

# I N N A T E

RESPONSE FORMULAS®

*V i s m e d i c a t r i x n a t u r a e*

## Men's Multi

100% Whole Food Foundational Dietary Supplement

### Formula Rationale

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# Formula Rationale of Men's Multi™

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Men's Multi is a well rounded multiple vitamin and mineral formula in which ColdFusion FoodState® Nutrients, with all of the inherent benefits of Vital Food Factors, are combined with eleven concentrated whole herb extracts. A complete spectrum of trace minerals is included as well as the nutrient dense *Hydrilla verticillata* and Pumpkin Seed Extract to provide a strong foundation for every system in a man's body. By supporting the fundamental processes of the body, vital energy can be conserved and used to enhance and create elevated feelings of well-being. The inclusion of superior adaptogens, including Panax and Siberian Ginseng enhance the body's ability to deal with and recover from stress.

The inclusion of antioxidant nutrients such as Vitamins E, C and Selenium along with the active antioxidant herbs Ginseng, and Gingko support performance, optimal health and anti-aging. Botanical Extracts are selected from revered herbs that have been proven through time to assist in adaptation to stress, to possess powerful free radical scavenging activity, and act as tonics supporting the functions of a man's physiology. Many of these botanicals have multiple anti-aging components not found in most diets.

## **FoodState® Nutrients:**

### **Vitamin A**

Vitamin A as retinol is a yellow fat soluble vitamin that supports functions of the retina of the eyes, vision, cellular reproduction and growth. Vitamin A is essential to the functions of the skin's maintenance and repair and to the immune system. Both forms of Vitamin A, beta-carotene (Provitamin A) and fat soluble vitamin A (Retinol) are important to the human physiology. Cells require vitamin A to communicate from cell to cell.

### **Vitamin C**

A primary role of Vitamin C is production of collagen, which is prevalent in all connective tissues of the body. It is also critical to the functioning of the immune system: it stimulates white blood cell and interferon production, supports antibody response and secretion of appropriate hormones. Vitamin C supports the nervous system as well as adrenal function. It also provides antioxidant protection, promotes wound healing and red blood cell formation and plays a role in both protein and calcium metabolism. It is required for the absorption and utilization of many other nutrient factors. As we age the sex glands develop a greater need for C and will draw it from other tissues, leaving these tissues vulnerable if levels are low.

### **Vitamin D3**

Vitamin D is considered both a vitamin and a hormone since our bodies can produce it when exposed to sunlight. Vitamin D is known to stimulate the absorption of calcium. D3 is the active hormonal form of vitamin D. Excessive amounts of vitamin D are not recommended as they can result in toxicity (1,000 IU would be the max-

imum upper limit)

**Food Sources:** Cod liver oil, cold-water fish, butter, egg yolks, some mushrooms, dark green leafy vegetables. Sunlight on the skin is the primary source.

### **Vitamin E**

Vitamin E's primary function is that of a cellular antioxidant, protecting lipids from peroxidation. About 90% of the vitamin E stored in the body is located in the adipose tissue. Vitamin E is the "chain breaking antioxidant" because it will donate one of its electrons to a free radical to stop a free radical chain reaction. Natural vitamin E's shape enables it to fit perfectly in between the phospholipids of the cell membrane, standing guard until needed. It neutralizes free radicals and can be recycled and reused with the assistance of other antioxidants. Diets that are low in Vitamin E, and where serum levels are low in Vitamin E, have higher incidences of CVD. Vitamin E has been shown in several studies to reduce the risk of coronary heart disease mortality, with even greater benefits found when tested on non-smokers.

**Food Sources:** Polyunsaturated fats in vegetable and seed oils, seeds, nuts, and whole grains.

### **Vitamin K**

Necessary for the manufacture of blood clotting factors, for bone building, and valued for its antioxidant properties. Healthy intestinal flora will produce Vitamin K. Vitamin K plays an essential role in the activation of osteocalcin that works with calcium in bone building.

