



DaVinci®

*Laboratories  
of Vermont*

***Innovative*** by nature

# METABOLIC MULTI



*Dear Practitioner,*

*With unprecedented rates of obesity in the American adult population, it's likely your patients find themselves concerned with their weights and metabolic functions.*

*Metabolism isn't just a buzzword, either. Glucose metabolism has found its place in the medical spotlight with the growing prevalence of prediabetes: In 2010, 79 million Americans over the age of 20 could be considered prediabetic; by 2012, that number had risen to 86 million.<sup>1</sup>*

*Similarly, lipid metabolism remains at the forefront of the American health industry's collective mind—with good reason. About half of all American adults have at least one of three risk factors for heart disease, which causes one in every four deaths in the United States each year.<sup>2</sup>*

*Many patients have discovered a personal diagnosis in the form of metabolic syndrome, which is not a disease, but instead a combination of risk factors. According to the American Heart Association, over one-third of Americans have metabolic syndrome. With that diagnosis comes an increased desire for change.<sup>3</sup>*

*Common recommendations for addressing overall metabolic health, and specifically, metabolic syndrome, involve lifestyle changes such as increased exercise and shifting diet choices.*

*While these factors are of utmost importance, patients should not discount the value of the metabolic support a properly designed supplement protocol can provide.\**

*Our new Metabolic Multivitamin offers a combination formula that provides not only crucial daily nutrition factors, but also three complexes to support three prongs of the metabolic process: glucose metabolism, lipid metabolism and inflammation.*

*With the fast emergence of metabolic syndrome diagnoses, patient desire for this type of comprehensive support has only grown. Start your patients down the path to reversing metabolic syndrome today.*

*To your practice and your patients' good health,*

*Dom Orlandi*

*President, DaVinci<sup>®</sup> Laboratories of Vermont*

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## INTRODUCTION

Metabolic syndrome affects over one-third of Americans. The combination of risk factors it involves is intricate; each is affected by many lifestyle and genetic factors, and each can be the cause of many other bodily woes.

This paper will address the ways in which DaVinci's Metabolic Multi formula can support the health of the systems and processes that affect these risk factors, such that your patients can experience all of the benefits of their lifestyle related hard work and diligence.

### **This white paper will review:**

- Risk factors associated with metabolic syndrome diagnoses
- Possible causes of metabolic syndrome
- The role of inflammation in metabolic syndrome
- Glucose metabolism
- Glycation and Advanced Glycation Endproducts (AGEs)
- Lipid metabolism
- How nutritional factors in Metabolic Multi support metabolic health\*
- Added supportive properties of Metabolic Multi ingredients

Through adding Metabolic Multi to their diet and exercise regimens, your patients add targeted and comprehensive support.

This protocol is recommended for patients who are:

- searching for support for healthy metabolism and insulin utilization\*
- interested in a weight management program\*
- seeking a lifestyle change that supports energy levels and overall wellbeing\*

## WHAT IS METABOLIC SYNDROME?

Metabolic syndrome is not actually a disease, but a combination of specified risk factors, including high blood pressure, high blood sugar, unhealthy cholesterol levels and a large waist or excess abdominal fat. We know that both genetic and environmental factors contribute to those risk factors, and that the chances of developing metabolic syndrome increase with age.

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To diagnose metabolic syndrome, it's important to use a standard system. We may recognize the presence or potential for development of some of the risk factors in many people; that's why defining parameters of the risk factors has become important when discussing diagnosis and subsequent improvement or reversal.

### *National Institutes of Health Guidelines for Metabolic Syndrome Diagnosis*

Patients must exhibit three of the following five risk factors in order for a practitioner to accurately diagnose metabolic syndrome:

- **Large waist circumference**

Defined as a waistline that measures at least 35 inches (89 centimeters) for women and 40 inches (102 centimeters) for men.

