

## DESCRIPTION:

There are over 18 million people in the United States with diabetes. This is over 6% of the population. Diabetes costs Americans about \$132 billion annually. There is \$92 billion in direct medical costs and another \$40 billion in disability, work loss and premature mortality. The overall risk for death among people with diabetes is about two times that of people without diabetes.

The two most common types of diabetes are Type 1 or IDDM (insulin-dependent diabetes mellitus). Type 1 accounts for about 5-10% of all cases. Type 1 develops when the body's immune system destroys pancreatic beta cells. These cells make the hormone insulin that regulates blood glucose.

Type 2 diabetes, NIDDM (non-insulin-dependent diabetes mellitus or adult onset diabetes) accounts for about 90%-95% of all diagnosed cases. Type 2 usually starts with insulin resistance. As the need for insulin rises, the pancreas gradually loses its ability to produce insulin. Type 2 diabetes is associated with older age, obesity, family history, a prior history of gestational diabetes, impaired glucose tolerance, physical inactivity and race/ethnicity.

Many people with Type 2 diabetes can control their blood glucose by following a careful diet and exercise program, losing weight and taking nutritional supplements like CarbAid.<sup>1</sup>

## ACTIVES:

**Vitamin C**- Studies show that diabetics that have low levels of Vitamin C have had bad metabolic control. The study also showed that supplementation of Vitamin C in Type II diabetics greatly improved blood sugar control plus it also lowered cholesterol and triglyceride levels. Vitamin C competes with glucose for transport into the cell. It also interacts with the polyol pathway, often associated with long term diabetic complications. Excess blood sugar is converted to glycogen and fat then stored. If this fat is oxidized by free radicals it can become harmful to the artery walls and promote plaquing and arteriosclerosis. Vitamin C is well known for its antioxidant protection of LDL cholesterol.<sup>2</sup>

**B-Complex**- The B-complex vitamins are used for their role in the digestion and metabolism of carbohydrates, fats and protein. Niacin also helps improve peripheral circulation, a common problem with diabetics. Pantothenic acid also nourishes the adrenal glands. The adrenals work with the pancreas and liver in the metabolism of foods and blood sugar control. Adrenal support is very beneficial to hypoglycemics who are run down.

**Magnesium**- Diabetics often are deficient in magnesium. Magnesium supplementation improves metabolic control for diabetics. Magnesium prevents peripheral vascular disease, often seen in diabetics. It is also important to diabetics due to its ability to prevent arterial spasms which are already at increased risk in diabetics. Diabetics many times develop cardiovascular disease, the cardio-protective qualities of magnesium are what makes it so valuable.<sup>3</sup>

90 capsules per bottle

Three capsules provide:

Vitamin C (Ascorbic Acid)	300 mg
Vitamin B1 (Thiamine Mononitrate)	50 mg
Vitamin B2 (Riboflavin)	50 mg
Vitamin B3 (Niacin)	50 mg
Vitamin B5 (Pantothenic Acid)	100 mg
Vitamin B6 (Pyridoxine HCL)	50 mg
Vitamin B12 (Cyanocobalamin)	250 mcg
Folic Acid	200 mcg
Biotin	300 mcg
Magnesium (Albion Amino Acid Chelate)	50 mg
Zinc (Albion Amino Acid Chelate)	15 mg
Manganese (Albion Amino Acid Chelate)	5 mg
Chromium (Chelavite® Albion Amino Acid Chelate)*	200 mcg
Choline (Bitartrate)	100 mg
Inositol	100 mg
Vanadyl Sulfate	9 mg
Gymnema Sylvestre Std. Extract (25% Gymnemic Acids)	250 mg
Bitter Melon Extract 4:1	150 mg
Alpha Lipoic Acid	45 mg
Amylase	2000 DU
Glucoamalyse	4 AG
Invertase	50 INVU

Other ingredients: Gelatin, Rice Flour, Magnesium Stearate, Silicon Dioxide, Magnesium Silicate.

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**Chromium Chelavite**- Chromium is essential for proper insulin activity. When chromium is deficient, insulin's action is impaired. Long term stress gives rise to a continuous release of cortisol, which leads to insulin resistance- glucose intolerance.<sup>4</sup> In clinical animal studies, Professor Mowat, et al., have found that supplementing Albion's chelated Chromium Chelavite to animals' diets consistently reduced cortisol by 19-27%.<sup>5</sup>

**Vanadyl Sulfate**- Research done at the Albert Einstein College of Medicine, showed that oral vanadyl sulfate improves insulin sensitivity in non-insulin dependent diabetes mellitus subjects. Vanadyl Sulfate increased glucose infusion rate by 82%. This was due to Vanadyl Sulfate's stimulating insulin to produce glycogen. Vanadyl Sulfate may improve a defect in insulin signaling.<sup>6</sup>

**Gymnema & Bitter Melon**- Research in India and Europe has shown the blood sugar regulating effects of these two herbs. These herbs support and repair the pancreas, making it more efficient in producing insulin. Insulin facilitates the transport of glucose into the cells where it is burned for energy. If the pancreas isn't able to keep up with insulin production, the excess glucose is stored as glycogen and fat. Years of dietary abuse from eating sugar, refined carbohydrates and fast foods takes a toll on the pancreas. This is why the supportive action and rejuvenating role of these herbs is so important.<sup>7</sup>

(More active ingredients on back)

# CarbAid continued...

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**Alpha Lipoic Acid (ALA)**- A collaborative study between the Mayo Clinic and a medical center in Russia found that alpha lipoic acid significantly and rapidly reduces the frequency and severity of symptoms of the most common kind of diabetic neuropathy. Symptoms decreased include burning and sharply cutting pain, prickling sensations and numbness.<sup>8</sup>

**Amylase, Glucoamylase and Invertase**- These enzymes are used to digest and break down carbohydrates and sugars. Amylase reduces large carbohydrates, starches and other polysaccharides to disaccharides including sucrose, lactose and maltose. Glucoamylase and Invertase breaks down the two unit sugars to free glucose and fructose. The prevalence of processed and highly refined carbohydrates in the American diet means that we consume great amounts of sugar. Dietary sugar is detrimental to diabetics and hypoglycemics. These enzymes will be a great digestive aid that will help tremendously with sugar metabolism.<sup>9</sup>

## CLINICAL INDICATIONS:

- *Diabetes*
- *Carbohydrate Metabolism*
- *Hypoglycemia*
- *Weight Loss*

## SUGGESTED USAGE:

1 to 2 capsules 3 times daily with meals.

**CONTRAINDICATIONS:** Pregnancy

**DRUG INTERACTIONS:** None known, however blood levels of glucose should be monitored by anyone concerned with blood sugar problems.

## REFERENCES:

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2. Johan, Eriksson M.D., Ph. D. "Magnesium and Ascorbic Acid Supplementation in Diabetes Mellitus." *Annals of Nutrition and Metabolism*. 1995;39: 217-223.
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4. A Companion to Medical Studies, Forrester, (Editor in Chief), 3<sup>rd</sup> Edition. Blackwell Scientific Publications, Oxford, pp. 23.11-23.21.
5. Mowat, DN, Chang, X, and Yang, WZ. "Chelated Chromium for Stressed Feeder Calves." *Can J Animal Sci*. 1993. 73:49.
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8. *Diabetes Care*. March 2003. <http://care.diabetesjournals.org>
9. Beazell, J.M. "A Reexamination of the role of the stomach in the digestion of carbohydrate and protein." *American Journal of Physiology*. 1941.132: 42-50.