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RESPONSE FORMULAS®

Food Multi II

Vis medicatrix naturae

Product Rationale

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FOOD MULTI II Rationale
Avoid Prescription Interactions

Food Multi II Rationale

Crafted as a foundational formula for individuals taking commonly prescribed drugs, Food Multi II provides superior whole food nutrition without the inclusion of Vitamin K, Iodine, Iron and low levels of Vitamin E. Although these three nutrients are essential for health, they are known to interact with some commonly prescribed drugs*. A food/drug interaction may affect how a drug is used in the body, or how the drug is excreted from the body, two processes that may affect how a drug functions. Thirdly, some foods may interfere with drug absorption, making the drug less effective. A drug/nutrient interaction occurs when a drug affects the use of a nutrient in the body.

Food Multi II was formulated and reviewed by our advisory Naturopathic physician for its safety in conjunction with prescription drugs, however it is recommended to research concurrent contraindications of name brand and generic drugs an individual may be taking.

Individuals taking prescriptions or OTC's, are usually nutritionally deplete of one or more key vitamins and minerals and would benefit by taking a multi-vitamin and mineral formula. However, due to common nutrient/drug interactions, their ability to take a balanced foundational formula safely is limited. Food Multi II was crafted so it may be taken in conjunction with commonly prescribed drugs without a drug/nutrient interaction. Food Multi II was formulated without the inclusion of Vitamin K, Iron, Iodine, nce many drugs deplete the body of key vitamins and minerals. of several individuals requiring additional nutritional support. In addition, Vitamin E is included at a level recommended for individuals taking blood thinners and related pharmaceuticals.

Crafted as a foundational formula, Food Multi IV provides superior whole food nutrition without the inclusion of Vitamin K, Iodine, Iron and low levels of vitamin E which are deemed safe for individuals taking blood thinners and related pharmaceuticals.

Vitamin K and Anticoagulants
Anticoagulants slow the process of blood clotting with the intention to decrease the risk of strokes in individuals whose blood tends to clot too easily. For individuals taking the anticoagulants named warfarin/coumadin it is very important to avoid consuming foods rich in vitamin K or dietary supplements that include vitamin K.
Rich sources of vitamin K include liver, cauliflower and green vegetables including broccoli, spinach, kale, turnip greens and brussel sprouts.

Iodine
Individuals taking Lithium carbonate (generic name) should avoid iodine supplementation as hypothyroidism or suppression of thyroid gland function may develop.
Brand names: Carbolith, Cibalith-S, Duralith, Eskalith, Lithane, Lithizine, Lithobid, Lithonate, Lithotabs.
*Anticoagulants such as Warfarin/Coumadin are contraindicated with Vitamin K as this vitamin reduces the drugs effectiveness.

Iron
Iron can decrease the effectiveness of penicillamine and tetracycline drugs including
tetracycline / ACHROMYCIN, SUMYCIN
doxycycline / VIBRAMYCIN
minocycline / MINOCIN
Allopurinol or name brand Zyloprim can cause an excess storage of iron in the liver so iron supplementation is not recommended.
Food sources of Iron are: Liver, eggs, meat, poultry, green leafy vegetables, whole grains, almonds, beets, yeast, kelp, etc.

Foods to Promote Vascular Health

Wild Blueberry, Cherry Concentrate and Indian Gooseberry (Amla, Emblic officinalis) have been included in the formula because of the protective compounds including anthocyanins and flavonoids they provide. Both anthocyanins and flavonoids strengthen and help stabilize cell membranes. They provide powerful antioxidant protection helping to reduce chances of lipid peroxidation, which is a primary factor in many types of cardiovascular disease and other degenerative diseases.
Continue as is original

Blueberry Concentrate
This food compound rich antioxidant fruit supports the health of the vascular system, eyes and urinary tract. In 1997, the scientists at Jean Mayer USDA Human Nutrition Research Center on Aging at Tufts University ranked blueberries number 1 in antioxidant activity compared with 50 commercially available fruits and vegetables. In tests, it scored higher ORAC units (oxygen radical absorbency capacity), otherwise known as “anti-aging points”, than every other fruit or vegetable tested.