- **High triglyceride level**

A risk factor if level is at least 150 milligrams per deciliter, or mg/dL, (1.7 millimoles per liter, or mmol/L), or if a patient is receiving treatment for high triglycerides.

- **Reduced HDL cholesterol**

If levels are less than 40 mg/dL (1.04 mmol/L) in men or less than 50 mg/dL (1.3 mmol/L) in women, or if a patient is receiving treatment for low LDL

- **Increased blood pressure**

If blood pressure is at least 130/85 millimeters of mercury (mm Hg) or if patient is taking medication for high blood pressure

- **Elevated fasting blood sugar**

If blood sugar level is at least 100 mg/dL (5.6 mmol/L) or if patient takes medication to control high blood sugar<sup>4</sup>

Metabolic syndrome is a combination of health factors, therefore any supplement designed to support metabolic health must include nutrients to support each facet of the syndrome's development.

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## POSSIBLE CAUSES OF METABOLIC SYNDROME

Because metabolic syndrome is a combination of risk factors, it has a combination of causes. Patients' behaviors and choices can affect some, but not all, of these causes, which include genetic predisposition and age.

Possible causes also include insulin resistance, (glycation and Advanced Glycation End products (AGEs) are linked to insulin resistance) hormonal imbalance (can be caused by stress, so cognitive health maintenance is important), obesity, inactivity, and diet.<sup>5</sup>

With regard to the lattermost, consumption of sugary beverages is a major concern. In an analysis of 11 independent studies, combined findings "demonstrated a 26% higher risk of developing diabetes type 2 and a 20% higher risk of developing metabolic syndrome among people who consumed 1 to 2 sugary drinks per day, compared to individuals whose monthly maximum was just one such drink. Even daily consumption of just one 12-ounce sugary drink raised diabetes type 2 risk by approximately 15%."<sup>6</sup>

Sugary drinks, though, represent a modifiable risk factor for metabolic syndrome.

Other, less concrete causes, such as inflammation, are more difficult to address.

## INFLAMMATION

To date, it is unclear whether chronic low-grade inflammation causes metabolic syndrome, is caused by it, or simply correlates with it. What is known is that metabolic syndrome is, certainly, accompanied by an inflammatory condition.<sup>7</sup>

Interestingly, recently evolved medical understanding of obesity has led to the conclusion that obesity and inflammation are inextricably linked.

Write Rosário Monteiro\* and Isabel Azevedo from the Department of Biochemistry, Faculty of Medicine, University of Porto in Portugal:

"Whatever its origin, be it or not obesity the main initiator, the chronic low-grade inflammatory condition that accompanies the metabolic syndrome has been implicated as a major player in both the installation of the syndrome and its associated pathophysiological consequences [16]. In good agreement with this interpretation of things, weight loss of obese patients is repeatedly verified to be associated with a decrease of inflammation biomarkers [17–21] accompanied by improvement of metabolic parameters, namely, insulin sensitivity [22–26]."<sup>8</sup>

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So we see that inflammation is connected to at least two risk factors for MetS: obesity and insulin resistance. Monteiro and Azevedo make the argument that a cascade of events is triggered by the metabolic overload and resulting dysfunction of adipocytes. This concept extends in many directions.<sup>9</sup>

When adipocytes are exposed to given stressors, including inflammatory cytokines and oxidative damage (also a result of inflammation), cellular responses mediated by cellular kinases are induced. Some of these kinases impair insulin action through stimulating Insulin Receptor Substrate (IRS) serine phosphorylation.<sup>10</sup> Excessive serine phosphorylation of IRS proteins could impair insulin signaling, causing resistance.<sup>11</sup> It is important to note that the same kinases that can both stimulate the activate targets related to the inflammatory response and affect proinflammatory gene expression.<sup>12</sup>

Another concern regarding inflammation and adipocytes involves the cells' physical size, especially in their presence in visceral fat. In visceral fat (as opposed to subcutaneous) an increased size may create more opportunities for rupture, as these cells are more vulnerable to pressure variations from a patient's cough, exercise actions or even sleep apnea (which has also been linked to metabolic syndrome).<sup>13,14</sup>

