

TECHNICAL DATA SHEET

Glycemic Formula



*Diabetes ranks as the 4th cause of death in the United States, and it affects 16 million people annually. Research shows that diabetes, particularly Type II diabetes, is preventable with proper nutrition, diet and exercise. **Glycemic Formula provides key nutrients that include Bitter mellon (Momordica charantia), Gymnema sylvestre, chromium, vanadium, and alpha-lipoic acid that help optimize cellular metabolism of glucose and prevent complications associated with diabetes.***

INGREDIENTS

Bitter Mellon (Momordica charantia) fruit and fruit extracts seem to have hypoglycemic activity in humans with blood sugar issues (1). Bitter mellon contains an insulin-like polypeptide called polypeptide P, plant insulin, or p-insulin. P-insulin has pharmacologic effects similar to bovine insulin with an onset of action between 30 and 60 minutes, and a peak effect at about four hours (2). A double-blind, placebo controlled study found that Momordica charantia extract lowered blood-sugar levels on an average of 25% in patients with Type II diabetes.

Gymnema Sylvestre the applicable part is the leaf. Among the active constituents of Gymnema sylvestre are the gymnemic acids. Support of the pancreas to maintain healthy blood sugar balance is what gymnema provides nutritionally. Preliminary research involving human volunteers in two separate trials suggests that Gymnema sylvestre promotes healthy pancreatic cell function (3). For diabetes, gymnema may effect blood glucose in several ways. Gymnemic acids seem to reduce intestinal absorption of glucose and may stimulate pancreatic beta cell growth (4). Other research indicates that constituents of gymnema have a direct effect on beta-cell function, increasing the release of insulin (5).

Alpha-Lipoic Acid was identified as a vitamin when it was isolated 50 years ago, but was reclassified upon finding that it is synthesized in humans and animals (6). Alpha-lipoic acid is both water and fat-soluble and can regenerate endogenous antioxidants, such as vitamin E, vitamin C, and glutathione, and prevent oxidative damage (7). By reducing oxidative stress, patients can experience fewer complications associated with diabetes. Alpha-lipoic acid has been shown to increase glucose tolerance and glucose metabolism via potentiation of the Krebs cycle.

Alpha-Lipoic Acid (continued) reduces oxidative stress that is often a serious problem in patients with diabetes. Unlike most antioxidants that work in either the fatty parts of the body (including the outer layers of cells) or the watery parts (including the blood), alpha-lipoic acid works in both. This ability allows alpha-lipoic acid to protect cells throughout the body.

Chromium is an essential trace element. The activity of chromium depends on its valance state. Metallic chromium, or chromium 0, has no activity. Chromium III (Cr III) is the form found in food supplements. Chromium is sometimes referred to as glucose tolerance factor (GTF), but GTF is actually a complex of molecules found in the body that includes chromium bound to single molecules of glycine, cysteine, glutamic acid, and two molecules of nicotinic acid. Chromium is thought to be the active component of the complex. Discovery of the role of chromium in insulin function occurred when patients on long-term total parenteral nutrition (TPN) developed symptoms of diabetes that did not respond to insulin, but were reversed by chromium (8). Clinical studies of diabetic patients who supplement their diet with chromium experience lower fasting glucose levels, and decreased total cholesterol and triglyceride levels.

Vanadium is a trace mineral. Vanadium can mimic the action of insulin. Vanadium activates the receptor; stimulates glucose oxidation and transport; inhibits lipolysis in adipose tissue; stimulates glycogen synthesis in the liver; inhibits hepatic gluconeogenesis; inhibits intestinal glucose transport; and increases glucose uptake, utilization, and glycogen synthesis in skeletal muscle (9). Vanadium appears to augment the effects of insulin in insulin-resistant type 2 diabetes (10).

Continued on next page...

... Continued from previous page.

Zinc is a biologically essential trace mineral and is the second most abundant trace element in the body. It is a cofactor in many biological processes including DNA, RNA, and protein synthesis. Zinc deficiency is characterized by growth retardation, low insulin levels and reduced levels of insulin-like growth (IGF)-1 (10).

Copper is an essential trace mineral. Copper is required to absorb and utilize iron. It is also a part of the antioxidant enzyme superoxide dismutase (SOD). Copper is needed to make adenosine triphosphate (ATP).

Vitamin B6 (Pyridoxal-5-Phosphate) is included to reduce the occurrence of diabetic neuropathy, a serious complication of diabetes. Because the signs of vitamin B6 deficiency and diabetic neuropathy are very similar, every patient with diabetes should supplement with B6. We chose to use the more expensive raw material, the biologically active form of B6, pyridoxal-5-phosphate, rather than just pyridoxine because there appears to be a problem with the body (especially with women) converting pyridoxine into pyridoxal-5-phosphate. Vitamin B6 may also prevent other complications associated with diabetes because of its ability to prevent the glycosylation of proteins.

Magnesium is involved with more than 300 enzyme systems. Magnesium is required for the formation of cyclic AMP (cAMP) and is involved in ion movements across cell membranes.

This formula is designed to be safely used with Ultra High Formula.

Glycemic Formula

Quantity: 90 capsules

Serving size: 3 capsules

Directions: 1 capsule, 3 times daily with food, or as directed by your physician.

Each 3 capsules contain:

Magnesium (as Citrate-Malate)	75 mg
Vitamin B6 (as Pyridoxyl-5'-phosphate)	30 mg
Chromium (as Nicotinate)	900 mcg
Zinc (as Methionine)	15 mg
Copper (as Aspartate)	1 mg
BMOV Vanadium	100 mcg
Momordica charantia (Bitter Melon)	450 mg
Gymnema sylvestre extract (4:1)	450 mg
Alpha Lipoic Acid	75 mg

Other ingredients: Vegetarian capsules.

Contains No: wheat, dairy, soy, corn or preservatives. No fillers, binders, or flowing agents.

Patients: Consult with your healthcare professional for the proper dosage and use of this formula.

For more information about this and other Condition Specific Formulas®, please visit our website at:

www.mpn8.com



Portland, OR 97225

REFERENCES:

1. J Ethnopharmacol 1998; 44: 117-21
2. Phytomedicine 1996; 294
3. J Ethnopharmacol 1990;(3): 281-94
4. Townsend Letter for Doctors & Patients 1998; 180:72-84
5. J Endocrinol 1999; 163:207-12.
6. Free Rad Biol Med 1995; 19:227-50
7. Gen Pharmacol 1997; 29:315-31.
8. J Nutr 2000; 130:715-8
9. Diabetes 1994; 43:9-15
10. Diabetes Care 1998; 21:2194-5
11. J Nutr 2001; 4:1135-41