**Food Sources:** Broccoli, cabbage, turnips, kale, greens.

### **B-1- Thiamine**

The first B vitamin to be discovered during investigation into the cause of Beri Beri. It is important in the process of the Krebs cycle, which enables the body to manufacture energy from glucose. Thiamine has been shown to affect emotional well being. This vitamin is extremely sensitive to alcohol, the tannins in black tea and coffee, and sulfites.

**Food Sources:** Yeast, seeds, legumes, whole grains, nuts.

### **B-2- Riboflavin**

Functions within enzyme systems involved in the metabolism of carbohydrates, fats and proteins. It is important for cellular respiration and for the regeneration of glutathione. Riboflavin has been indicated as helpful in the reduction of migraine headaches, cataracts and sickle cell anemia.

**Food Sources:** Yeast, liver, seeds, legumes, whole grains, nuts.

### **B-3- Niacinamide**

Is involved in all functions of the B complex. It is a component of the co-enzymes NAD and NADP, which are involved in over 50 chemical reactions of the body. It has been found to benefit insulin secretion as well as the manufacture of many body compounds including sex and adrenal hormones. Niacin has been used in a number of studies to determine its cholesterol lowering effects with excellent results.

**Food Sources:** Yeast, seeds, legumes, whole grains, nuts.

## **B-6- Pyridoxine**

This member of the Vitamin B-Complex is important to the formation of the body's proteins and structural compounds, chemical transmitters in the nervous system, prostaglandins and red blood cells. It functions as a co-factor in essential metabolic processes involved with the synthesis of proteins including methionine and homocysteine. Vitamin B-6 supplementation has demonstrated a significant blood pressure lowering effect in a human clinical study<sup>56</sup>. It is also a co-factor in modulating hormonal balance and immune function. B6 may help those with MSG sensitivity since the proper metabolism of monosodium glutamate requires B6.

**Food Sources:** Yeast, seeds, legumes, whole grains, barley grass, nuts, cauliflower, avocado.

## **Folic Acid**

Folic Acid works with B-12 in many vital functions. It is critical to DNA synthesis and cellular division. Folic acid plays a vital role in the prevention of atherosclerosis and the reduction of homocysteine levels. Since high homocysteine levels have been linked to an increased possibility of osteoporosis, Folic acid is a valuable supplemental nutrient for women. Folic acid also plays a role in the prevention of osteoporosis, depression and possibly cancer.

**Food Sources:** Brewers yeast, dark green leafy vegetables, liver, whole grains, nuts, broccoli, legumes, mushrooms, artichokes.

## **B-12- Cobalamin**

B-12 works with folic acid in production of DNA, red blood cells, and the myelin sheath that surrounds the nerves. A human clinical study in Dublin, Ireland, published in the January 12, 2002 issue of *The Lancet* found that homocysteine levels lowered significantly while participants took folic acid. However, they found that keeping adequate B-12 levels were necessary to maintain the reduced homocysteine levels. One of the primary metabolic roles of Vitamin B-12 is to act as a co-enzyme in the conversion of homocysteine to methionine and in the formation of 5-methyl THF (tetrahydrofolate) in the body. Since the formation of 5-methyl THF is irreversible, a deficiency of B-12 or methyl donors traps body folate in the methyl form, thus making it unavailable for its primary metabolic functions. This essential B-complex vitamin is important to prevent pernicious anemia. Aging may increase our need for supplementation. Supplementation is especially recommended for vegetarians.

**Food Sources:** Liver, clams, seafood, fish, whey, eggs, hard cheeses, some fermented foods.

## **Biotin**

Functions as an essential co-factor for four enzymes. It is involved in glucose metabolism, the breakdown of essential fatty acids in energy metabolism, amino acid utilization and cell growth and replication. It increases the strength of nails and the health of hair. Healthy intestinal flora is essential for the production of biotin by the body.

**Food Sources:** Brewers yeast, liver, whole grains, nuts, legumes, and mushrooms.

## **Pantothenic Acid (Vitamin B5)**

Is an important component in the manufacture of co-enzyme A (CoA) and acyl carrier protein (ACP). These critical body chemicals are vital to the manufacture of adrenal hormones and red blood cells. Pantothenic acid stimulates the adrenal cortex, increases the production of cortisone and other adrenal hormones. Both CoA and ACP play essential roles in fat and carbohydrate utilization, energy production.