Write Monteiro and Azevedo: "We have shown that big adipocytes are more prone to rupture, and cell rupture will obviously constitute a focus of inflammation." These facts indicate that perhaps more important than the actual amount of abdominal cavity is the size of the adipocytes. A theory such as this allows us to understand why, though visceral obesity plays an important role in metabolic syndrome and is considered highly proinflammatory, not all patients present this aspect.<sup>15</sup>

We can see that the dysfunction of adipocytes, caused by inflammation, greatly affects both insulin resistance and the secretion of proinflammatory substances, perpetuating the cycle. Further, the fat deposits into other organs that are a result of adipocyte dysfunction can contribute to the other risk factors for metabolic syndrome.

## GLUCOSE METABOLISM

Much like the other causes of MetS, impaired glucose metabolism is connected to the development of several of the syndrome's risk factors.

Most notably, impaired glucose metabolism and impaired glucose tolerance (IGT) contributes to the high fasting blood glucose risk factor. Insulin resistance is part of this process, as insulin-resistant cells won't take in the glucose supplied to them, thereby leading to hyperglycemia. Impaired glucose tolerance is associated with insulin resistance, and both are associated with the development of type 2 diabetes, which is considered a complication of metabolic syndrome.

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Interestingly, type 2 diabetes affects additional risk factors for metabolic syndrome, beyond fasting blood glucose. It has been shown to correlate with lowered HDL cholesterol (another risk factor for MetS). Further, through diabetic dyslipidemia, diabetes also tends to raise LDLs and triglycerides. Studies show a link between insulin resistance, diabetic dyslipidemia, and atherosclerosis and blood vessel disease, revealing that supporting normal glucose metabolism as a preventative measure for metabolic syndrome is a must.<sup>16</sup>

Further, the relationship between glucose metabolism and glycation deserves examination within the context of metabolic syndrome.

## GLYCATION AND ADVANCED GLYCATION ENDPRODUCTS

Glycation occurs when a protein or lipid molecule binds with a sugar molecule like glucose or fructose without the necessary moderating action of an enzyme. When an enzyme is present, glycosylation (a process necessary for molecular function) occurs; without it, glycation results, forming rogue molecules called advanced glycation endproducts, or AGEs.

AGEs are an important piece of the metabolic syndrome conversation, as their emergence means the disruption of metabolic pathways. First, glycation in the body is associated with an increase in oxidative damage. And AGEs and their byproducts are linked to several age-related health concerns, including impaired cognitive function and glucose control.<sup>17</sup>

Additionally, high levels of AGEs can deplete levels of nitric oxide, thereby creating vascular damage and setting the stage for heart concerns.<sup>18</sup> In short, endogenous glycation is one of the major molecular processes that causes an accrual of damage.

It has been shown that elevated levels of AGEs contribute to neuropathy, retinal disease and kidney failure, three common diabetes-related complications. In addition, oral AGEs have been shown to promote insulin resistance and diabetes through depleting antioxidant defenses of AGE receptor-1 and sirtuin-1.<sup>19</sup>

It is widely suspected that glucose, via glycation, is the primary damaging molecule in the aging body.<sup>20</sup>

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## LIPID METABOLISM

Lipid metabolism is necessarily connected to each of the aforementioned pieces of the metabolic health puzzle. Dyslipidemia itself represents three of the five defined risk factors for MetS.

The most common type of dyslipidemia, hyperlipidemia, is often related to the endocrine system and hormonal diseases like diabetes.<sup>21</sup> When we consider the complications of metabolic syndrome, type 2 diabetes and cardiovascular disease, important connections emerge.

