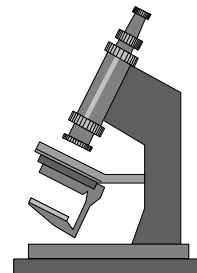


# IMMUNITION™ Report©



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## DIABETES – An Epidemic with Hope

**D**iabetes mellitus is a serious disorder now suffered by 16 million people in the U.S. alone! Why do we say diabetes is epidemic? Because rapidly increasing rates of obesity and lack of exercise are major causes, with 30% plus with diabetes unaware of their dangerous diabetic condition! Diabetes is the 6th leading cause of death and a major cause of blindness and amputation in America. You are at risk, but knowledge can bring obtainable solutions for prevention or control.

### Description of Diabetes Mellitus

**D**iabetes mellitus is a chronic endocrine disorder characterized by high blood sugar (hyperglycemia) due to the pancreas being unable to produce enough insulin to meet body cell needs. Insulin is a hormone needed to control the amount and to transport glucose (blood sugar), as well as certain amino acids and minerals, through the blood to energy-producing cells. When a lack of insulin occurs, glucose cannot move into the cells to create energy essential to life and the glucose level in the blood rises to abnormally high levels.

After a meal, a portion of the food eaten is broken down into glucose, a sugar. The glucose then passes into the bloodstream and by the presence and actions of the hormone insulin, becomes blood sugar that is then transported to and into the body's cells. A malfunction in this process related to insulin creates the forms of disease known as diabetes.

Normally, the pancreas produces the right amount of insulin to accommodate the quantity of sugar processed for cell delivery. However, if diabetes occurs, either the pancreas produces no insulin (Type 1), or insufficient insulin and the cells do not respond normally to the insulin delivered (Type 2).

High blood sugar levels due to lack of insulin, insufficient insulin or failure of delivery of adequate glucose into cells can

damage the (1) eyes - leading to diabetic retinopathy and possible blindness; (2) blood vessels - increasing risk of heart attack, stroke and peripheral artery obstruction; (3) nerves - leading often to diabetic neuropathy in limbs, foot sores and even possible amputation, (4) kidneys - leading too frequently to kidney failure and (5) impotence and/or digestive problems for many.

Weight control and diet are the first lines of defense against diabetes. Setting personal priorities with discipline in eating and exercise from youth are the best forms of prevention. If diagnosed, control of blood pressure, diet and blood glucose levels, plus regular exercise, screenings and check-ups, help reduce risks of complications.

### Forms of Diabetes

**T**wo major forms of diabetes include Type

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1 classified as insulin-dependent diabetes mellitus (IDDM - juvenile-onset diabetes). Type 1 affects about 10% of those diagnosed and is the most serious form of diabetes based on health risks.

Type 1 diabetes is an autoimmune disease in which the immune cells of the body attack and destroy the insulin-producing cells of the pancreas.

Type 2 diabetes is non-insulin dependent diabetes mellitus (NIDDM - adult-onset diabetes), usually, but not always, occurring in adults after age 30. In Type 2 diabetes the pancreas produces insulin, but in insufficient amounts, or the cells are resistant to insulin delivery into the cells.

Type 2 diabetes is characterized by high blood sugar and insulin in the blood due to improper intake by the cells. This imbalance in the blood causes reduced energy, blurred vision, itching due to vaginal yeast infection, weight loss, extreme thirst, slow wound healing, fungal and bacterial infections, fatigue, nausea and frequent urination. Type 2 diabetes is commonly associated with being overweight, especially around the abdomen area. Watch your diet – not your waist!

While Type 1 and Type 2 diabetes are most common, there are three additional less common types of diabetes designated gestational, secondary and impaired glucose tolerance (IGT).

### **How is Diabetes Diagnosed?**

**T**he basic criteria for being classified as a Type 2 diabetic is to have a fasting blood sugar level greater than or equal to 140 mg/dL after an overnight fast on two separate occasions. The American Diabetes Association considers a fasting blood sugar of greater than 126 mg/L to indicate diabetes. Your physician will take a urine sample to be tested for glucose and ketones. Ketones are acids that collect in the blood and urine when the body uses fat instead of glucose for energy.

Other test often performed are the oral glucose tolerance test to measure the body's ability to process glucose. For monitoring diabetes, the glycosylated hemoglobin (HbA1c) test is used to estimate an average of all blood sugar levels in your body over a 2 to 3 month time period.

People with Type 2 diabetes often cannot perceive sweet taste. An at-home test, to be confirmed by a clinical analysis, detects the sensitivity and capability to taste sweets: (1)

Totally avoid stimulants such as coffee, tea and soda before the test for 1 hour; (2) Fill 7 identical glasses with 8 ounces of water in each and label the glasses to indicate on separate glasses, "no sugar," "1/4 tsp sugar," "1/2 tsp sugar," "1 tsp sugar," "1 1/2 tsp sugar" and "2 tsp sugar." Add the amount of sugar to each glass. (3) Rearrange the glasses, hiding the labels from the person to be tested. (4) Sip from each glass through a straw and write down the amount of sugar you think each glass contains – rinse your mouth with pure water between test glasses.

People with Type 2, adult-onset, usually do not notice tasting sweetness until 1 1/2 to 2 teaspoons of sugar levels per 8 ounces.

### **Controlling Diabetes**

**A**lmost everyone with Type 1 diabetes and more than one-in-three with Type 2, must inject insulin to make up for the person's insulin deficiency. Insulin used is sourced from (1) pancreases of cows and pigs, with combinations frequent; (2) semi-synthetic, made by converting pork insulin into a form identical to human and (3) recombinant made

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by using genetic engineering. All insulin helps glucose levels remain near normal at about 70 to 120 milligrams per deciliter (mg/dl).

