

# Well-Beings



## **DIABETES MELLITUS: AN EPIDEMIC OF NUTRITIONAL STARVATION**

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### **Abstract**

Diabetes mellitus, the most common non-communicable disease in the U.S. is reaching epidemic proportions. A significant factor of this disease is the lag time between probable on-set and diagnosis (average of four years). Another challenge has been the limited focus of the medical community on creating drugs to replace insulin. These drugs have not adequately addressed the many complicated issues of the diabetic. In 1997 the U.S. population statistics estimated that 15.7 million people had diabetes and that 5.4 million were undiagnosed. Clearly, the sole reliance in supplying defective insulin has not been sufficient. Diabetes is a syndrome involving multiple endocrine glands and organ systems in large part due to a deficiency of whole food nutrients and a surfeit of processed foods and toxic chemicals. The prevalence of this disease should initiate the opening of new channels of research and the creation of a broader range of programs founded on adequate nutrition intake.

### **Introduction**

Diabetes is a chronic metabolic and digestive disorder involving not only the digestion and metabolism of carbohydrates but also of fats and proteins. Diabetes is characterized by elevations in blood glucose due to insufficient insulin production and/or a lack of reactive or functional insulin. There are two broad types of diabetes:

- Type 1: (IDDM) the autoimmune destruction of the pancreatic beta cells with total loss of insulin secretion. This type accounts for about 8% of the population with diabetes.
- Type 2: (NIDDM) a progressive chronic illness usually present for 4 to 7 years before diagnosis. The symptoms are less acute than Type 1. This disease is known

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as NIDDM (non-insulin dependent diabetes mellitus). Most of this article will discuss Type 2, but much information can be applied to Type 1.

NIDDM is uncommon in areas where individuals consume a more natural, less processed diet. There is little doubt that commercialized foods are a leading cause of not only NIDDM but also obesity, a concomitant factor as ninety percent of NIDDM types are also obese. Individuals with diabetes are at risk of developing severe complications and other chronic illnesses. (1)

### **Prevalence of Diabetes Complications**

Micro-vascular damage Macro-Vascular damage

- retinopathy 49% – cardiovascular disease 43%
- neuropathy 40%
- nephropathy 35%

Other conditions associated with diabetes:

- Obesity
- Metabolic Syndrome
- Depression
- Fatigue
- Gastric dysmobility
- Compromised digestion

Abnormal lipid metabolism

- Ketoacidoses
- Reduced immunity
- Irritability
- Generalized toxicity
- Cerebral vascular disease
- Gangrene

Diabetes is a syndrome involving multiple systems, multiple endocrine glands, and the exocrine functions of the pancreas. Insulin replacement alone and limited dietary counseling are insufficient to meet the complicated needs of the diabetic. Prevention and intervention are key factors in "at risk" populations. (2) The primary focus has been on creating insulin replacement, and little attention has been given to the underlying issues and imbalances in other endocrine glands. (3)

### **Major Factors in Diabetes**

- genetic predisposition
- environmental and dietary factors

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- other lifestyle factors
- possible infections or chemical injury leading to IDDM
- imbalances in other endocrine glands

### **Diet and Diabetes**

NIDDM is primarily the result of consuming copious amounts of synthetic toxic chemicals and highly processed foods while abstaining from adequate fresh plant based foods with their nutrient content intact. Processing removes vital nutrients necessary to sustain health. Toxic chemicals in processed foods add to the already over-burdened endocrine glands. The sweetener aspartame has attracted attention as a hazard for the diabetic as well as the obese. Research has shown it to be a neurotoxin and a possible catalyst for poly chemical hypersensitivity syndrome (PCS). Aspartame seems to suppress the production of serotonin, while accelerating cravings for carbohydrates (4,5). Another chemical believed to be harmful for the diabetic is high fructose corn syrup (HFCS). As early as 1930, it was suspected to cause diabetes in humans as it did in a variety of test animals. Dr. Harvey A. Wiley, the first director of the Food and Drug Administration (FDA) in the U.S., tried unsuccessfully to have it banned from foods or failing that, properly labeled as an artificial, exogenous glucose that over-stimulates the pancreas. (6) It is again being linked to diabetes in the medical research. The average American consumes as much as 170 pounds of sugar per year. HFCS is ubiquitous in processed foods, in everything from bread to baby food. Several studies have shown a positive correlation between the consumption of refined carbohydrates (HFCS) and the prevalence of type 2 diabetes, while frequently showing a negative association with dietary fiber. (7,8,9) Dr. Bray, in his paper on the epidemic of obesity and changes in food intake, believes the consumption of corn syrup to be the most significant factor in the epidemic of NIDDM. (10) Peter Jennings of ABC News aired on *Prime Time Live* on December 8, 2003 condemning HFCS and linking it to obesity. Since the 1970s the reported use of HFCS or dextrose has increased by four thousand percent.