**Food Sources:** Brewers yeast, egg yolks, peanuts, mushrooms, oats, soybeans, split peas, whole grains, legumes, sweet potatoes, broccoli, organ meats, etc.

## **Calcium**

Calcium is the most abundant mineral in the body and is vital to the structure of bones and teeth, contraction of muscles, enzyme activity, regulation of the heartbeat, release of neurotransmitters and clotting of the blood. Studies indicate that a moderate potency of FoodState® calcium is beneficial to the bones and osteoporosis prevention. Some studies indicate that high calcium intake can contribute to calcium excretion and reduced bone building. Some research has pointed to calcium supplementation as a means of supporting proper blood pressure.

**Food Sources:** Sesame seeds, tahini, green leafy vegetables, dairy products, hydrilla, shellfish, molasses, almonds.

## **Iron**

Iron is essential to the hemoglobin molecules of red blood cells where it functions in oxygen and carbon dioxide transportation. It is also important to the production of DNA and in the energy production cycle. Our blood could not carry oxygen without adequate levels of this vital mineral.

**Food Sources:** Dried fruits, cherries, green leafy vegetables, organ meats, eggs, fish, liver, poultry, eggs, black strap molasses.

## **Iodine**

The primary function of Iodine is in the production of thyroid hormones. Iodine is an essential component of the thyroid hormones T4 and T3. In nature most of the iodine resides in the ocean. Mountainous areas can be deficient of iodine in the soil and water. Iodine deficiencies are common both in the mountains and valleys. The healthy human body contains about 15-20 mg. of iodine, 70-80% of which is located in the thyroid gland. Iodine also plays an important role as a radioprotectant and can be taken a preventative and used in adjuvant therapy. Goiter is an iodine deficiency disorder (IDD). RDI for Iodine is 150 mcg. Over 600 mcg daily is too high for any extended length of time.

**Food Sources:** Seaweeds, seafood, iodized salt.

## **Magnesium**

Magnesium occurs abundantly in nature however, much is lost in the processing and refining of foods. As a result, low Magnesium intake is very common. Magnesium primarily functions in enzyme activation, with participation in more than 300 enzymatic reactions in the body including the enzymes responsible for the transcription, translation and replication of nucleic acids (RNA and DNA). It plays a critical role in energy production through pathways of carbohydrate, lipid and protein metabolism and in the synthesis of ATP in the mitochondria. Magnesium is important for bone growth, the metabolism of calcium, and the structure and function of the muscles. In the sodium and potassium pump, magnesium is necessary for the active transport of potassium out of the cells. This mineral is crucial to healthy heart function. Also plays a role in energy production, bone structure, muscle structure and function. Some diuretic drugs cause the excretion of magnesium, a potentially dangerous situation in CVD if supplemental sources of magnesium are not provided.

**Food Sources:** Kelp, Wheat Bran, Nuts, Seeds, Apricots, Collard greens, Dandelion leaf, Avocado, Beets, Nettle leaves, Dulse, Pumpkin seeds, Green Leafy Vegetables, Legumes.

## **Zinc**

Zinc is found in every cell of the body and participates in many enzyme systems and body functions. It is important to all aspects of the immune function, aiding in wound healing and skin health, sexual function, and sens-

function. Zinc is involved in the cell division process and is therefore critical for proper development of the unborn child. A high level of zinc is found in semen. Zinc is important to the functions of the prostate gland, and this gland contains higher levels of zinc than any other organ.. The efficacy of zinc is due in part, to zinc's involvement with androgen metabolism in men. Zinc has been shown to inhibit the activity of the enzyme that converts testosterone to DHT, and to inhibit prolactin secretions. Deficiency appears to reduce production of T & B lymphocyte cells. Zinc has anti-viral properties. The most critical trace mineral for male reproduction, Zinc affects testosterone levels, sperm count, sperm motility and prostate function. An important non-enzyme function of Zinc is the enabling of the transcription factor to bind with DNA and stimulate transcription of a gene.

