravings.

Extracts of Gymnema are known to curb sweet tooth and are also beneficial for treatment of hyperglycemia, obesity, high cholesterol levels, anemia and poor digestion.

Momordica charantia (Bitter Melon)

Naturopathic medicine has it that bitter melon helps to prevent or counteract Type-II diabetes. A recent scientific study in India at the Jawaharlal Institute of Postgraduate Medical Education and Research has proved that bitter melon increases insulin sensitivity. Also, in 2007, the Philippine Department of Health issued a circular stating that bitter melon, as a scientifically validated herbal medicinal plant, can lower elevated blood sugar levels. The study revealed that a 100 milligram per kilo dose per day is comparable to 2.5 milligrams of the anti-diabetes drug Glibenclamide taken twice per day.

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Eleutherococcus senticosus

The herb *E. senticosus* contains the constituent lipophilic which can fit into hormone receptors. It is useful when the hypothalamic-pituitary-adrenal axis (HPA) is depleted. Symptoms of this condition include fatigue, stress, neurasthenia and sore muscles associated with the hypo-functioning of the endocrine system and adrenal exhaustion.

Cinnamon bark

Cinnamon bark is known to have remarkable pharmacological effects in the treatment of Type- II diabetes mellitus and insulin resistance. Cinnamon contains a flavanoid that can mimic the action of insulin and work synergistically with insulin in your body to help regulate blood sugar.

Corosolic Acid

Corosolic acid is an active compound that is isolated from the leaves of a Southeast Asian tree commonly called banaba. The leaves of this tree have been used by Filipinos for centuries to treat diabetes and kidney conditions. A study published in the journal *Planta Medica* in 2001 compared a whole-leaf extract of banaba with insulin in cell cultures. The researchers concluded that the whole herb has a glucose lowering effect. Another study reported that banaba leaf extract contains at least three active ingredients that positively affect blood sugar.

Suggested dosage: 1 in the AM with breakfast; 1 in the PM with supper

This product does not contain yeast, wheat, gluten, soy protein, milk/dairy, corn, sodium, sugar, starch, artificial colouring, preservatives or flavouring.

For optimal storage conditions, store in a cool, dry place. (59°-77 F/15°-25°C) at 35-65% relative humidity.

MAX ENERGY

SUPPORT YOUR GLANDS AND INCREASE YOUR LIFE SPAN

MAX ENERGY is specifically formulated to support both the adrenals and the thyroid as it is critical that these key glands function in unison with one another.

When the body has been under consistent stressors for a prolonged period of time, excessive cortisol is produced and the active metabolic hormones from the thyroid are suppressed. To support one and not the other is missing the key factor in total energy production and metabolism.

The body has an amazing ability to perform many tasks at the same time; however its main concern is always survival. The **PeakBio** nutritional model recognizes that performance and the ability to gain lean body mass is in direct competition with the body's ability to manage survival.

When there is competition for hormone production survival will always predominate at the expense of anabolic and metabolic hormones.



"Cells in people under stress age about 10 years faster than people that are stress free."

The key to the optimal balance is to keep two little glands known as the adrenals fuelled and content while modifying unhealthy lifestyle choices that would cause more burden. One has to remember that intense exercise and muscle breakdown is a stress to the body and maintaining optimal adrenal health is pivotal to being able to reach the next level of performance.

THE IMPORTANCE OF ADRENAL HEALTH

No bigger than a walnut and weighing less than a grape, each of your two adrenal glands sits like a tiny pyramid on top of a kidney. Don't let their size fool you however; these powerful little endocrine glands manufacture and secrete steroid hormones such as cortisol, estrogens and testosterone that are essential for life, health and vitality. They modulate the functioning of every tissue, organ and gland in your body to maintain homeostasis during stress and keep you alive. They also have important effects on the way you think and feel.

