

Physician's Product Review For GBG's 10-in-One Formula

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The following is a retrospective analysis of GBG's 10-in-One Formula and its active ingredients



I. INTRODUCTION

GBG's 10-in-One is a vitamin and mineral preparation with many additional nutritional supplements.

- a. This vitamin preparation contains many of the essential vitamins which are expressed as percent of Daily Value (DV) per serving based on a 2,000 calorie diet.
- b. Many of the important minerals are contained in the "GBG" preparation. There are two categories of minerals:
 - i. Bulk or essential minerals called "macro-minerals" such as calcium and magnesium.
 - ii. "Trace minerals or micro-minerals" are important. These can include boron, chromium, iron, zinc, copper, selenium and many others.

c. Herbal Energizer Extract

The energy blend portion contains "adaptogens" such as Schizandra seed extract, Eleutherococcus senticosus root extract (Siberian ginseng).

"Adaptogens" are natural substances found in certain plants and herbs. The adaptogens help the body achieve increased mental, physical, and work performance*. Dr. Nikolai Lazarev of Russia coined the term "adaptogen" in 1947. Dr. Lazarev was the mentor and teacher of Dr. I.I. Brekhman. Dr. Brekhman and his group in Russia were responsible for the pioneering work on the various "adaptogens" found in plants.

The adaptogens have many important properties:

They are non-toxic.

- 1) They help increase the body's mental, physical and work performance.*
- 2) They increase the ability of the body to achieve balance and maintain overall health and homeostasis.*
- 3) Fruit blend contains many extracts from fruits that contain antioxidants and many healthy ingredients.
- 4) Age-Defying/Antioxidant Blend.
- 5) The ingredients have anti-aging properties with antioxidants and nucleotides.*
- 6) Trace Minerals
- 7) The body utilizes over 80 minerals for maximum healthy function.
- 8) Miscellaneous Ingredients: Whole aloe, choline, Inositol, etc.
- 9) Toxic Metals

*These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.

The GBG preparation has been manufactured so the common toxic metals, such as lead, arsenic and mercury are absent or the levels are far below the toxic range.

Exposure to “toxic metals” has become an increasingly recognized source of illness.

Toxic metals are often called “heavy metals”. These include arsenic, lead, mercury, cadmium, beryllium and chromium in high concentrations.

Some of these so-called “toxic metals” in small amounts are necessary to support life.

However, in large amounts they become toxic and become a significant health hazard.

II. LABEL AND INGREDIENTS IN GBG 10-in-One Formula

<h1>Supplement Facts</h1>		
Serving Size 2 tablets		
Servings Per Container 30		
Amount Per Serving % Daily Value		
Vitamin A (as Palmitate)	5,000 IU	100%
Vitamin C (as Ascorbic Acid)	500 mg	833%
Vitamin D-3 (as Cholecalciferol)	400 IU	100%
Vitamin E (as d-Alpha Tocopherol Acetate)	60 IU	200%
Vitamin K (as Phytonadione)	80 mcg	100%
Thiamine (as Thiamine HCl) (Vitamin B1)	15 mg	1,000%
Riboflavin (Vitamin B2)	17 mg	1,000%
Niacin (as Niacinamide)	30 mg	150%
Vitamin B-6 (as Pyridoxine HCL)	10 mg	500%
Folic Acid	600 mcg	150%
Vitamin B-12 (as Cyanocobalamin)	100 mcg	1667%
Biotin	300 mcg	100%
Pantothenic Acid (d-calcium Pantothenate)	25 mg	250%
Calcium (as citrate)	51 mg	5%
Magnesium (as oxide)	15 mg	4%
Selenium (as chelate)	70mcg	100%
Choline Bitartrate	50 mg	*
Inositol	25 mg	*
L-Theanine	20 mg	*
Boron Citrate	10 mg	*
Proprietary Digestive Enzyme and Probiotic Blend (Bacillus Subtilus 0.2 Billion CFU)	20 mg	*
Herbal Energizer Liquid Extract Glucuronolactone, Eleuthro (Siberian Ginseng) Root Extract, Green Tea Leaves Extract, Schisandra Berry Extract (10:1), L-Carnitine, Aloe Vera Leaves Powder, Rhodiola Rosea Root Extract	216 mg	*
Trace mineral complex containing up to 74 trace minerals	5 mg	*
Fruit Phyto-Nutrient Blend Acai Berry Extract 4:1, Mangosteen Fruit Extract (20:1), Gogi Berry Extract (Lycium), Pomegranate Fruit Extract (5:1), Amla Fruit Powder	170 mg	*