One example: Like hypoglycemia, hyperlipidemia is a risk factor for diabetes-accelerated atherosclerosis. Researchers have found that in mice models, "hyperglycemia is not sufficient to stimulate macrophage proliferation in lesions of atherosclerosis or in isolated macrophages." But the combination of that condition with hyperlipidemia "stimulates macrophage proliferation by a pathway that may involve the glucose-dependent oxidation of LDL."<sup>22</sup> As we know, one possible cause of arterial lining damage that leads to atherosclerosis is hyperlipidemia. Another is high blood pressure.

Another important connection: an increase in circulating nonesterified fatty acids results in LDL formation through a process that is especially efficient in visceral adipocyte tissue. When the body uses both the subcutaneous and visceral fat storage spaces, lipid accumulation begins in other organs, like the liver and the pancreas, potentially resulting in insulin resistance.<sup>23</sup>

We can see, then, that lipid metabolism, like glucose metabolism, glycation and inflammation, is an invaluable component of the energy equation, which, when unbalanced, can result in metabolic consequence such as MetS.

## HOW NUTRITIONAL FACTORS IN METABOLIC MULTI SUPPORT METABOLIC HEALTH\*

To review: We've discussed how, given the damage inflammation can cause to adipocytes, inflammation is linked to insulin resistance and fat deposits elsewhere in the body. We've considered how glucose metabolism can affect risk factors of metabolic syndrome more commonly associated with lipid metabolism, and vice versa.

And now we'll discuss why Metabolic Multi is the right tool to give your patients in support of their personal quests for healthy living.

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Encouragingly, progress in our understand of the highly complex relationships between each of the pathophysiological events described will allow for better-designed support options in the form of nutraceuticals. Metabolic Multi is one example.

It is important to note that, much like the metabolic factors mentioned in this document, the ingredients in DaVinci's Metabolic Multi are connected to several aspects of metabolic health. When we discuss ingredients that support metabolism and insulin utilization metabolism, it is likely that these ingredients will also offer support for a healthy immunovascular response, etc.

### *Normal Immunovascular Response Support*

To support a normal immunovascular response, free radical scavengers are a necessary formula addition. In a multivitamin, many of those exist in the standard mineral and vitamin components. However, Metabolic Multi provides other factors to support a healthy expression of this process, as well.

Curcumin, a compound in another spice, turmeric, also offers support for a healthy inflammatory response. Specifically, curcumin has been studied for its potential support of normal insulin resistance. In addition, literature suggest curcumin may offer immunovascular support through a mechanism of (PPAR-gamma) activation.<sup>24</sup>

In the DaVinci formula, the compound is included in a patented and highly bioavailable form. Meriva® Curcumin Phytosome® has been extensively studied. Pharmacokinetic studies demonstrate a nearly 30-fold increase in bioavailability as compared to standard curcumin extracts. (need citation). Further, curcumin is instrumental in the supporting healthy expression of NF-Kappa B molecular mediators.

Vitamin D is also known to support the same healthy genetic expression of NF-Kappa B. Metabolic Multi features 2000 IU of vitamin D per serving.

There is also evidence that boron may serve as a signal suppressor, supporting regulation of certain enzymatic activities—specifically, those known to be periodically elevated during times of increased stress.<sup>25</sup>

Incidentally boron also supports the health of a number of metabolic processes, including normal hormone balance.

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### *Support to address AGEs and macronutrient metabolism*

A detailed combination of ingredients in Metabolic Multi offers comprehensive support for nutrient balance and metabolism. That combination includes: cinnamon (one of many multifaceted ingredients, as mentioned) green tea, l-carnosine, berberine, benfotiamine, vanadium, chromium, trans-resveratrol and r-alpha lipoic acid.

Some of the ingredients in this combination also offer support for healthy levels of AGEs. In addition, every free radical scavenging ingredient in Metabolic Multi provides similar support, as AGEs cause oxidative damage.

The green tea in Metabolic Multi, GreenSelect® Green Tea Phytosome, has been extensively studied for its antioxidant activity.