The main purpose of your adrenals is to enable your body to deal with stress from every possible source, ranging from injury and disease to work and relationship problems. It is through the actions of the adrenal hormones that your body is able to mobilize its resources to escape or fight off danger (stress) and survive. In a more primitive society that would mean being able to run away quickly, fight or pursue an enemy or game, endure long periods of physical challenge and deprivation, and store up physical reserves when they are available. In modern society, these same responses are triggered by such circumstances as a difficult boss, air pollution, family quarrels, financial problems too little sleep and overindulgence in or sensitivities to food or drugs.

ADRENAL STRESS AND TRAINING

Hormonal balance has a huge impact in determining whether you will achieve your performance goals or fall miserably short at the finish line. When thinking about hormones and athletic performance we usually start and end the discussion with anabolic hormones like testosterone. Indeed these hormones are revered by some for their ability to build muscle, but what about the hormones that break muscle down?

MAX ENERGY

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It makes sense that if we can prevent the body from catabolizing muscle and reserves, we should be able to attain the same benefits as when we build muscle. The hormone responsible for this is secreted from two small glands about the size of a large grape on top of the kidneys. If mismanaged, it leads to a reduction in athletic performance and a really horrible day.

The purpose of the adrenal gland is to help the body to cope with stress and help it to survive. Each adrenal gland has two compartments. The inner, or medulla, modulates the sympathetic nervous system through secretion and regulation of two hormones called epinephrine and norepinephrine. These hormones are responsible for the fight or flight response. These hormones are more commonly known as adrenaline. The outer, adrenal cortex, comprises eighty per cent of the adrenal gland and is responsible for producing over fifty different types of hormones. The most important is cortisol.

About Cortisol

Cortisol is a catabolic hormone that has many systemic effects. It increases blood sugar to provide fuel, inhibits inflammation, suppresses the immune system, and constricts blood vessels. It does these things for one reason: to allow you to survive when faced with immediate stress. However, the body is like the poker player that goes “all in”; it doesn’t conserve for tomorrow. If cortisol levels are kept high with stress, it will continue to react with higher and prolonged cortisol levels until the body rests. Cortisol is secreted at its highest level around 8 AM., after which there is a gradual decline throughout the day with its lowest levels occurring between midnight and 4 AM. Although cortisol is necessary in the stress response, your adrenals have another anabolic hormone known as DHEA that opposes it and helps the body with repair. ***The key is to balance these two, allowing both optimal breakdown to mobilize fuel and repair to replace and strengthen the broken-down tissue.***

The Path to Adrenal Fatigue

We usually think of exercise as a stress reliever, but your body’s main concern is survival. It doesn’t think you are running toward something; it thinks you are running away. When training and the regular stresses of our daily lives lead the body to believe it is constantly under attack, it responds by breaking down tissue to make more fuel available for escape. When taken too far, we end up in burnout. Although each individual is different, the path to adrenal fatigue follows a predictable pattern; only the timing and the severity are different from individual to individual.

The following is a list of symptoms that signal we’ve taken the adrenals to their limits:

- Tendency to gain weight and inability to lose it, especially around the waist
- High frequency of flu and other respiratory diseases, symptoms lasting longer than usual
- Tendency to tremble when under pressure
- Reduced sex drive
- Lightheadedness when rising from a prone position
- Inability to remember things
- Lack of energy in the mornings and also in the afternoon between 3 and 5 PM
- Sudden enhanced mood for a brief period after a meal
- Fatigue between nine and ten p.m., but resistance going to bed
- Need for coffee or stimulants to get going in the morning
- Craving for salty, fatty, and high-protein food such as meat and cheese
- Increased symptoms of PMS for women; periods heavy, stopped, or almost stopped on the fourth day, only to start flow again on the fifth or sixth day.

MAX ENERGY

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- Pain in the upper back or neck with no apparent reasons
- Difficulty getting up in the morning

STRESS + REST = SUCCESS

This formula has been around forever and still applies today. However, today many athletes fail to implement a very important component of this formula: rest. Rest can be implemented in many form: days off, cross-training, very low-intensity activity specific to your sport, etc.