Age-Defying Antioxidant Blend Methylsulfonylmethane (MSM), Resveratrol, Coenzyme-Q-10, Lycopene, Quercetin Dihydrate, Hesperidin, Alpha Lipoic Acid, Turmeric Root Extract (95%)	180 mg	*
* Daily Value not established		

Other ingredients: Xylitol, Fructose, Natural Flavors, Microcrystalline Cellulose, Stearic Acid, Magnesium Stearate. Natural Flavorings in product contain trace amounts of dairy.

III. VITAMINS AND MACROMINERALS

Vitamins and minerals are vital to life and bodily functions. The best way to get the vitamins and minerals is through food.

- a. Water-soluble vitamins are vitamin C (ascorbic acid) and eight members of the vitamin B complex: thiamin (vitamin B₁), riboflavin (vitamin B₂), niacin, pyridoxine (vitamin B₆), folic acid, cobalamin (vitamin B₁₂), biotin, and pantothenic acid.
- b. Fat-soluble vitamins are retinol (vitamin A), cholecalciferol and ergocalciferol (vitamin D), α -tocopherol (vitamin E), and phyloquinone and menaquinone (vitamin K). Only vitamins A, E, and B₁₂ are stored to any significant extent in the body.

Many Americans are deficient in important vitamins and minerals in their daily diet. The U.S. Department of Agriculture found that a significant percentage of the population receives less than 80% of the Recommended Daily Allowance (RDA) for vitamins A, C, and B complex and the essential minerals, calcium, magnesium and iron.

Data reported by D. Bergner has shown that since 1948, levels of essential minerals, iron, manganese, and copper have declined significantly in many agricultural crops. Iron and selenium content and levels in the soil and food have dropped dramatically.

Today, the vitamins and minerals are often expressed on the basis of DV (daily value) which can be based on a diet, such as a 2000 calorie daily diet. Previously, the RDA (recommended daily allowance) were known, was expressed in cases of Vitamins and minerals.

IV. HERBAL ENERGIZER LIQUID EXTRACT

This group consists of two “adaptogens” which has been defined above.

The special biological and physiological properties of the adaptogen herbs are:

a) Schizandra chinensis (seed extract).

1. Increases physical and mental work capacity*
2. Speeds recovery following exercise and other physical activities*
3. Produces antioxidant activities against oxygen free radicals which are damaging to body cells*
4. Increases resistance to ordinary stress*

b) Eleutherococcus senticosus (Acantho root)

1. Increases physical capacity and endurance*
2. Increases attention span*
3. Sustains energy levels during prolonged work periods*
4. Provides resistance to ordinary stress*
5. Enhances the immune system*

c) Rhodiola Rosea (Golden root)

1. Increases work ability*
2. Improves quality of sleep and appetite*
3. Possesses anti-stress action*
4. Helps maintain cholesterol levels that are already within normal limits*

d) L-carnitine

Is an amino acid synthesized in the liver and kidneys from lysine and methionine. The claims of biological activities of L-carnitine are:

1. Increases fat metabolism*
2. Helps maintain cholesterol levels that are already within normal levels*
3. Is cardio-protective*

e) Glucoranolactone is a naturally occurring metabolite, a carbohydrate produced by the human metabolic system, formed when glucose breaks down and is believed to be helpful in ridding the body of harmful substances and providing an instant energy boost.

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V. FRUIT BLEND

This blend consists of many fruit extracts.

Fruits provide a source of essential nutrients and healthy antioxidants, such as Vitamins C and E, and bioflavonoid.