**Food Sources:** Pumpkin seeds, sunflower seeds, Seafood, oysters, mushrooms, eggs.

### **Selenium**

Selenium is an important component of the vital antioxidant enzyme glutathione peroxidase, which works with Vitamin E to prevent free radical damage (lipid peroxidation) to cells. Glutathione peroxidase has a function in both Phase I and Phase II liver detoxifying systems, thereby making selenium a part of proper detoxification. Selenium is also important to muscle function.

**Food Sources:** Brewers yeast, food grown in selenium rich soil, Brazil nuts, wheat germ, whole grains, hibiscus flowers, Fo-Ti, catnip herb, milk thistle seed.

### **Copper**

Copper functions as part of several proteins and in several key enzymatic reactions in the body. An important component of connective tissue, bone formation, skeletal mineralization and the stabilization of connective tissue in the cardiovascular system. In the central nervous system copper is required for the formation and maintenance of the myelin sheath.

**Food Sources:** Organ meats, seafood, nuts, legumes, molasses, raisins.

### **Manganese**

Manganese is involved in proper skeletal formation and growth, and in the metabolism of fats and carbohydrates. It plays a role in many enzyme systems and their activation, including blood sugar control, thyroid hormones, SOD and energy metabolism. Manganese has been found to support anti-oxidant activity.

**Food Sources:** Whole grains, green leafy vegetables, legumes, nuts, pineapple, egg yolk.

### **GTF Chromium**

GTF (Glucose Tolerance Factor) chromium exerts a profound effect on the body's blood sugar control mechanisms. This form of chromium is essential for the proper function of insulin in the body and can play a significant role in blood sugar modulation. Supplementation with chromium has been shown to promote lean body tissue.

**Food Sources:** Brewers yeast, honey, grapes, whole grains, clams.

### **Molybdenum**

Molybdenum functions as a component of several detoxification enzymes including those involved in the detoxification of sulfites, alcohol, and uric acid. It is a transition element that can act as an electron transfer agent in oxygen-reduction reactions. Molybdenum's key role is as an enzyme co-factor. It protects steroid hormone receptors

from inactivation.

**Food Sources:** Legumes, whole grains, milk, dark green vegetables.

### **Additional Foodstate® Nutrients**

#### **Beta Carotene**

Beta-carotene is the most active provitamin A (retinol) source of the carotenoids. Approximately two thirds of absorbed Beta carotene is converted into Vitamin A. Vitamin A is essential to cell growth, development and communication from cell to cell. Vitamin A is essential for the health and functioning of the retina of the eye. Conversion of beta-carotene provitamin A to vitamin A depends on several factors including protein availability, thyroid hormones, adequate levels of zinc and vitamin C. Some people (such as those with diabetes or a liver dysfunction) may not efficiently convert betacarotene to vitamin A. This comprehensive nutritional supplement provides both forms for maximum efficacy of this essential nutrient. Natural Beta-carotene is more effective in the reduction of oxidation than synthetic forms, especially when found in whole foods. Beta carotene is one of several carotenoids that support cardiovascular health. Beta carotene can be useful for supporting body with sunburn and to help protect from ultraviolet rays. Research indicates that Beta-carotene supplies antioxidant protection to the lungs, liver adrenal glands, kidneys, skin and colon.

**Food Sources:** Yellow, Green, and Orange fruits and vegetables such as: Apricots, Mango, Carrots, Papaya, Kale, Okra, Broccoli, Green plants, Sweet Potatoes, Squash and Spinach.

#### **Choline**

This is essential in the manufacture of the vital neurotransmitter acetylcholine and main components of our cell membranes. It is also vitally important to the health of the liver and the function of fat metabolism. Choline is also needed for the health of the brain and memory function.

**Food Sources:** Liver, eggs, banana, cauliflower, grape juice, peanut butter, lecithin.

#### **Inositol**

Functions closely with choline in the building of cell membranes, the health of the liver and in nerve function.