The antioxidant capacity of blueberries has been credited to two main sources. The first is the anthocyanin pigment, which gives blueberries their dense color. The phytonutrient classification under which Anthocyanidins are grouped are called phenolic compounds. Phenolic Compounds also have a highly beneficial group called bioflavonoids.

Anthocyanidins are an active type of flavonoid. These antioxidants help protect the body from oxidative stress, one of several biological processes involved in aging and some types of degenerative diseases.

The second beneficial compound in blueberries is chlorogenic acid, a powerful antioxidant that has demonstrated anti-carcinogenic properties.

Blueberry anthocyanidins enhance circulation to the capillaries of the eyes, help stabilize membranes and reduce oxidation in the tissues of the eyes and supporting structures. Blueberries are useful for prevention and as part of treatment of macular degeneration and cataracts.

Blueberry anthocyanidins reduce capillary fragility and permeability. They are strengthening to the capillaries, veins and arteries, and reduce oxidative stress to cellular membranes. Reducing lipid peroxidation of cell membranes helps maintain the integrity of the cell and keep it healthy.

Studies show that blueberries have a unique property which supports a healthy urinary tract. It works by reducing the adhesion of pathogenic bacteria along the urinary tract and helps maintain urinary tract membrane integrity.

As well as anti-oxidants, blueberries also contain potent anti-inflammatories. Antioxidant and anti-inflammatory actions have a highly protective effect on the brain as we age.
The National Institute of Aging (NIA) and United States Department of Agriculture (USDA) funded a study that concluded a diet including blueberry extract, rich in the antioxidant flavonoids, improves memory and age-related motor functions (6, 7, 11).

Cherry Concentrate
Cherries contain phenolic compounds and other food compounds that act as potent antioxidants, protecting the integrity of cellular membranes. They function in a manner similar to that of blueberry and other berries.

A study in Michigan found that cherries help reduce the formation of heterocyclic amines (HCA's), cancer-promoting compounds in well-done meat.

Cherries have been a folk remedy for arthritis, and research supports this benefit. They possess anti-inflammatory and antioxidant compounds that help treat this crippling degenerative illness.

Amla, Emblic officinalis
Commonly called Indian Gooseberry, this fruit from India is a nutritive and cardiovascular tonic. Considered a rejuvenative in Ayurvedic healing traditions, this fruit is rich in protective bioflavonoids.

Amla provides protective antioxidant activity, blocking free radical processes without pro-oxidant side effects.

Amla is used in treatment of anemia, debility and wasting diseases. It is also useful in convalescence and as a tonic.

Amla should not be used in large quantities during pregnancy.

Amla's protective actions have been attributed to its high Vitamin C content. New research indicates that it is not rich in ascorbic acid, commonly labeled Vitamin C, but rather is rich in

other antioxidant, free-radical scavenging constituents that provide its protective properties. These constituents include: the tannins Emblicanin A and B, ellagic acid and gallic acid.

Rice Bran and Beet Fiber
Rice Bran and Beet Fiber are safe for use with most drugs. These fibers are included as natural excipients for the manufacture of the tablets of this formula.

FOODSTATE NUTRIENTS

VITAMINS

Vitamin A and Beta-Carotene
We include 5,000 IU's of Vitamin A with 50% in the form of Beta-Carotene.
Beta-carotene (Provitamin A) and fat soluble vitamin A (Retinol) are important nutrients for maintaining the physiology. Carotenoids from Beta-carotene have protective antioxidant and free radical scavenging properties. Some supplement users (those with diabetes, liver dysfunction, etc.) do not efficiently convert Beta-carotene to vitamin A. Both forms are provided to ensure Vitamin A function.

Food Sources: sweet potato, carrot, spinach, dark colored vegetables & fruits, fish liver oils, liver, peppers, dried apricots, alfalfa.

B Complex
B Complex supports the metabolic functions related to energy production and fat, carbohydrate and protein metabolism.

B Complex is necessary for healthy functioning of the nervous system, muscles in the GI tract, health of the hair, skin, eyes, mouth and liver.

Lower levels of B Complex are often found in the elderly.

Food Sources: brewer's yeast, whole rice, whole grains, blackstrap molasses, legumes, meats, nuts and seeds.