In one trial, the antioxidant parameter TRAP, measured as Trolox equivalents, has been evaluated. A 20% increase of the antioxidative capacity was observed in volunteers treated with GreenSelect® Phytosome®.<sup>26</sup>

The Phytosome form is also known to offer greater bioavailability than standard GreenSelect®:

In one study comparing the two, the following results were revealed: "After oral administration of GreenSelect® to healthy subjects (n=12), EGCG reached maximum concentration (Cmax) of 0.8 µg/mL after two hours. After oral consumption of an equal dose of the same green tea extract complexed with phospholipids (GreenSelect® Phytosome®) (n=12), Cmax was 1.9 µg/mL after two hours."<sup>27,28</sup>

Moreover: "The AUC value for the phytosome was three times greater than free form green tea. Furthermore, following administration of non-complexed green tea, EGCG cannot be traced in plasma four hours after oral administration. On the contrary, after administration of the phytosome, the EGCG plasma values after four hours were superior to the Cmax of the free form at two hours (Cmax=0.8µg/mL)."<sup>29,30</sup>

GreenSelect® has also been studied with respect to its effects on MetS and body composition in conjunction with diet and lifestyle changes. In both clinical trials, GreenSelect® exhibited beneficial activity regarding metabolic health markers.<sup>31,32</sup>

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“A recently developed oral formulation in the form of coated tablets (Monoselect Camellia®) (Mon-Cam) containing highly bioavailable green tea extract (GreenSelect® Phytosome) was tested in obese subjects (n=100) of both genders on a hypocaloric diet. Fifty subjects were assigned to the green tea extract plus hypocaloric diet, while the other 50 subjects followed the hypocaloric diet only. After 90 days of treatment, significant weight loss and decreased body mass index (BMI) were observed in the group taking the herbal extract (14-kg loss in the green tea group compared to a 5-kg loss in the diet-only group).”<sup>33</sup>

Both green tea and cinnamon offer support for the normal degradation of glycosylated proteins.

Carnosine also offers support for said proteolysis. Due to its roles in supporting a normal rate of AGE formation and in free radical scavenging, carnosine offers support for a healthy cell life cycle. Perhaps most important is carnosine’s place in energy metabolism. It helps support normal fasting blood glucose serum levels, and it appears that carnosine influences hypoglycemic, hypotensive, and lipolytic activity through supporting healthy regulation of autonomic nerves, involving its relationship with histamine and the suprachiasmatic nucleus.<sup>34</sup>

Further, carnosine supports a normal pH in the body. It can therefore act as a buffer, supporting cell membrane health even in acidic conditions such as those associated with exertion.

Benfotiamine is a fat-soluble form of vitamin B1 (thiamine) that also supports glucose balance and addresses glycation through helping to protect the body’s tissues from AGEs. Importantly, enzymes critical to macronutrient metabolism may need thiamine to function. Because thiamine is water soluble, a fat-soluble thiamine derivative may offer a more bioavailable delivery solution.

Berberine, which also supports a healthy expression of NF Kappa B through the same mode of action as do curcumin and vitamin D, supports healthy nutrient metabolism and normal insulin sensitivity.<sup>35,36</sup>

Vanadium supports insulin sensitivity. Chromium supports the body’s ability to metabolize glucose. It also provides support for normal cholesterol levels, muscle health and eye health.

Trans-resveratrol is an important ingredient for supporting insulin sensitivity and macronutrient balance. Trans-resveratrol works at the genetic level. Its principal mode of action is the support for normal activation of the enzyme Sirtuin 1, which deacylates the PGC-1 alpha (a peroxisome proliferator), thereby reducing the gene expression of specific molecular mediators. The results: resveratrol supports lipolysis and the normal expression of NF-kB (Nuclear factor-kappa beta) and formation of TNF-Alpha. Through this mechanism, trans-resveratrol also supports a healthy cell life cycle and longevity.

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R-alpha lipoic acid supports both normal macronutrient metabolism and insulin utilization and offers free radical scavenging support to address glycation. Importantly, it helps support and restore healthy intracellular glutathione levels. In comparison to ALA, R-ALA is the biologically active form of the ingredient, and is therefore better suited for supplementation.