**Food Sources:** Brewers yeast, citrus fruits, whole grains, nuts, seeds, legumes, meat, and dairy products.

#### **Potassium**

Potassium is an essential element for maintaining proper fluid balance in the cells. Potassium plays an essential role in transmission of nerve impulses, skeletal muscle contractility and in maintaining normal blood pressure. Potassium and sodium exchange places during the contraction of muscles and the transmission of nerve impulses. Keeping sodium levels low and potassium levels adequate is an important aspect of hypertension treatment as they must exist in balance with each other. Potassium is important to ensure renal excretion of sodium and helps people with hypertension reduce chances of renal damage and strokes. Diuretic drugs can deplete potassium and therefore can be dangerous.

**Food Sources:** Celery, Tomatoes, Lettuce, Escarole, Radish, Cucumber, Spinach, Beets, Asparagus, Cabbage, Cilantro, Carrot, Barley, Basil, Kudzu, Okra, Kale, Papaya, Cherry, Ginger, Acerola, Garlic.

## **Boron**

This is an important mineral for the maintenance of bone and joint function. It has been found to reduce excretion of calcium and magnesium. Boron is important in the production of the active form of Vitamin D, D3. The USDA conducted revealing research on Boron, indicating its usefulness in the health and structure of the skeletal system.

**Food Sources:** Plums, strawberry, peach, dandelion, celery, asparagus, apple, tomato, lettuce, cauliflower, beets and other fruits and vegetables.

## **Vanadium**

Vanadium functions in hormone, cholesterol and blood sugar metabolism. It is a co-factor in several enzyme pathways and is involved in some thyroid functions.

**Food Sources:** Fish, seaweed.

## **Additional Foods & Extracts:**

### *Hydrilla verticillata*

A fresh water, rooted algae, Hydrilla has the natural ability to conserve and store its own vital energy. *Hydrilla verticillata* is a rooted macrophyte, meaning that its roots draw nutrients from the soil or base of freshwater lakes, rivers and streams. Unlike algae (known as surface macrophytes) which float on top of fresh water and absorb nutrients from the surface, Hydrilla lives below, protected from airborne contaminants. Submerged macrophytes like Hydrilla accumulate more nutrients from the soil and water than surface macrophytes, and therefore have a higher mineral content. Hydrilla provides an abundant source of: Calcium, Magnesium, Potassium, Phosphorus, Manganese, Iron, Chlorophyll, B-Complex, Beta Carotene, 17 amino acids, 8 Fatty Acids, Polysaccharides, and all of the essential trace minerals. This green super food has potent antioxidant and free radical scavenging properties. Energy enhancing, it also enhances nutrient absorption. Indicated as having radioprotective properties (inhibits damage caused by radiation). The nutrients in Hydrilla support muscle building and have anti-aging factors such as RNA/DNA, polysaccharides, SOD, and co-enzymes. Hydrilla is ecologically sound, as it grows abundantly in fresh waters. It supplies antioxidant and detoxifying activity and is important to the proper disintegration of the tablets.

### **Alfalfa** (*Medicago sativa*)

Alfalfa has a high mineral content and is especially rich in calcium, magnesium and trace minerals including boron, as well as vitamins K, C, A, E, folic acid and other B vitamins, flavonoids, phytoestrogens and chlorophyll. Alfalfa nourishes the blood and liver and is indicated as useful in cholesterol reduction. It is also important to tablet disintegration.

## **Botanical Extracts:**

### **Pumpkin Seed Extract** (*Cucurbita Pepo*)

Pumpkin seeds contain important Omega-3 Fatty acids, Phytosterols and Zinc which support the health of the prostate gland. This nutrient dense food contains Protein, Vitamin B Complex, Iron, Zinc, Vitamin A, Phosphorus and Calcium.

**Actions:** Tonic, food, diuretic.

**Constituents:** Oils (linoleic acid, oleic and palmitic acids), cucurbitacins, zinc.

### **Eleuthero Root** (*Eleutherococcus senticosus*)

This primary adaptogen supports the body's innate stress response, immune system and endocrine system including the adrenal glands, spleen, liver and thymus gland. The subject of numerous studies, this rejuvenative herb is revered internationally for enhancing longevity, improving general health, stamina, oxygen metabolism and memory. Research demonstrates a beneficial effect on modulation of blood pressure and cholesterol levels. Eleutherococcus supports the nervous system and mental functions, while also assisting with depression. An effective antioxidant herb possessing greater antioxidant activity than the Vitamins C and E. This primary adaptogen supports adjustment to high altitudes and athletic performance when used for an extended period of time. A superior tonic, with the greatest benefits experienced after continuous use.