During rest the body re-builds the tissue and systems we stressed when working out. Without rest the body is continually in a catabolic state (tear down), nose-diving to disaster. Rest is a very important aspect to optimal daily functioning and repair. Babies grow and develop largely when they sleep, which is why they need a great amount of sleep in the first and second years. Though we can't take time off to sleep as much as a baby, we can take recovery days knowing that downtime is a great way to re-build the body to a stronger state. Exercise or training goes to waste if you don't provide the right nutrients and necessary time to repair.

Planning your performance goals is best done over longer periods of time. This allows for optimal adaptation time for all systems in the body including cardiovascular, muscular, skeletal, and hormonal. We set goal plans in cycles. These cycles are referred to as macro-cycles -"big picture" or the "business plan" -and the micro-cycles - or the short-term plan. In the world of sport, most successful athletes and Olympians have a four- to eight-year long-term plan for success. To accomplish our own modest goals, long-term planning is equally beneficial.

Make sure that your training allows all the systems of your body to adapt at your own rate, and take the time to plan for proper training stimulus (stress) and rest.

STAGES OF TRAINING AND HORMONAL STRESS

Stage #1 Happy and healthy

You have good energy to train, work, and family. Hormonal training response is normal. Normal rise in cortisol and minimal rise in DHEA. Recovery is normal and you are ready for your next key workout.

What to do: You train as planned, cycling between eighty and one hundred per cent of your training plan and be sure to adhere to your scheduled rest days. Resist the temptation to go hard on easy days because you feel so good. Once in a while is okay, but over a period of four to six months you will nose-dive by oversteering your body, and your key workouts will begin to suffer. Always try to have one full day off to regenerate mentally and physically.

Stage #2 Fatigue and motivation is lagging

You feel tired or under-recovered from your workouts, but can still will yourself through the key workouts. Self-motivation for the other areas of your life may be par at best. Chronic elevation of cortisol and DHEA, creating a maladaptive response to stress.

What to do: Training plan or other stressors in your life need to be adjusted. This may be only for a short period of a few weeks or until your energy and motivation has returned. Cut your training back twenty to thirty per cent. Insert more days off, decreasing the number or degree of intense workouts, or cross-train at an easy intensity. This is a critical stage to recognize. Your body is communicating that something is not right with your training response. If you don't adjust at this stage, recovery certainly will be longer and may even take months to recover from the next stages of fatigue.

MAX ENERGY

SUPPORT YOUR GLANDS AND INCREASE YOUR LIFE SPAN

Stage #3 Fatigue with no motivation

You dread your workouts. Work is a total drag and you too are a drag in family and social matters. Your hormonal response is experiencing a steep drop in cortisol and DHEA soon after waking, and your adrenal response has tanked as well.

What to do: Obviously, training for a goal must be put on hold. Reduce your training to mild exercise with no scheduled workouts. Exercise only for short periods at a time and only if you feel like it. Get plenty of rest and eat and drink nutritiously. At this stage medically supervised supplementation and testing may be suggested.

Stage #4 Exhaustion

You are very tired, with no energy for workouts. You feel burned out, depressed, and have a decreased sex drive. The adrenal glands are depleted and are unable to emit a response to stimuli.

What to do: Training in this stage is non-existent; mild exercise may even be difficult. A mild yoga practice or stretching will be beneficial. Sleep throughout the day is craved and is necessary. Again, medical supervision for recovery may be necessary, as rest alone is often not enough to drag you out of this state.

KEY SUPPORTING FACTORS:

Coleus forskohlii

Coleus forskohlii's key constituent Forskolin resensitizes cell receptors by activating the enzyme adenylyl cyclase and increasing the intracellular levels of cAMP. cAMP is an important signal carrier necessary for the proper biological response of cells to hormones and other extracellular signals. It is required for cell communication in the hypothalamus/pituitary gland axis and for the feedback control of hormones.

Ashwagandha

This herb is considered an adaptogen which is an herb that works to normalize physiological function, working on the HPA axis and the neuroendocrine system.

Rhodiola rosea

Rhodiola rosea exerts an anti-fatigue effect that increases mental performance, particularly the ability to concentrate in healthy subjects (Darbinyan et al., 2000; Spasov et al., 2000b; Shevtsov et al., 2003) and burnout patients with fatigue syndrome (Olsson et al., 2009). Rhodiola rosea's effects potentially are related to optimizing serotonin and dopamine levels and it has been used in Russia for centuries to help subjects cope with stressful lives.

