

Metabolic Synergy™



Nutritional Support for Optimal Glucose, Insulin & Leptin Levels

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Metabolic Synergy™ is an ideal formula for the *metabolic syndrome patient*. This multivitamin was originally designed by a diabetes specialist, Dr. Ron Rosedale, and was updated with the help of Dr. Bob Steinberg. It includes two more state of the art, newly researched anti-glycating agents *carnosine* and *benfothiamine* (a form of vitamin B1) for preventing diabetic complications.

The mineral forms of magnesium, chromium, zinc, manganese and vanadium are true chelates from Albion, the leader in the manufacture of mineral chelates with superior absorption. A few core nutrients have been added to make **Metabolic Synergy™** a complete multivitamin mineral.

Supplement Facts			
Serving Size 6 capsules Servings Per Container 30			
Amount Per Serving		% Daily Value	
Vitamin A (from fish liver oil and mixed carotenoids from palm tree fruit)	3000 IU	60%	Magnesium (as Magnesium Chelazome®Bis-Glycinate Chelate)
Vitamin C (as Ascorbic Acid)	500 mg	833%	Zinc (as Zinc Chelazome®Bis-Glycinate Chelate)
Vitamin D3 (as Cholecalciferol)	400 IU	100%	Selenium (as Selenium Glycinate Complex)
Vitamin E d-gamma tocopherol	50 IU 100 mg	90%	Manganese (as Manganese Chelazome®Bis-Glycinate Chelate)
d-delta tocopherol	42 mg		Chromium (as Chromium Chelavite®Nicotinate-Glycinate Chelate)
d-alpha tocopherol	22 mg		Molybdenum (as Bis-Glycinate Chelate)
d-beta tocopherol	3 mg		Potassium (as Potassium Glycinate Complex)
Vitamin B1 (as Thiamine HCl)	25 mg	1667%	Alpha Lipoic Acid
Vitamin B2 (as Riboflavin)	25mg	1471%	Taurine
Vitamin B3 (as Niacinamide)	50 mg	250%	Inositol
Vitamin B6 (as Pyridoxine HCl and Pyridoxal-5-Phosphate)	50 mg	2500%	Green Tea (<i>Camellia sinensis</i>)(leaf [standardized to contain 95% Polyphenols])
Folates (NatureFolate™ blend)	400 mcg	100%	Carnosine
Vitamin B12 (as Methylcobalamin)	1000 mcg	16667%	Benfothiamine
Biotin (as d-Biotin)	4 mg	1333%	Vanadium (as Vanadium Chelavite®Nicotinate-Glycinate Chelate)
Pantothenic Acid (as d-Calcium Pantothenate)	50 mg	500%	
Iodine (as Potassium Iodide)	75 mcg	50%	

Other Ingredients: Gelatin (capsule), rice powder, magnesium stearate.

The following has been added to this amazing formula:

- **600 mg lipoic acid + 4 mg biotin** - prevents the typical reduction in carboxylase enzymes seen in research when lipoic acid is given alone. These two nutrients together aid healthy insulin secretion and glucose metabolism.
- **600 mg taurine, 100mg EGCg from green tea and 400 IU vitamin D** - all of which help insulin to work better
- **50 mg benfothiamine, 200 mg carnosine and 50 IU of high gamma vitamin E** - to protect from neuropathy & kidney damage
- **3000 IU vitamin A** - important for immune system
- **75 mg vitamin B1 (as thiamine HCl)** - needed for energy
- **100 mcg molybdenum** - needed for detoxification
- **400 mcg NatureFolate™** - our proprietary blend of active isomer, naturally-occurring folates

Metabolic Synergy™ provides nutrients needed for the TCA (tricarboxylic acid) cycle. This is also known as the Krebs cycle or citric acid cycle. This cycle allows the body to burn food for energy by converting glucose into ATP. The more glucose burned, the less glucose in the bloodstream.

Nutrients needed for the TCA cycle include magnesium, manganese and lipoic acid. Vanadium and magnesium, due to their insulin mimicking action, help glucose get inside cells where this burning occurs. These two nutrients are also helpful for blood pressure problems.