**Actions:** Adaptogen, antioxidant, tonic, radio-protective, blood sugar regulator, immunostimulant, anti-inflammatory.

**Constituents:** eleutherosides A-G, lignans, santicosides A-f, triterpenes- eleutherosides I-M, oleanolic acid, phenylpropanoids including caffeic acid, vitamin E, polysaccharides, B-sitosterol, saponin glycosides.

### **Fo-Ti** (*Polygonum multiflorum*) **Ho Shou Wu**

Considered China's most renowned longevity herb, Fo-Ti is a rejuvenator, supports natural energy and is a general tonic. Part of its anti-aging properties stem from enhanced levels of SOD (superoxide dismutase) and decreased levels of peroxides and other free radicals. Used in Ayurvedic traditions for strengthening the bones, blood, hair, muscles, tendons, ligaments, liver, kidney and the nervous system. Fo Ti is often combined with Gotu Kola as rejuvenative for the mind. In China it is used to support non-specific immunity. Another important benefit is its liver protecting properties.

**Actions:** Anti-aging, immune tonic, hepatoprotective, tonic, cardiogenic.

**Constituents:** Anthraquinones, lecithins, phosphorus, rhapontin, B-sitosterol, catechins, cyanidins, stilbenes glycoside gallates, zinc, calcium, iron, manganese, trace minerals.

### **Gotu Kola Herb** (*Centella asiatica*)

Considered one of the most important rejuvenative herbs in Ayurvedic medicine. Supports and revitalizes the nervous system and brain. Research indicates that it is beneficial for the skin, including acne, eczema, other chronic skin conditions and hemorrhoids. Nourishes connective tissue and increases keratinization (the principal constituent of the epidermal layer of skin, hair, nails and tooth enamel). A tonic that is strengthening to the adrenal gland and immune system. Useful in fibrocystic breast disorders. This bright green herb calms the mind, considered the most sattvic and spiritual of all herbs in India.

**Actions:** Anti-inflammatory, CNS depressant, vulnerary, brain tonic, anti-anxiety.

**Constituents:** Triterpenoid saponins, sapogenins, volatile oil, Rhamnose, arabinose, centellose, B-sitosterol, campesterol, amino acids, flavonols, quercetin, carotenoids, polyphenols.

### **Ginger Root** (*Zingiber officinale*)

Ginger is known to possess supportive cardiogenic activity. Ginger is an excellent digestive tonic, antioxidant, carminative, circulatory tonic, cardiogenic, and has shown benefits in several types of inflammation. It is also considered a potentiator that enhances the action of other herbs when combined in a formula. Rich in digestive enzymes and phytonutrients, research indicates Ginger is a digestive aid with proteolytic enzyme activity that increases bile production. A powerful antioxidant, Ginger also provides secondary adaptogenic properties. Aids peripheral circulation and is balancing to the prostaglandins important in cardiovascular disease, menopause, PMS,

arthritis, and inflammation.

**Actions:** Stimulant, carminative, anti-spasmodic, antioxidant, anti-inflammatory, circulation stimulant, digestive rich in protective phenolic compounds.

**Constituents:** Volatile oils: zingiberene, bisabolene, citral, cineole, camphene, Pungent principles, phenolic compounds: gingerols, gingerdiols, shogaols.

### **Ginkgo Leaf** (*Ginkgo biloba*)

Ginkgo trees are some of the oldest trees on earth. Ginkgo is often thought of as the brain and memory herb. This herb supports the vascular system strengthening cerebral circulation and brain function. Ginkgo is useful for chronic vascular insufficiency, short term memory improvement, depression and tinnitus. Ginkgo is safest used in non-standardized forms. The leaves of the Ginkgo tree are used for a range of vascular support issues including increasing circulation in the brain and for circulation to the extremities.