L-Tyrosine

L-Tyrosine can be converted by neurons in the brain to dopamine and norepinephrine (noradrenaline), hormones which are depleted by stress, overwork and certain drugs. By replenishing norepinephrine in the brain, mental energy levels are enhanced and a feeling of contentment often occurs. L-Tyrosine is also a precursor of two thyroid hormones.

MAX ENERGY

SUPPORT YOUR GLANDS AND INCREASE YOUR LIFE SPAN

Eleutherococcus senticosus

The herb *E. senticosus* contains the constituent lipophilic which can fit into hormone receptors. It is useful when the hypothalamic-pituitary-adrenal axis (HPA) is depleted. Symptoms of this condition include fatigue, stress, neurasthenia and sore muscles associated with the hypo-functioning of the endocrine system and adrenal exhaustion.

Astragalus

Astragalus is classified as an adaptogen, an herb that increases the body's endurance and resistance to a wide array of physical, chemical, and biological stressors. Adaptogens help normalize the functioning of various body systems by affecting the action of hormones. Adaptogens are usually beneficial in treating chronic conditions. They have been found to enhance the immune response, reduce inflammation, stabilize blood sugar, and support the hormone systems, particularly the adrenal and pituitary glands.

Bioperene®

Bioperine® is the only source of piperine to obtain patented status for its ability to increase the bioavailability of nutritional compounds. When Bioperine® was administered orally to healthy humans in a dose of 5 mg per person per day, the serum levels of different tested nutrients significantly increased by up to 60%.

Suggested dosage: 1 in the AM with breakfast; 1 at noon with lunch.

Contraindications: Do not use if you have high blood pressure.

This product does not contain yeast, wheat, gluten, soy protein, milk/dairy, corn, sodium, sugar, starch, artificial colouring, preservatives or flavouring.

For optimal storage conditions, store in a cool, dry place. (59°-77 F/15°-25°C) at 35-65% relative humidity.

MAX LIVER

SUPPORT YOUR KEY DETOXIFICATION ENGINE

Weighing in at around three pounds, the liver is the heaviest and second largest organ in the body. The liver has more than 500 functions to perform that are crucial to sustaining life; yet most people fail to realize how important the health of this organ is!

The liver's functions include:

- Synthesizing blood proteins
- Filtering blood
- Purifying and clearing waste products, toxins and drugs
- Metabolizing old hormones, internally-produced wastes and foreign chemicals
- Production of bile

Supporting these critical functions is one of the cornerstones of the **PeakBio** nutritional model.

Lactic acid and metabolic waste are constantly produced from working cells and tissue and the liver is one of the main organs to ensure these acids and wastes are metabolized and eliminated. Too often we've run functional tests on individuals and identified liver function as a major limitation to health excellence. The liver filters approximately 600 litres of blood a day which means it can make the difference in cellular environment. When the filtering is optimal, cells can metabolize more as more room is available for waste transport.

Without a functioning liver, lactic acids and other metabolic by-products accumulate creating low oxygen and nutrient availability stressing the entire system. Bile is responsible for fat breakdown as well as toxin elimination. Its formation and flow is one of the most important detoxification vehicles available to the body and **MAX LIVER** has been specifically designed to optimize this amazing detoxification machinery.

Bile is an alkaline fluid produced and ensures that the elimination of acids, toxins and metabolic wastes makes it to the digestive tract for elimination. Insufficient quantity or poor quality of bile creates metabolic suffocation and digestive congestion. It's alike an oil filter never being changed and trying to get the same performance out of an engine. Once the liver becomes compromised the other detoxification systems soon become overburdened and health deteriorates. The liver, kidneys, lungs, lymph system, bowels, and skin all work 24 hours a day to constantly filter every substance the body is exposed to and systematically attempts to catabolize and eliminate the waste products. Once the one and a half liters of bile produced by the liver each day reaches the small intestine it's imperative that it is carried out and eliminated. Constipation of sluggish bowels will cause re-toxification and **MAX FIBRE** works as a sponge to ensure that the bile detoxed with **MAX LIVER** is bound in the intestinal tract and eliminated.