Some of the fruit ingredients will be discussed.

a. Fruits

- i. **Wolfberry** or Goji berry. This is a popular food and drink in China for 2000 years. There are a number of compounds including flavinoids and pyrole derivatives.
- ii. **Mangosteen.** Mangosteen is predominantly grown in Southeast Asia. It contains a lot of xanthenes and many other ingredients beneficial to good health.
- iii. **Pomegranate** is widely cultivated over the whole Mediterranean region. It is now grown in the drier parts of California and Arizona. Pomegranates contain Vitamin C and polyphenols (antioxidant).
- iv. **Acai Fruit.** Acai berry is harvested from the Brazilian rain forest. The ingredients in this fruit are beneficial in many respects and have strong antioxidant properties. * Acai has up to 33 times the antioxidant content as red wine grapes.

VI. AGE-DEFYING/ANTIOXIDANT BLEND

Many of the ingredients in this blend are biologically and physiologically active with beneficial effects, due to the antioxidant properties. Before the specific ingredients will be discussed, we will discuss antioxidants in general and the problem of “free radicals”.

The antioxidants in general demonstrate anti-aging properties by preventing cellular damage and damage to DNA and RNA constituents.*

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a) What are Antioxidants?

Antioxidants are molecules which can interact with “free radicals” and terminate the reaction before cellular damage occurs. Within the body there are several enzyme systems that scavenge free radicals:

1. The principal vitamin anti-oxidants are vitamin E, beta-carotene and vitamin C.
2. Selenium is a trace metal that is required for one of the body’s antioxidant enzyme systems.

b) What are “Free Radicals?”

Free radicals are atoms or a group of atoms with an odd unpaired number of electrons which can be formed when oxygen interacts with certain molecules. The free radicals can cause damage to cellular components, such as DNA and the cell membrane.

c) Antioxidants and Cellular Damage

Antioxidants are present in foods, as vitamins, minerals, carotenoids and polyphenols. Many of the antioxidants are often identified by their distinctive colors:

1. The deep red of cherries and tomatoes
2. Orange of carrots
3. Yellow of corn, mangoes, saffron
4. Blue-purple of blueberries, blackberries and grapes.

d) Phyto-chemicals

Phyto-chemicals are plant chemicals that are neither vitamins nor minerals and yet may have health enhancing effects.

Many of the phyto-chemicals are antioxidants and include carotenoids and flavinoids.

1. Lycopene – is a strong antioxidant and affords strong protection against certain types of free radicals.*
2. Co-Q10 - or ubiquinone is found in the mitochondria of the cells and has two functions.
 - a. Co-Q10 transports electrons in energy production*
 - b. Is also an antioxidant that protects against “free radicals”*
The heart, brain and muscles which have high levels of mitochondria may be most affected by decreased levels of Co-Q10.*

e) Alpha-lipoic acid-

Lipoic acid is a strong antioxidant and needed for mitochondrial function. Lipoic acid is both water and fat soluble and protects lipids and nerve fiber lining against oxidation. Lipoic acid has the remarkable ability to recycle several other important antioxidants, including Vitamin C and E, glutathione and Co-Q10, as well as itself. Lipoic acid is often called the “universal antioxidant”. Lipoic acid is the only antioxidant that can boost the level of intracellular glutathione, an important antioxidant in the cells.*

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These phyto-chemicals are found in everyday fruits and vegetables. Eating spinach, kale and green leafy vegetables along with a cup or more of blueberries everyday will double the antioxidant intake from foods.

f) Turmeric Seed

Turmeric seed, the basis for yellow mustard, is an antioxidant. The turmeric seeds contain the polyphenol “curcumin”.

VII. TRACE MINERALS

Essential trace minerals include iron, iodine, zinc, chromium, selenium, manganese, molybdenum, and copper. Except for chromium, each of these is incorporated into enzymes or hormones required in metabolism. Except for deficiencies of iron and zinc, micro-mineral deficiencies are uncommon in industrialized countries (see Vitamin Deficiency, Dependency, and Toxicity: see Mineral Deficiency and Toxicity).