**Actions:** Vasodilatory, anti-inflammatory, free radical scavenger.

**Constituents:** Lignans (ginkgolides), flavonoids, quercetin, Terpenes, tannins, catechins

### **Hawthorn Berry** (*Crataegus spp.*)

Hawthorn has been used and written about since the 1st Century AD. Hawthorn is the premier cardiogenic and possesses powerful antioxidant activity included in this formula for general cardiovascular support, connective tissue stabilization, and flavonoid content. Hawthorn is a cardiovascular tonic in the truest sense of the word, working to increase blood supply to cardiac muscle and assisting in proper functioning; directly enhancing exercise tolerance. Hawthorn supports, nourishes and strengthens the connective tissues of the body due to the high flavonoid content.

**Actions:** Cardiogenic, cardioprotective, antioxidant, collagen stability, mild astringent, hypotensive, cholesterol reduction.

**Constituents:** Saponins; glycosides; flavonoids, flavanols including aglycones & o-glycosides, quercetin, kaempferol, flavone-O-glycosides, flavone-C-glycosides, vitexin, flavans, proanthocyanidins and procyanidins; tannins; nitrogen containing compounds including: Choline, acetylcholine, dopamine, adenine, adrenaline, norepinephrine; and acids including: Ascorbic, caffeic, and pentacyclic triterpenoid acids; ursolic, crataegolic and oleanolic.

### **Licorice Root** (*Glycyrrhiza glabra*)

In traditional Chinese medicine Licorice root is called the great “harmonizer” or “peacemaker” because it is believed that it harmonizes the actions of all other herbs. It holds a prominent place in Chinese herbology, being the most often used herb in this system of traditional health treatment. Licorice is also among the most widely studied of all herbal medicines. Licorice has a marked effect on endocrine function and is a highly supportive tonic for the adrenal glands. It increases the production of cortisol, DHEA, and aldosterone supporting the adrenal cortex. Licorice contains triterpenes which are metabolized in the body into molecules similar in structure to adrenal cortex hormones. These components are able to bind to the glucocorticoid receptors on cells and exert glucocorticoid-like effects.

**Actions:** Adrenal agent, anti-inflammatory, anti-spasmodic, anti-hepatotoxic, demulcent, expectorant, anti-viral, estrogenic, anti-allergenic, antibacterial.

**Constituents:** Triterpenes, flavonoids, isoflavonols, phytosterols, lignans, amino acids, coumarins, glycyrrhetic acid and, its major active component, glycyrrhizin.

*NOTE:* There are cautions for licorice use when hypertension is present. However, in the cases where licorice caused edema, copious amounts were consumed, ranging from 2-7 grams daily. Men's Multi contains very small, supportive levels of this wonderful herb.

### **Nettle Leaf** (*Urtica dioica*)

Also known as Stinging Nettle, this is one of the most nutritious tonic herbs on the planet. Naturally rich in the color pigment Chlorophyll. Nettle has alterative properties that support and nourish the blood. Research has shown nettles to be supportive to the immune system, urinary tract and skeletal system. Nettle leaf is included this formula for its support to the blood and nutritive properties. Nettles activate the metabolism while strengthening and toning the whole physiology.

**Actions:** Tonic, nutritive, diuretic, astringent, mild hypotensive, alterative, antiallergenic, hemostatic.

**Constituents:** Histamine, flavonoids, indoles, triterpenes, Vitamin C, carotenoids, minerals such as potassium, iron, trace minerals, silica, and acetylcholine.

### **Panax Ginseng**

One of the most famous of all plants, Panax ginseng has been used for centuries as a revitalizing tonic, adaptogen and panacea. It possesses an incredibly broad range of nutritional and therapeutic properties. Panax supports the adrenal glands, cardiovascular system, immune system, spermatogenesis and liver function. It is included in Men's Multi for its energizing and adaptogenic support. Panax enhances the body's ability to cope with stress including the stress factors associated with physical exercise. It also helps with altitude, temperature adjustment and proper blood sugar balance.

**Actions:** Adaptogen, antioxidant, hypoglycemic, tonic, antihepatotoxic, CNS tonic.

**Constituents:** Saponins, polysaccharides, pectin, vitamins B1, B2, B12, ginsenosides, triterpenoids, panaxosides, saponenin, gynosaponins.