Additional key functions the liver performs are:

- Assimilating and storing fat-soluble vitamins
- Metabolizing fats, proteins and carbohydrates
- Storing important nutrients (such as glycogen glucose), vitamins and minerals
- Producing urea (a primary waste product, flushed from the body in urine)
- Regulating and secreting substances important to maintaining body functions and health



"The liver is the body's carburetor, as it keeps the rest of you going."

MAX LIVER

SUPPORT YOUR KEY DETOXIFICATION ENGINE

KEY SUPPORTING FACTORS:

Choline

If the body is choline deficient, fats become trapped in the liver (fatty liver) and block correct metabolization of our foods. Fatty liver is a condition associated with obesity and alcohol consumption and often leads to cirrhosis of the liver or liver failure.

Bupleurum

Bupleurum is one of the most widely researched Chinese herbs and one of the most useful in delaying or even preventing liver cancer. Bupleurum's traditional role as a liver tonic and protector has been substantiated by decades of clinical research that prove its ability both as an anti-inflammatory and an anti-viral. Bupleurum has also been shown to speed the healing of an injured or otherwise unhealthy liver.

L-Taurine

L-Taurine supports proper bile production as it lowers serum cholesterol by combining with cholesterol to form bile. L-Taurine is also very effective at thinning bile in the gallbladder. L-Taurine is a key component of bile acids and plays a major role in optimal liver function and is required for the removal of toxic chemicals and metabolites from your body.

Cynara aerial parts

Cynara (the Brazilian name for globe artichoke) has a remarkable ability to regenerate liver cells and protect the liver against potent liver toxins. Cynara also increases bile production in the liver, and has been shown to reduce blood lipid levels. It also increases the flow of bile from the gallbladder as well as the contractile activity of the bile duct, which makes this herb indicated in conditions where there is liver cell damage or chronic liver dysfunction.

Tumeric

Tumeric has been proven to protect the liver against damage due to its anti-inflammatory properties. It has also proven effective to shrink engorged hepatic ducts, so it is strongly indicated to treat liver conditions such as hepatitis, cirrhosis, and jaundice.

Taraxacum (Dandelion) root

Taraxacum root gently tonifies (tones) and detoxifies the liver as it has a diuretic effect that can help rid the liver of toxins. It provides Vitamin A, Vitamin C, Vitamin D and Vitamin B complex, as well as zinc, potassium and iron, which is why Taraxacum is widely used as a remedy for liver ailments.

Bioperene®

Bioperine® is the only source of piperine to obtain patented status for its ability to increase the bioavailability of nutritional compounds. When Bioperine® was administered orally to healthy humans in a dose of 5 mg per person per day, the serum levels of different tested nutrients significantly increased by up to 60%.

Suggested dosage: 1 in the AM with food, 1 in the PM with food - 2 weeks out of the month.

This product does not contain yeast, wheat, gluten, soy protein, milk/dairy, corn, sodium, sugar, starch, artificial colouring, preservatives or flavouring.

For optimal storage conditions, store in a cool, dry place. (59°-77 F/15°-25°C) at 35-65% relative humidity.

MAX FIBRE

SUPPORT DIGESTIVE HEALTH AND DECREASE THE RISK OF DISEASE

Proper digestive function is the most important factor in health and performance, and yet when speaking about athletic performance it is easily the most overlooked.

The small intestine is the largest muscle in surface area and could be compared to the size of a tennis court. It contains 60-80 percent of your entire immune system, 4-6 pounds of gut bacteria and will make the difference to how quickly you heal from injury, illness and training.

The small intestinal lining is the fastest regenerating muscle replacing its immense surface area every three weeks. A proper functioning digestive tract can be viewed as biologic battery charging every cell with usable material for energy and eliminating metabolic waste and byproduct. It works intimately with the liver to de-acidify and detoxify the peripheral tissues while constantly fueling the cellular system.

The Achilles heel of this system lies in its sensitivity.