Problem areas associated with insulin intake are as follows:

- (1) Hypoglycemia or low blood sugar, sometimes called insulin shock, which occurs suddenly if too little food is eaten, a meal is delayed or in the case of extreme exercise. Symptoms include weakness, feeling cold, clammy, shaky with extreme fatigue and being pale.
- (2) Hyperglycemia, or high blood sugar, occurs when too much food is eaten or not enough insulin is taken. Thirst, frequent urination, nausea and high sugar in the urine and blood are symptoms.
- (3) Ketoacidosis, in severe form diabetic coma, develops when insulin and sugar are out of balance so that ketones accumulate dangerously in the blood.

For all forms of diabetes, but particularly for Type I, beta 1/3,1/6-d glucan nutritionally potentiates immune cells yielding increased production of the cytokine interleukin 1 which promotes enhanced insulin production in the pancreas. This action initiated by the beta 1/3,1/6-d glucan in turn appears to modulate the autoimmune mechanisms directed to the pancreatic islets that negatively impact insulin production in the pancreas (for research references on the web go to [www.betaglucan.org](http://www.betaglucan.org)).

In plain words, insulin production in the pancreas appears to be nutritionally promoted by oral ingestion of beta 1/3,1/6-d glucan due to correction in some instances of the inappropriate immune response that has stopped or inhibited natural insulin production. MG Glucan (a U.S. patented process glucan - not a product) has medical school researched unique properties that assure optimum nutritional immune cell potentiation while being non-prescription with no known drug contraindications.

Diet and exercise are essential elements in diabetes prevention and treatment. The American Diabetes Association recommends (1) up to 70% of all calories be obtained from carbohydrates and unsaturated fats; (2) between 10-20% of calories be obtained from protein; (3) Less than 10% of all calories should be from fat; (4) eat 30-35 grams of fiber daily and (5) eat no more than 300 mg of cholesterol daily.

A proper weight control and exercise program should be determined after physical examination by the primary health care provider. Walking 3 times weekly for 30 minutes and light weight bearing exercise are beneficial. You must stop smoking and avoid alcohol.

Currently there are four classes of prescription drugs usually used in diabetes control:

- (1) Sulfonylureas (Diabinese, Orinase, Glynase, etc.) which stimulate the pancreas to release more insulin;
- (2) Biguanides, including Glucophage and Metformin, which keep the liver from releasing too much glucose;
- (3) Alpha-glucose inhibitors such as Precose which slow digestion of carbohydrates and
- (4) Thiazolidinediones which control glucose levels by making muscles more sensitive to insulin.

### **Natural Supplements, Vitamins and Herbs**

**N**atural supplements, herbs and vitamins can nutritionally help in promoting insulin production and delivery in both Type 1, Type 2 diabetes. Keep your primary health care provider informed about

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what supplements are being taken to assure proper monitoring. Suggested beneficial nutritional supplements, vitamins and herbs for many include:

Alpha Lipoic Acid: Antioxidant that improves diabetic neuropathy by improving blood sugar metabolism, improving blood flow to peripheral nerves and stimulating the regeneration of nerve fibers. 300 mg a day in divided doses with Gamma-linolenic acid (GLA) as an essential fatty acid of 4-6 grams that calms nerves and provides better absorption.

Gymnema sylvestre: Doctors practicing India's traditional Ayurvedic Medicine have used this herb for years to lower blood sugar by increasing the efficiency of insulin and supporting the pancreas ability to produce insulin. Use under doctor's supervision primarily for Type 2 and not as a substitute for insulin. 400 mg daily of standardized extract to contain 24% gymnemic acids suggested.

Chromium Picolinate: (1,000 mcg/d split) Improves needed insulin sensitivity. Double-blind studies indicate improves glucose tolerance in Types 1 and 2 diabetes. May also lower triglycerides and cholesterols, reducing diabetes complications.

Vanadyl Sulfate: A nutrient that improves glucose tolerance in those with type 2 diabetes.

Biotin: Involved with glucose metabolism and may be nutritionally helpful for type 1 diabetes.

Vitamins C: Antioxidant that helps lower a sugar known as sorbital that elevated damages the eyes, nerves and kidneys of diabetics. 2000-3,000 mg daily in divided doses suggested.

Vitamin E: Antioxidant that improves glucose intolerance in Type 2 while nutritionally protecting blood vessels from damage. 400 IU daily suggested.

Vitamin B6: (150 mg/d) Frequently low in diabetics – improves nerve disorders due to complications and glucose intolerance caused by pregnancy or birth control pills.

Garlic: Decreases and stabilizes blood sugar. Aged garlic is suggested to be used as instructed on the label.

Essential Fatty Acids (mercury free): Ensures proper insulin function and supports nerve health.

CoEnzyme Q10: Antioxidant essential for cell metabolism and present in every cell of the body. 150-250 mg per day.

Magnesium (750 mg daily): Diabetics are often low – important to avoiding complications with retinopathy and heart problems. Avoid if suffering from kidney disease.

Manganese: (10 mg daily) Mineral needed for pancreas repair and proper glucose metabolism.

Zinc: (50 mg daily) Mineral necessary for normal insulin production.

MG Beta Glucan: Supplement that nutritionally and naturally promotes insulin production in the pancreas through cytokine enhancement. 10-20 mg daily suggested.

Control your weight by proper diet and moderate exercise under your health care provider direction and review.

Diabetes is epidemic, but there is hope by taking charge of your health now!

This statement has not been evaluated by the Food and Drug Administration. No products are not intended to diagnose, treat, cure or prevent any disease.