B-1
B-1 (Thiamine) facilitates Krebs cycle functioning, this enables the body to manufacture energy from glucose. It has been shown to affect emotional wellbeing.
Food Sources: yeast, seeds, legumes, whole grains, nuts.

B-2
B-2 (Riboflavin) functions within enzyme systems involved in the metabolism of carbohydrates, fats and proteins. It is important to cell respiration and to regenerating glutathione.
Food Sources: yeast, liver, seeds, legumes, whole grains, nuts.

B-3
B-3 (Niacinamide) is involved in all of the functions of the B complex. It has been found to benefit insulin secretion and cholesterol management.
Food Sources: yeast, seeds, legumes, whole grains, nuts, buckwheat.

B-5
B-5 (Pantothenic Acid) is utilized in energy production and in the manufacture of adrenal hormones and red blood cells.
Food Sources: yeast, seeds, legumes, whole grains, nuts.

B-6
B-6 (Pyridoxine) is involved in building the body's proteins, structural compounds, nervous system chemical transmitters, prostaglandins and red blood cells. It assists in modulating hormonal balance and immune function.
Food Sources: yeast, seeds, legumes, whole grains, nuts, cauliflower, and sweet potatoes.

B-12
B-12 (Cyanocobalamin) is important in the prevention of pernicious anemia. Aging may increase our need for supplementation of B-12. B-12 works with folic acid in the production of DNA, red blood cells, and the myelin sheath that surrounds the nerves.
Food Sources: liver, clams, seafood, fish, whey, eggs, hard cheeses, some fermented foods.

Folic Acid
Folic Acid works with vitamin B-12 in many vital functions. It is critical to DNA synthesis and cellular division. It is absolutely essential for a healthy pregnancy.
Food Sources: brewer's yeast, dark green leafy vegetables, liver, whole grains, nuts, broccoli, legumes, mushrooms.

Biotin
Biotin functions in the production and utilization of fats and amino acids. It has a beneficial effect on the scalp, hair and nails.
Food Sources: brewer's yeast, liver, whole grains, nuts, legumes, mushrooms.

Choline
Choline is essential to the manufacture of the vital neurotransmitters acetylcholine and phosphatidylcholine and to the function of other components of cell membranes. It is important to fat metabolism.
Food Sources: liver, eggs, banana, cauliflower, grape juice, peanut butter, lecithin.

Inositol
Inositol functions closely with choline in the production of cell membranes.
Food Sources: citrus fruits, whole grains, nuts, seeds, and legumes.

Vitamin C
The primary role of Vitamin C is in collagen production, the glue that holds the body together. It is also a critical component in the performance of the immune and nervous systems, adrenal function, as well as providing antioxidant protection. Vitamin C promotes wound healing, and red blood cell formation and plays an essential role in both protein and calcium metabolism necessary for wound healing. As we age, the sex glands develop a greater need for Vitamin C and will draw it from other tissues, leaving these tissues vulnerable to atrophy and disease.
Food Sources: citrus fruit, acerola, peppers, kale, collards, broccoli, most fruits and vegetables.

Bioflavonoid Complex
Bioflavonoids are "Nature's biological response modifiers", and have the ability to modify the body's reaction to allergens, viruses and carcinogens. Bioflavonoids are important for strengthening the capillaries and veins. They function as powerful antioxidants. Research has shown Bioflavonoids to be anti-inflammatory, liver protective, anti-tumor, anti-microbial, antioxidant, antiviral, supportive to the immune system, and strengthening to the entire cardiovascular system. They also have an estrogenic effect. Regular use of bioflavonoid rich foods and herbs help with many of the symptoms of menopause: Bioflavonoids include rutin, hesperidin, quercetin, and naringin.
Food Sources: citrus fruit, berries, grapes.

Vitamin D3
Vitamin D3 (Cholecalciferol) in adequate levels is important to the regulation of calcium absorption. Vitamin D3 is the active hormonal form of vitamin D.
Food Sources: cod liver oil, cold-water fish, butter, egg yolk, dark green leafy vegetables. Sunlight on the skin is another source.