It is extremely sensitive to stress hormones, microbial imbalance and immune insults created by foods and toxins. Our digestive function is controlled by the parasympathetic “rest and digest” nervous system and few of us take the time to eat what we should, when we should and rotate food input. Identifying your food sensitivities can do wonders for your overall health and is an integral part of the **PeakBio** model. Rotating foods seasonally also greatly reduces the inflammatory burden placed on the digestive lining. When the lining of the digestive tract becomes compromised a condition known as **Leaky Gut Syndrome** results.

Once the barrier system of the digestive lining has become compromised all other functioning in the body will suffer. **MAX FIBRE** is designed to combat inflammation regardless of the cause and help maintain a proper gut ecology ensuring total body immunity is maintained. It works hand in hand with **MAX LIVER** as a sponge to absorb toxins expelled in the bile not allowing them to circulate back into the cellular system.

MAX ENERGY and **MAX GLUCOSE** help alleviate the effect cortisol and insulin both have in breaking down the lining of the gut; thus allowing the intestinal tract to function in its absorptive and eliminatory roles. This constant clean-up allows for greater cell respiration, increased metabolic waste removal and the ability of tissues to hold more buffer, do more work, and take less time to repair. Most fibres have the downside of trapping minerals, creating bowel dependence and disrupting normal bowel transit times.

MAX FIBRE has been carefully formulated to do none of the above as well as actually increase nutrient absorption and foster a healthy gut flora with an increased ability to remove lactic acid in peripheral tissue. This immense muscular system needs an ‘insurance policy’ and **MAX FIBRE** is the answer. **MAX FIBRE** also buffers the insulin response by controlling blood sugars and synergistically allows **MAX GLUCOSE** to have a greater impact on blood sugar regulation.

MAX FIBRE provides regularity without causing diarrhea, while lowering your glycemic index (blood sugar) and increasing absorption of both calcium and magnesium and other helpful minerals.



“Regular fibre intake can reduce your risk of colorectal cancer 31%.”

MAX FIBRE

SUPPORT DIGESTIVE HEALTH AND DECREASE THE RISK OF DISEASE

MAX FIBRE provides the vital dietary fibre the body needs without altering your favourite drinks or soft foods. Most people know dietary fibre keeps the body regular. What most people don't know is that they need more fibre than most diets provide.

The American Diabetic Association found *Americans get only half of the 25 - 35 grams of dietary fibre needed daily.* **PeakBio** believes that this 35 grams is probably the lower limit that we should try to intake on a daily basis. The more fibre, the better the digestive system and when you have a healthy digestive system, health and performance become easy.

Maintaining regularity of the bowels and overall digestive health is extremely important to your health and well-being as the digestive system not only processes foods and nutrients and removes solid waste from the body; it also performs many other critical functions that have a direct influence on the performance of both our immune system and our endocrine system.

Due to the length of the digestive process, many health issues can occur. These include constipation, acid reflux, peptic ulcer, lactose intolerance, gallstones and diverticulitis. These and other related digestive complaints can significantly reduce your well-being by causing pain, limiting what you can eat, and making you have to constantly be thinking about your digestion.

KEY SUPPORTING FACTORS:

Sunfiber®

Sunfiber® is odourless, tasteless, colorless (in liquid) and is amongst the most adaptable of all dietary fibres. It also features a very low viscosity, remains stable at low pH levels and is extremely resistant to high temperatures making it the perfect addition to any type of food preparation. Sunfiber® has postprandial blood glucose response, a lowering effect on blood cholesterol concentrating, improved laxation, intestinal microflora balance and prebiotic effect, immunological effects, weight control and satiety and mineral absorption and several other potential functional effects on metabolism and physiological functions.

Deglycyrrhizinated licorice (DGL) root extract

DGL has been proven to be more effective than Tagamet, Zantac or OTC ant-acid preparations in short term and ongoing treatment of gastrointestinal ulcers. DGL actually stimulates and accelerates the factors in the body that prevent ulcers. Licorice is also a mild laxative.