### *Support for normal lipid metabolism, cholesterol levels and cardiovascular health*

A novel, patented ingredient in Metabolic Multi, Purple Tea with GHG™ is a variety of *Camellia sinensis* recently developed and grown in Kenya. It was developed with high levels of anthocyanins. Specifically, it contains 1,2-di-Galloyl-4,6-Hexahydroxydiphenoyl--D-Glucose (GHG), a polyphenol compound not found in green, black or oolong tea varieties.

GHG supports fat metabolism and inhibition of lipid peroxidation-induced cytotoxicity. Through this mechanism of action, GHG may support overall skin health and normal aging of the skin cells.

Purple Tea with GHG Extract has been shown in two small, open-label human clinical studies to support weight loss and body composition. Research currently suggests that these polyphenols may support normal pancreatic lipase activity and help support normal fat absorption and healthy fat metabolism.<sup>37,38</sup>

Boron supports normal hormone balance, and we know that endocrine systems can affect lipid metabolism. Through supporting normal hormone balance, boron provides support for normal fat metabolism in the body. We can see, then, that boron supports all three important aspects of metabolic health through its mechanisms of action.

The addition of choline to the formula signifies normal homocysteine levels are of utmost importance in supporting metabolic health. The majority of the body's choline is located in phospholipids. Supplemental choline provides support for normal levels of cholesterol.

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## ADDED SUPPORTIVE PROPERTIES OF METABOLIC MULTI INGREDIENTS

Aside from (but still involved in) the ingredient focuses described above, Metabolic Multi provides support for a wide range of metabolic functions including:

- Defense against oxidative stress
- Immune system function
- Joint health
- Eye health
- Bone maintenance and integrity
- Nervous system function

Specifically, the inclusion of lutein, lycopene and zeaxanthin represents ocular health support. In addition, though, these three ingredients also offer added support for defense against oxidative damage—as do many of the ingredients in Metabolic Multi.

Quatrefolic® from Gnosis represents a breakthrough in folate supplementation with regard to an active, stable and highly bioavailable form. It's important to note that biologically active folate has an expansive role in your patient's body. From support for cardiovascular health to support for normal hormonal balance, folate offers a comprehensive nutrient choice. Quatrefolic® is attached to a glucosamine salt, which is more rapidly absorbed and utilized than is a calcium-bound form of methylated folate.

Boron, discussed earlier with regard to its support of healthy physiological function during times of elevated stress, also supports bone health. It is thought to do so by supporting healthy estrogen levels and calcium utilization.<sup>39</sup>

Active forms of B12, B6 and riboflavin offer nerve health support, and taurine also provides support for nervous system health and energy levels.

Vitamin K2 as Menaquinone-7 provides bone health support. The vitamin's synergistic relationship with vitamin D makes it an ideal addition to this formula. The combination supports not only bone health, but also vascular health and a healthy balance between fat-soluble vitamins. K2 is fast becoming one of the foremost nutrients in research concerning longevity support.

Magnesium provides support for healthy blood pressure (a risk factor for metabolic syndrome), relaxation, and calcium absorption and assimilation.

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## WHY METABOLIC MULTI FOR YOUR PATIENTS?

Metabolic health involves various factors and complex connections. Explaining how lipid and other macronutrient metabolism relate to insulin utilization may not always hit the mark with your patients. But offering a formula that provides comprehensive support for multiple aspects of metabolic health may just be the offer they need to know you're serious about complementing their efforts in changing lifestyle choices.

With 38 specialized nutrients, active nutrient forms, patented Phytosome® technology, and an ingredient combinations designed specifically for each lipid metabolism, inflammation and glucose metabolism support, Metabolic Multi truly has it all.

Start your patients down the path to reversing metabolic syndrome with this important supplement choice.