Other minerals (e.g. aluminum, arsenic, boron, cobalt, fluoride, nickel, silicon, vanadium) have not been proved essential for people.

All trace minerals are toxic at high levels, and some (arsenic, nickel, and chromium) may cause cancer.

Minerals are important for basic health. The minerals are needed for the formation of bone and blood, proper composition of body fluids, healthy nerve function, and cardiovascular function, etc.*

a. There are three basic classifications of minerals

1. Metallic minerals – are found in elemental form, such as sodium chloride and zinc sulfate.
2. Chelated minerals – a metallic mineral is usually “chelated” with an amino acid. The amino acid surrounds the metal like a “claw” and helps solubilize the metal and make the mineral chelate more bio-available or useful to the body.

Examples are magnesium aspartate and chromium picconolate. The chelated minerals are about 40% more efficient in regards to absorption and assimilation into the body metabolism.

3. Colloidal minerals – these are minerals that occur in nature in a colloid state as minute particles. There is a major increase in surface area. This results in increased solubility and bioavailability. Plant derived colloidal minerals are very useful with increased solubility.

b. Boron

Boron is a trace mineral needed for healthy bones and teeth and the proper metabolism of essential minerals, such as calcium, magnesium, and phosphorus.* Boron deficiency also accentuates Vitamin D deficiency. It is required to convert Vitamin D to the most active form in the kidneys. Most people are not deficient in boron; however, the elderly often benefit with boron in 2 mg to 3 mg daily dose supplementation in their diet.

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c. Chromium

Chromium is an important constituent of a natural substance called glucose tolerance factor (GTF). The GTF is important in glucose metabolism. Chromium is not absorbed well in the diet and most people may benefit from a multi-nutrient supplement. Chromium as Cr +3 is an important trace mineral. However, the Cr+6 ion is very toxic.

d. Iodine, iron, magnesium, phosphorus, potassium, sodium

These are key macro-minerals essential to normal body function and are well known mineral supplements.

VIII. MISCELLANEOUS ITEMS

a. L-Thianine

Thianine is a unique amino acid found in the leaves of green tea.

b. Boron

An important trace mineral important in bone and muscle metabolism discussed above.*

c. Родиола – an adaptogen discussed above.

d. Whole Aloe

The gel from aloe vera leaf has been used for centuries as a topical remedy for skin cuts, bruises, burns, and minor irritations. Taken internally, aloe juice is used as a laxative.* The active constituents are anthroquinone and glycosides. Aloe is helpful in supporting the immune system.*

e. Choline is an essential B-vitamin nutrient. Choline is an amino precursor for the neurotransmitter acetyl choline and important for brain development. Choline is also an important constituent of cell membranes and is important in every bodily system.*

f. Inositol – plays an important role in the health of cell membranes and especially of the cells in the brain.* The compound inositol is available from plant and animal sources. Inositol can be manufactured in the body.

IX. TOXIC METALS

a. What are Toxic metals?

Many metals have no known biological function and certain ones are capable of disrupting important and essential physiological processes and can be called “toxic metals”. Examples of “toxic” metals are cadmium, lead, mercury and arsenic. In very small amounts, some of these metals are important to support life. However, in larger amounts, the same metals may become “toxic”.

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For example, chromium as Cr +3 ion is an essential trace element important for maintaining correct blood sugar levels. However as Cr+6 ion is “toxic” and a known human lung carcinogen.

b. Are heavy metals the same as toxic metals?

The short answer is “no” as “heavy” refers to atomic weight. The heavy metals cadmium lead and mercury are certainly “toxic”. However, molybdenum is a heavy metal but an essential metal. In contrast, beryllium is a light metal but very toxic.

c. Testing for “toxic metal”. The toxic effects of most metals are due to their ability to disrupt the function of essential biological molecules, such as proteins, enzymes and DNA. The listed common so-called toxic metals are: Arsenic, beryllium, cadmium, hexavalent chromium, lead and mercury.