Metabolic syndrome is a condition many people risk developing by the time they reach middle age. Metabolic syndrome is defined as a cluster of symptoms or disorders including insulin and leptin resistance, hyperlipidemia (elevated cholesterol and triglycerides), high blood pressure and overweight (weight gain in the belly region is a tell-tale sign). The factors that may lead to these conditions are:

- Excessive carbohydrate consumption, with especially damaging effects from fructose and galactose
- Excessive stored body fat, especially in the abdominal area, due to its active hormonal activity
- Nutrient deficiencies (inositol, chromium, vanadium, magnesium, zinc, omega-3 fatty acids, vitamin D, taurine, vitamin C, vitamins B1, B2, B3)
- High oxidative stress, which depletes antioxidants
- Prolonged demand on the pancreas to produce insulin
- Excessive stress (high adrenaline and cortisol)

A sustained program of lifestyle and diet changes combined with proper nutrient supplementation can reverse and correct most of the underlying causes of the metabolic syndrome (for more details, please see the Designs for Health metabolic syndrome support protocol at www.designsforhealth.com).

Metabolic Synergy™ is protective against many complications associated with out-of-control glucose levels by reducing its ability to glycate various body proteins in the bloodstream, which in turn has damaging effects on the eyes, brain, kidney, etc. This is achieved with the help of lipoic acid, carnosine and benfotiamine, which have been proven to reduce the risk of neuropathy/retinopathy along with support from vitamin B6, B12 and high gamma vitamin E. This formula has multiple antioxidants for controlling the oxidative stress common in a diabetic.

Excessive fructose consumption can lead to excessive glycation of proteins (up to 16 times faster), hypertension, impaired insulin function (via reduced tyrosine phosphorylation). **Metabolic Synergy™** reduces the damaging effects of fructose consumption through EGCG, zinc, and taurine.

The benefits of normalizing glucose, insulin, and leptin metabolism include: reduced risk of diabetes-related complications (neuropathy, kidney or vision damage), lower cardiovascular risk (lower blood pressure, triglycerides, increased HDL, better endothelial function), reduced cell proliferation (tumors), less water retention, less fat storage and easier fat release from the adipose cells.

This product works well with Designs for Health PaleoGreens™, EndoTrim™, PaleoFiber™ and CLA

References

1. Hipkiss AR, Brownson . Reaction of carnosine with aged proteins: another protective process? Ann N Y Acad Sci. 2002 Apr;959:285-94.
2. Waltner-Law ME, Wang XL Epigallocatechin gallate, a constituent of green tea, represses hepatic glucose production. J Biol Chem. 2002 Sep 20;277(38):34933-40. Epub 2002 Jul 12.
3. Jacob S, Ruus P, Hermann R, Oral administration of RAC-alpha-lipoic acid modulates insulin sensitivity in patients with type-2 diabetes mellitus: a placebo-controlled trial. Free Radic Biol Med. 1999 Aug;27(3-4):309-14.
4. Boucher BJ . Inadequate vitamin D status: does it contribute to the disorders comprising syndrome 'X'? Br J Nutr. 1998 Apr;79(4):315-27.
5. Hammes HP, Du X . Benfotiamine blocks three major pathways of hyperglycemic damage and prevents experimental diabetic retinopathy. Nat Med. 2003 Mar;9(3):294-9. Epub 2003 Feb 18.
6. Maassen JA, Mitochondrial diabetes, diabetes and the thiamine-responsive megaloblastic anaemia syndrome and MODY-2. Diseases with common pathophysiology? Panminerva Med. 2002 Dec;44(4):295-300.
7. Ozelcikay AT, Becker DJ. Improvement of glucose and lipid metabolism in diabetic rats treated with molybdate. Am J Physiol. 1996 Feb;270(2 Pt 1):E344-52.

Metabolic Synergy™ may help:

- Support conversion of carbohydrates to energy
- Lower fasting and average glucose levels (hemoglobin A1C)
- Lower fasting and average insulin and leptin levels with improved tissue sensitivity
- Reduce risk of dysglycemia (blood sugar highs and lows)
- Support pancreatic sensitivity & ability to produce adequate amounts of insulin
- Help prevent problems associated with out-of- control sugar levels (glycation) such as:
 - neuropathy
 - retinopathy
 - kidney damage
 - blood vessel damage
 - pancreatic damage
- Prevent nutrient deficiencies induced by excessively high glucose/insulin levels
- Lower cardiovascular complications associated with diabetes and insulin resistance
- Protect from metabolic damage induced by excessive fructose consumption
- Lower homocysteine