Vitamin E
Vitamin E's primary function is that of a cellular antioxidant. It is also important to immune function and to cardiovascular health. Vitamin E is included in a very low dose within this formula for those on blood thinners and related drugs.
Food Sources: poly-unsaturated fats in vegetable and seed oils, seeds, nuts, and whole grains.

MINERALS

Calcium
Calcium is vital to the structure of bones and teeth, contraction of muscles, enzyme activity, regulation of the heart beat, release of neurotransmitters and clotting of the blood. Calcium is an important factor in the health of the nervous system.
Food Sources: kelp, yogurt, dairy products, collard greens, kale, almonds, brewer's yeast, greens, brazil nuts, sesame seeds, sunflower seeds, broccoli, tofu.

Magnesium
Magnesium's primary function is enzyme activation. Magnesium participates in more than 300 enzymatic reactions in the body. It also plays a critical role in energy production, bone structure, and muscle structure and function. Magnesium is an important factor in the function of the sodium and potassium pump, and the metabolism of calcium.
Food Sources: kelp, wheat bran & germ, almonds, cashews, brewer's yeast, nuts, whole grains, tofu, dark leafy greens, seeds, and legumes.

Zinc
Zinc is active in many enzyme systems and body functions. It is also important to immune function, wound healing, sexual function, sensory function and skin health. Zinc plays an important role in the healthy function of the prostate gland.
Food Sources: oysters, pumpkin seeds, ginger root, seafood, brazil nuts, legumes, whole grains.

GTF Chromium
GTF Chromium is important to the blood sugar control mechanisms. It works with insulin in facilitating the uptake of glucose into cells and is important for proper insulin function. GTF Chromium helps with the regulation of cholesterol and triglyceride levels.
Food Sources: brewer's yeast, calf's liver, whole grains, meats.

Manganese
Manganese is important to the functioning of many enzyme systems. These systems include blood sugar control, thyroid hormones, SOD and energy metabolism.
Food Sources: nuts, whole grains, dried fruits, legumes, green leafy vegetables.

Selenium
Selenium's primary function is as a component of the vital antioxidant enzyme glutathione peroxidase. Glutathione peroxidase works with vitamin E to prevent free radical damage to cells. The levels of Selenium found in the soil directly affect the levels found in food. Many foods are now grown on Selenium deficient soils.
Food Sources: wheat germ, brazil nuts, yeast, oats, red swiss chard.

Molybdenum
Molybdenum functions as component of several detoxification enzymes including those involved in alcohol detoxification, uric acid formation and sulfur metabolism.

Food Sources: legumes, seeds, cauliflower, yeast, spinach, brown rice.

Potassium

Potassium is an essential electrolyte that functions in the maintenance of water balance, heart, muscles, kidney, adrenal and nerve function. Adequate levels of potassium are found in many common foods.

Food Sources: bananas, oranges, apples, potatoes, avocados, carrot, tomatoes, legumes, melons, fish, dandelion leaf.

Copper

Copper functions in several key enzymatic reactions in the body. The functions include production of the important free radical scavenger SOD and the enzymes involved in production of the skin. Copper is also essential for energy and plays an important role in neurotransmission. Copper is essential in iron utilization, anti-inflammatory response, and cardiovascular health. Copper must be in a food form, as copper sulfate causes oxidation of vitamin C and is linked to cellular free radical damage.

Food Sources: oysters, shellfish, legumes, nuts.

Vanadium

Vanadium functions in hormone, cholesterol and blood sugar metabolism. Studies indicate it improves glucose tolerance, and the mineralization of bones.

Food Sources: black pepper, dill parsley, mushrooms, shellfish, buckwheat, soy, sunflower & sunflower seed oils, oats, olive oil.

Innate Response Formulas™ Food Multi II is an excellent broad spectrum FoodState multiple created especially for our customers who want to avoid specific allopathic drug interactions.

NOTE: Although Innate Response Formulas™ Food Multi II was reviewed by our formulator and our advisory Naturopathic Physician, we still suggest reviewing this formula, and any supplement, with a pharmacist and health care provider, especially when taking more than one prescription drug.