The GBG preparations are tested for many toxic metals to make sure the preparations are safe.

X. RECOMMENDATIONS FOR PREVENTIVE NUTRITION STRATEGIES

a. Several recommendations have been made for optimal health by Walter C. Willet (28).

1. Stay lean and active throughout life. (body weight should not increase by more than 10 pounds after age 21). Regular exercise is very important.
2. Eat abundant amounts of fruits and vegetables (at least five servings/day). Include green leafy and orange colored vegetables daily.
3. Unrefined whole grains should be consumed.
The intake of refined simple sugars and refined flour and carbohydrates should be very low and minimal.
4. Red meat should be eaten only occasionally.
5. Fish and poultry should be eaten in moderation as an alternative to red meat.
6. Animal fats and trans-fatty acids from partially hydrogenated vegetable oils should be avoided and not eaten.
 - a. Olive oil and other mono-unsaturated fats are healthy alternatives for fat.
 - b. Highly polyunsaturated fats, such as corn or soy-bean oil may also be healthy alternatives.
7. Deep fried fast foods and most commercially prepared foods contain trans-fatty acids and should be avoided.
8. Adequate calcium intake is important for growing children, adolescents, and lactating women. If dietary sources are low, supplements of calcium should be considered. High consumption of milk or dairy products is not likely to be necessary or beneficial for middle aged and older adults.
9. Consumption of daily values of a multiple vitamin preparation containing folic acid may provide a sensible nutritional safety net.

- a. Definite evidence has shown that folic acid containing multivitamin supplements during early weeks of pregnancy will prevent a large fraction of neural tube defects in infants.
- b. Women should also consider a multivitamin supplement containing folic acid and iron.
- c. Vitamin C and Vitamin E may help reduce the risk of cardiovascular diseases, cataracts, and other diseases, such as cancer.

10. Eating different types of cultural foods based around minimally processed foods from plant sources will provide a healthy and interesting experience.

b. Fruits and Vegetable Rich Diet

U.S. Department of Health and Human Services, the U.S. Department of Agriculture, and the National Academy of Sciences has implemented the “Five a Day” campaign. They recommend that each person eat at least 5 servings each of fruits and vegetables every day along with a variety of foods. However, eight to ten servings per day is best for cancer prevention. Fruits and vegetables are rich sources of fiber, vitamins, minerals, and phytochemicals. One should eat a variety of fruits and vegetables. A serving of fruit or vegetable is equal to ½ cup of fruit, ¼ cup of dried fruit, ½ cup of cooked vegetables, 1 cup of raw vegetables or ¾ cup of fruit or vegetable juice. One should eat a variety and quantity of vegetables and fruits in the daily diet. It is wise to choose dark green, and deep yellow vegetables, as well as citrus fruits.

Other Dietary Substances

The daily human diet typically contains as many as 100,000 chemicals (e.g., coffee contains 1000). Of these, only 300 are nutrients, only some of which are essential. However, many non-nutrients in foods are useful. For example, food additives (e.g., preservatives, emulsifiers, antioxidants, stabilizers) improve the production and stability of foods. Trace components (e.g., spices, flavors, odors, colors, phytochemicals, and many other natural products) improve appearance and taste. Fiber, which occurs in various forms (e.g., cellulose, hemicelluloses, pectin, gums) increases GI motility, prevents constipation, and helps control diverticular disease. Fiber is thought to accelerate the elimination of cancer-causing substances produced by bacteria in the large intestine. Epidemiologic evidence strongly supports an association between colon cancer and low fiber intake and a beneficial effect of fiber in functional bowel disorders, Crohn’s disease, obesity, and hemorrhoids. Soluble fiber (present in fruits, vegetables, oats, barley, and legumes) reduces the postprandial increase in blood glucose and insulin and can reduce cholesterol levels. The typical Western diet is low in fiber (about 12 g/day) because of a high intake of highly refined wheat flour and a low intake of fruits and vegetables. Increasing fiber intake to about 30 g/day by consuming more vegetables, fruits, and high-fiber cereals is generally recommended.

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