

## **Diabetes: A Preventable Epidemic?**

**by Rachel Schwartzman, ND**

Diabetes is a disease in which your body cannot properly store and use glucose (as fuel) for energy and which leaves sufferers with blood glucose levels that are above normal. Glucose is the sugar derived from foods containing carbohydrates and sugars. Some examples of foods that contain carbohydrates and sugars include breads, cereals, pasta, rice, potatoes, fruits and some vegetables. After a meal, carbohydrates are broken down into glucose, which is carried by the blood to cells throughout the body.

Our body's cells use insulin, a hormone made in the pancreas, to help transport glucose into the cells where it can be converted into energy or used in the synthesis of other compounds necessary for a healthy body. Insulin is made by the beta cells in your pancreas and ensures body energy needs are met. Diabetics are people who develop diabetes because the pancreas does not make enough insulin, or because the cells in the muscles, liver, and body fat do not use insulin properly, or both. As a result, the amount of glucose in the blood increases while the cells are starved of energy.

### **The Types of Diabetes Explained**

Type 1 diabetes, formerly called Juvenile Diabetes or Insulin Dependent Diabetes Mellitus (IDDM), is usually diagnosed in children and adolescents and occurs when the beta cells of the pancreas no longer make insulin because the body's immune system has attacked and destroyed them. Approximately 10 per cent of people with diabetes have Type 1 diabetes. The remaining 90 per cent have Type 2 diabetes, formerly called Adult-onset Diabetes or Non-Insulin Dependent Diabetes Mellitus (NIDDM). This form of diabetes usually begins with insulin resistance, a condition in which muscle, liver, and fat cells do not use insulin properly. At first, the pancreas keeps up with the added demand by producing more insulin. But over time it loses the ability to secrete enough insulin in response to meals. Type 2 diabetes usually develops in adulthood, although increasing numbers of children in high-risk populations are being diagnosed.

Gestational diabetes develops in some women during the late stages of pregnancy. Although this form of diabetes usually goes away after the baby is born, a woman who has had it is more likely to develop Type 2 diabetes in later life. Gestational diabetes is caused by the hormones in pregnancy or by a shortage of insulin.

In diabetics, glucose builds up in your blood instead of being transported into the cells of the body and used for energy production. This high blood glucose level is the major sign of diabetes. Diabetics may also feel tired, be thirsty, urinate more often, be hungry, or be moody. Over the long term, abnormally high blood glucose levels (also called hyperglycemia) damages nerves and blood vessels, which can lead to complications such as heart disease and stroke, kidney disease, blindness, nerve problems, gum infections, and impotence.

Unfortunately, the incidence of diabetes continues to rise. In 2000, the World Health Organization (WHO) estimated that over 177 million people worldwide have diabetes. By 2025, this figure will top 300 million.

Treatments for diabetes vary slightly. A Type 1 diabetic needs to take insulin as his/her pancreas does not produce any insulin. Type 2 diabetes is often managed through healthy lifestyle choices such as exercise, weight loss, healthy food choices, supplements and medications.

### **Natural Health Products Commonly Used By Diabetics**

**Alpha Lipoic Acid (ALA)** - A vitamin-like antioxidant used for over 30 years by physicians in Germany, studies worldwide have shown ALA has the ability to normalize glucose uptake and utilization thus it helps in lowering glucose (sugar) levels in the blood of people with diabetes. With its antioxidant properties of fighting free radical damage ALA protects insulin receptors from damage as well as improving diabetic nerve damage and reducing pain associated with that nerve damage.

**Chromium Polynicotinate** - During a carbohydrate meal, levels of chromium increase as much as 5 times in the blood. Chromium is involved in the production of glucose tolerance factor (GTF). This factor helps insulin bind to its proper receptors, thereby stabilizing blood glucose levels. Several studies have shown that chromium can enhance the body's ability to metabolize glucose if it is impaired. Chromium Polynicotinate (CP), in addition to helping stabilize blood sugar levels, is also important to the synthesis of cholesterol, fats and proteins. CP consists of pure niacin-bound chromium, and niacin is a crucial vitamin that enhances chromium's absorption. CP has also been identified as the active component of GTF. CP has been found to possess greater biological activity than many other types of chromium supplements.

**Vanadium Sulphate** – Vanadium has been shown to normalize blood glucose levels and reduce glycosylated hemoglobin levels in patients with non-insulin dependent diabetes mellitus (NIDDM). In diabetics, vanadium supplements may have a positive effect in regulating blood glucose levels by mimicking the physiological effects of insulin. Through this insulin-mimetic effect, vanadium is thought to promote glycogen synthesis, maintain blood glucose levels and stimulate muscle growth.

**Bitter Melon** – Also known by its botanical name *Momordica charantia*, this green cucumber-shaped fruit is covered with gourd-like bumps and is cultivated in Asia, Africa and South America. Bitter Melon is widely used for its blood sugar lowering action, primarily in non-insulin dependent diabetes. It contains 2 compounds that mimic the effect of insulin and help control blood sugar levels.

**Gymnema Sylvestre** – Gymnema is an Ayurvedic herb originating from India. The leaf has been known for its medicinal application in Type 2 diabetes. When chewed, gymnema appears to directly interfere with the ability to taste sweet foods. For this reason the herb is known in Hindi as *gurmar*, or "sugar destroyer" which in turn decreases the desire to eat foods containing high amounts of sugar. Gymnema leaves

raise insulin levels, possibly due to the regeneration of the beta cells in the pancreas. The leaves are also noted for lowering serum cholesterol and triglycerides and reducing intestinal glucose uptake.

The above therapies may serve one well to prevent diabetes before it strikes, yet even if one has already been diagnosed with a type of diabetes, a full and happy life can still be achieved by following a diabetic diet, a daily exercise regimen, and by supplementing your diet with quality nutritional formulations.

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