REFERENCES:

1. *Physician's Drug Handbook*, 9th Ed., © 2001 Springhouse

2. *Herb Contraindications and Drug Interactions*, Francis Brinker, ND © 1998

3. "In vitro anticancer activity of fruit extracts from *Vaccinium* species.", J. Bomser, D. Madhavi, et al., *Planta Medica* 1996, 62:212-216

4. " Newsbreak: Study: Wild Blueberry may fight aging, cancer", Anne Sundermann, *Herbs For Health* Nov/Dec 1998, pg. 26

5. "Studies on *Vaccinium myrtillus* anthocyanosides, Vasoprotective and antiinflammatory activity.", A. Lietti, A. Cristoni, M. Picci, Research Labs Inverni della Beffa, Milan Italy, *Arzeim-Forsch* (Drug Res.) 26, NO. 5 1976

6. "Antioxidant Capacity and Health Benefits of Fruits and Vegetables: Blueberries, the Leader of the Pack", Ronald L. Prior, Ph.D., *North American Blueberry Council*, USDA Human Nutrition Research Center on Aging at Tufts University, 1999.

7. "Reversals of Age-Related Declines in Neuronal Signal Transduction, Cognitive, and Motor Behavioral Deficits with Blueberry, Spinach, or Strawberry Dietary Supplementation." James A. Joseph, Barbara Shukitt-Hale, et al., *The Journal Of Neuroscience* September 15, 1999, 19(18):8114-8121

8. "Antioxidant action of Vaccinium myrtillus extract on human low density lipoproteins in vitro: initial observations". PM Laplaud, A. Lelubre, et al., *Fundam Clin Pharmacol* 1997;11:35-40

9. "Novel lipid-lowering properties of Vaccinium myrtillus L. leaves, a Traditional Antidiabetic treatment, in several models of rat dyslipidaemia: A comparison with Ciprofibrate." Andrea Cignarella, Milena Nastasi, et al., *Thrombosis Research*, Vol. 84, No.5, pp. 311-322, 1996

10. "Bioactive Properties of Wild Blueberry Fruits", M. A. L. Smith, K. A. Marley, et al., *Journal of Food Science*, Vol. 65, No. 2, 2000

11. Agricultural Research Service, Dr. Duke's Phytochemical and Ethnobotanical Databases, "Chemicals and their Biological Activities in: *Vaccinium corymbosum L. (Ericaceae)*—Blueberry. on-line- www.ars-grin.gov/cgi-bin/duke/farmacy2.pl.

12. "Effects of blueberry and cranberry juice consumption on the plasma antioxidant capacity of healthy female volunteers." Pedersen CB, Kyle J, Jenkinson AM et al., *EUR J Clin Nutr* (May 2000) 54(5):405-8

13. "Action of anthocyanosides of *Vaccinium myrtillis* on the permeability of the blood brain barrier." Robert M, Godeau G, Moati F et al., *J Med* (1977) 8(5):321-32

14. "Effects of *Vaccinium myrtillus* anthocyanosides on arterial vasomotion." Colantuoni A, Bertuglia S, et al., *Arzneimittelforschung* (1991 Sept.) 41(9):905-9

15. "Bioactive Properties of Wild Blueberry Fruits", Smith M .A .I., Marley K. A., *Journal Of Food Science*, Vol.65, NO. 2, 2000, © 2000 Institute of Food Technologists

16. *Eat Your Colors*, Marcia Zimmerman, C.N. © 2001 Owl Books

17. *The Color Code*, James A. Joseph, Ph.D., Daniel A. Nadeau, MD © 2002 Hyperion

18. *American Herbal Products Association's Botanical Safety Handbook*, Michael McGuffin, Christopher Hobbs, Roy Upton, Alicia Goldberg © 1997 CRC Press

19. *Planetary Herbology*, Michael Tierra, C.A., N.D. © 1988 Lotus Press

20. "Active constituents of *Emblica officinalis:* Part 1- The chemistry and antioxidative effects of two new hydrolysable tannins, Emblicanin A and B." Shibnath Ghosal, *Indian Journal of Chemistry*, Vol. 35B, Sept. 1996, pp. 941-948

21. "Antioxidant activity of active tannoid principles of Emblica officinalis (amla) ", Arunabh Bhattacharya, et.al., *Indian Journal of Experimental Biology*, Vol. 37, July 1999, pp. 676-680