### **Sarsaparilla Root** (*Smilax off.*)

This male tonic contains phyto-steroidal compounds that support testosterone activity in the body. Used as a tonic for the male system.

**Actions:** Alterative, hepatoprotective, diuretic, tonic

**Constituents:** Phyto-steroids, saponin glycosides.

### **Dandelion Root & Dandelion Leaf** (*Taraxacum officinale*)

One of the richest botanical sources of potassium and trace minerals, Dandelion leaf is one of the most ideally balanced diuretics. This common herb is used in the Ayurvedic healing tradition for the lymph system, liver, gallbladder and breast health. The root supports the liver and gallbladder and is an excellent liver tonic. A tonic food for the urinary system and gentle diuretic.

**Actions:** Root: Diuretic, hepatic, cholagogue, tonic, bitter, nutritive, choloretic, laxative, hypoglycemic. Leaf: Diuretic, tonic, nutritive.

**Constituents:** Root: Triterpenes (taraxol, taraxerol), sterols, inulin, pectin, phenolic acids. Leaf: Carotenoids, lutein, violaxanthin, potassium, vitamins A, B, C and D.

## References:

1. Green, James. *The Male Herbal, Health Care for Men & Boys*, Herbalist © 1991 The Crossing Press
2. Hoffmann, David. *Medical Herbalism*. Rochester, VT: Healing Arts Press ©2003
3. Murray, Michael T., ND *Encyclopedia of Nutritional Supplements* © 1996
4. Dunne, Lavon J. *Nutrition Almanac Third Addition* McGraw-Hill ©1990
5. Brigitte Mars *Dandelion Medicine*, Herbalist AHG © 1999, Storey Books
6. McCaleb, Rob, Leigh, Evelyn & Morien, Krista *The Encyclopedia of Popular Herbs*, © 2000 Prima Health
7. Leung, AL, Foster S. *Encyclopedia of Common Natural Ingredients* 2nd Ed. © 2003 John Wiley & Sons, Inc. NJ
8. Winston, David AHG. *Saw Palmetto for Men & Women* © 1999, Storey Books
9. Hobbs, Christopher, Brown Stephen. *Saw Palmetto The Herb for Prostate Health*, ND © 1997, Botanica Press
10. Upton, Roy. Editor *Hawthorn Berry, American Herbal Pharmacopoeia™* June 1999, © 1999 American Herbal Pharmacopoeia™
11. Foster, Steven. *Siberian Ginseng*, © 1991 American Botanical Council
12. Farnsworth, NR et al “Siberian Ginseng (*Eleutherococcus senticosus*): Current status as an adaptogen.” *Econ. Med Plant Res* 1, 156-215, 1985
13. Fahim, MS, et al. “Zinc treatment for the reduction of hyperplasia of the prostate.” *Fed Proc*, 35:361, 1976
14. “Saw palmetto – A Critical Review Part 1,” *MEDI HERB Professional Review* Jan 1998 No. 60
15. “Saw palmetto – A Critical Review Part 2,” *MEDI HERB Professional Review* Feb 1998 No. 61
16. *Licorice, The Review of Natural Products*, Jun 1989 © 1997 Facts & Comparisons
17. Brown, Donald J, ND. “Licorice Root-Potential Early Intervention for Chronic Fatigue Syndrome?” *Phytotherapy Review & Commentary*, Townsend Letter for Doctors & Patients, Aug/Sept 1996
18. Motono, M. “Manufacture of topical cosmetics and pharmaceuticals containing Ginger extracts as absorption accelerators.” *ChemicalAbstracts* 1990;112:223137
19. Bove, Mary, ND. “Adrenal Function, Stress and Botanical Medicine” *Medicines from the Earth Proceedings.* Black Mountain, NC: 2003
20. Mills Simon, Bone Kerry. *Principles and Practice of Phytotherapy*. Edinburgh, UK: Churchill Livingstone © 2000
21. Murray, Michael T. *Encyclopedia of Nutritional Supplements*. Rocklin, CA: Prima Publishing © 1996
22. Blumenthal, Mark. *The Complete German Commission E Monographs*. American Botanical Council (ABC). Austin, TX: Integrative Medicine/ ABC © 1998