## What Else Should You Know About Metabolic Multi?

**IT'S GLUTEN FREE AND VEGETARIAN**  
For your patients who are concerned about gluten sensitivity, Metabolic Multi is a perfect option.

**IT CONTAINS ACTIVE FORMS OF NUTRIENTS**  
A reduced requirement for the body to convert these is especially ideal for patients with concerns about GI dysfunction or discomfort

**IT CONTAINS PHYTOSOME COMPLEXES FOR SUPERIOR DELIVERY**  
Phytosome complexes bind an herbal extract to a phospholipid. In this case it's phosphatidylcholine, a principal element of cell membranes. This unique Phytosome® complex easily crosses the gut barrier, resulting in significantly higher blood levels of the ingredient the Phytosome is attached to.

The complex improves the bioavailability of the natural molecules and stabilizes them at intestinal pH values.

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# SUPPLEMENT FACTS

Serving Size 6 Capsules	Amount Per Serving	Amount Per Serving
Vitamin A (as 50% Retinyl Acetate, 50% Beta Carotene)	3,500 IU	Chromium (as Cr Polynicotinate)† 400 mcg
Vitamin C (as Ca Ascorbate & Ascorbyl Palmitate)	620 mg	Potassium (as K Citrate) 50 mg
Vitamin D3 (as Cholecalciferol)	2,000 IU	Taurine 300 mg
Vitamin E (as d-alpha Tocopheryl Succinate)	100 IU	R-Alpha Lipoic Acid (Sodium Salt) 150 mg
Vitamin K2 (as Menaquinone-7)	100 mcg	Inositol 125 mg
Thiamine (as Thiamine HCl)	25 mg	Berberine HCl 100 mg
Riboflavin (as Riboflavin & Riboflavin 5-Phosphate)	37.5 mg	Choline (as Choline Bitartrate) 100 mg
Niacin (as Niacinamide)	75 mg	Cinnamon Dried Bark Extract (10:1) 100 mg
Vitamin B6 (as Pyridoxal 5-Phosphate & Pyridoxine HCl)	25 mg	Greenselect® Green Tea Phytosome® (Camellia sinensis leaf extract/ Phosphatidylcholine complex)
Folate (as [6S]-5-methyltetrahydrofolic acid from 1,600 mcg of Quatrefolic® [6S]-5-methyltetrahydrofolic acid, glucosamine salt)	800 mcg	100 mg
Vitamin B12 (as methylcobalamin)	500 mcg	Benfotiamine 50 mg
Biotin	3000 mcg	Meriva® Curcumin Phytosome® (Curcuma longa root extract/ Phosphatidylcholine complex)
Pantothenic Acid (as Ca Pantothenate)	50 mg	50 mg
Calcium (as Ca Citrate)	150 mg	L-Carnosine 50 mg
Iodine (as K Iodide)	200 mcg	Alluvia™ Purple Tea (Camellia sinensis) Leaf Extract (Standardized to 3% GHG™)
Magnesium (as Mg Citrate)	150 mg	25 mg
Zinc (as Zn Citrate)	15 mg	Trans resveratrol (from Polygonum cuspidatum) 25 mg
Selenium (as Selenomethionine)	70 mcg	Lutein 6 mg
Copper (as Cu Glycinate)	2 mg	Boron (as B Glycinate) 2 mg
Manganese (as Mn Citrate)	2000 mcg	Lycopene 1.25 mg
		Zeaxanthin 1 mg
		Vanadium (as bis-glycinato oxo vanadium) 100 mcg

†ChromeMate® brand niacin-bound chromium.

Other ingredients: vegetable cellulose (capsule), microcrystalline cellulose, vegetarian leucine.



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 Quatrefolic® is a registered trademark of Gnosis S.p.A. Corporation. U.S. Patent No. 7,947,662  
 Alluvia™ and GHG™ are trademarks of Maypro Industries LLC.  
 ChromeMate® is a registered trademark of InterHealth N.I.



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