Slippery Elm Bark

Slippery Elm Bark has been used for centuries to soothe the digestive tract. It is so effective and safe, that the FDA has approved it as a demulcent (an agent that forms a soothing film over a mucous membrane, relieving pain and inflammation).

Aloe Vera

Aloe Vera has been shown to improve blood glucose levels and reduce symptoms and inflammation associated with ulcerative ulcers and irritated bowels.

MAX FIBRE

SUPPORT DIGESTIVE HEALTH AND DECREASE THE RISK OF DISEASE

Triphala

Traditionally used in Ayurvedic medicine, Triphala is a type of fruit that has shown many strong digestive health benefits. These include: improved digestion, constipation relief and flatulence relief and cleansing of the gastrointestinal tract.

Saccharomyces boulardii

Isolated from Lychee fruit and mangosteen, *Saccharomyces boulardii* is classified as a probiotic and has been shown to maintain and restore the natural flora in both the small and large intestine.

Suggested dosage: 1 scoop daily in water (dosing in the morning is optimal).

This product does not contain yeast, wheat, gluten, soy protein, milk/dairy, corn, sodium, sugar, starch, artificial colouring, preservatives or flavouring.

For optimal storage conditions, store in a cool, dry place. (59°-77 F/15°-25°C) at 35-65% relative humidity.

ADDITIONAL DOSING INSTRUCTIONS

Average:

For maintenance of good health this would be the suggested dosage for the **PeakBio** system. These recommendations will be for the individual who is balanced in their health or is in the maintenance phase of the **PeakBio** program.

- **Max Glucose:** 1 in the AM with breakfast; 1 in the PM with supper.
- **Max Energy:** 1 in the AM with breakfast; 1 at noon with lunch. This product has the potential to interrupt sleep cycles if taken too close to bedtime. Taking in the PM with supper may be fine but if sleep is interrupted dosing should be moved to lunch.
- **Max Fibre:** 1 scoop a day in water; dosing in the morning is optimal.
- **Max Liver:** 1 in the AM with food, 1 in the PM with food 2 weeks out of the month.

Athletes or Stressed Individuals:

Individuals who are under heavier amounts of stress will want additional supplementation to ensure their body chemistry is supported.

- **Max Glucose:** 1 in the AM with breakfast; 1 in the PM with supper.
- **Max Energy:** 2 in the AM with breakfast; 2 at noon with lunch. This product has the potential to interrupt sleep cycles if taken too close to bedtime. Taking in the PM with supper may be fine but if sleep is interrupted dosing should be moved to lunch.
- **Max Fibre:** 1 scoop a day in water; dosing in the morning is optimal.
- **Max Liver:** 1 in the AM with food, 1 in the PM with food 2 weeks out of the month.

Blood Sugar Compromised:

Balancing blood sugars in diabetic individuals or individuals with hypoglycaemia / dysglycemia is a major task in ensuring optimal health. Those individuals who already have compromised blood sugar balance should be supplemented and adhere to strict dietary modifications.

- **Max Glucose:** 2 in the AM with breakfast; 2 in the PM with supper.
- **Max Energy:** 2 in the AM with breakfast; 2 at noon with lunch. This product has the potential to interrupt sleep cycles if taken too close to bedtime. Taking in the PM with supper may be fine but if sleep is interrupted dosing should be moved to lunch.
- **Max Fibre:** 1 in the AM in water, 1 scoop in the pm with water.
- **Max Liver:** 1 in the AM with food. Supplementation in the evening should not be used until blood sugar balance has been established.

Burnt out:

Very fatigued individuals or over trained athletes require special consideration when using supplementation. Often times the digestive function is seriously impaired which make absorption limited. Any form of detox is not recommended.

- **Max Glucose:** 1 in the AM with breakfast; 1 in the PM with supper.
- **Max Energy:** 2 in the AM with breakfast; 2 at noon with lunch. This product has the potential to interrupt sleep cycles if taken too close to bedtime. Taking in the PM with supper may be fine but if sleep is interrupted dosing should be moved to lunch.
- **Max Fibre:** ½ scoop in the AM in water, ½ scoop in the PM with water.