### **Bleached "Enriched" Flour Lacks Whole Vitamin Complexes**

Major food problems for the diabetic, as well as others with chronic illness, are the bleaching of flour, the removal of the bran and germ, and the addition of isolate or synthetic vitamin fragments. The major groups of nutrients affected are whole vitamin B, E, and essential fatty acids. The problems with "fortified" white flour are the removal of essential nutrients, the addition of synthetic or isolated vitamin fragments, and in the bleaching process itself. Dr. Agnes Morgan, as early as 1941, reported that fortified bleached flour was significantly more toxic to dogs than bleached flour without the added fortification of synthetic vitamin B. (11)

Many early researchers believed that vitamins occur in plants in complexes of many cofactors needed to render the vitamin viable and functional. (12,13) This concept may explain the discrepancies in results in research findings between studies using food sources and those using supplements. (14) So few whole food vitamin supplements exist that many are unaware of them. The harmful effects of synthetic vitamins are currently

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being reported in the literature. Dr. L. Mosca stated that women whose vitamin E source was dietary displayed significant reductions in LDL oxidation. However, women who took vitamin E via supplements actually increased their oxidation levels. The more they took, the worse their LDL oxidation. (15) Vitamin E is not the only anti-oxidant vitamin being scrutinized. Victor Herbert and colleagues have found that ascorbic acid, misnamed vitamin C, actually acts as a pro-oxidant on the genetic adenine bases at a dose of 500 milligrams daily. (16) Current research also supports the early finding that b-carotene, ascorbic acid and tocopherol are not complete vitamins because vitamins occur in complexes of many molecules that work in synergy. (17, 18) While synthetic or isolate vitamins added to processed foods have been reported as far back as the early 1930s to be detrimental to health, this is not the only problem with fortified processed foods. Another harmful factor of white processed flour is the bleaching process itself. Bleach acts on xanthine, a component of the vitamin E complex found in living tissue, to produce alloxan. This chemical is used in research to cause diabetes in test animals by destroying the beta cells in the pancreas. (14) This finding from early research is substantiated by a more recent study where both chloride and fluoride produced a diabetes-like syndrome (hyperglycemia, glycosuria) in rats mediated by a significant hyperglucagonemia and slight hypoinsulinemia. (19) The bleaching process in combination with lack of nutrients seemed to render this produce unsafe for the diabetic. The removal of the whole vitamin B complex seems to be the critical factor for the diabetic. (20,21)

Whole complex vitamin B is vital for:

- fat and carbohydrate metabolism
- nerve health
- release of energy

Both old and current research also proclaims whole vitamin B to be beneficial, particularly biotin, niacin and inositol. (22,23)

### **Vitamin C**

Insulin facilitates the transport of vitamin C as well as glucose and amino acids into the cells. Diabetics often lack sufficient vitamin C at the cellular level. The lack of whole food vitamin C is one of the reasons for diabetic complications.

Whole food vitamin C:

- Promotes wound healing
- Assists in the metabolism of cholesterol
- Decreases capillary permeability
- Promotes healthy immune system, increases phagocytic activity
- Acts as an antioxidant for free radical activity
- Promotes blood sugar control
- Reduces the accumulation of sorbitol within cells
- Inhibits the glycosylation of proteins

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Sorbitol accumulation in combination with the glycosylation of proteins leads to many problems including nerve and eye diseases. The drugs that are designed to inhibit sorbitol accumulation are extremely toxic. Whole food vitamin C is a much better alternative (again, not ascorbic acid). Sorbitol accumulation is the result of faulty glucose metabolism. Sorbitol is normally converted to fructose, in the non-diabetic and is easily excreted from the cell. In the diabetic, sorbitol accumulates and becomes a toxin disturbing the cellular osmotic balance in the cell. (24)

In glycosylation, glucose binds to proteins such as albumin in blood, the eye lens, and the myelin sheath of nerves. Vitamin C has been shown to reduce glycosylation of proteins. This pathological process causes much of the damage in the complications of diabetes. (25) No vitamin or mineral works in isolation. Vitamin C is dependent on other vitamins, minerals and phytochemicals to function which in turn are dependent on other nutrients. (1)

### **Fat Metabolism**

One of the most serious consequences of diabetes is high levels of blood and liver fat. Insulin is needed in the conversion of glucose to triglycerides and for glycogen formation in the liver and skeletal muscles. Many of the complications of diabetes and indeed diabetic coma are a result of high blood and liver fat. (14) In experimental animals, removal of the pancreas is not fatal if betaine, as well as insulin, is given. Insulin is needed in the metabolism of sugar and betaine is needed in the metabolism of fat. Whole vitamin B facilitates carbohydrate as well as fat metabolism. (3,14) Fat digestion and metabolism are very complicated processes involving many steps from healthy bile, available lecithin, hormonal factors and enzymes to available whole vitamin cofactors and minerals. A major concern for the diabetic is obtaining high quality fats and abstaining from highly processed oils, rancid fats, high levels of saturated fats and trans-fats. Every cell in the body depends upon high quality oils to function properly. Each cellular membrane is composed of phospholipids that give the cell its ability to transport substances in and out of its environment. Poor quality fats greatly reduce this ability and lead to disease and debilitation. High quality oils are also needed in nerve health, hormone production, and the metabolism of many vital nutrients. (26,27)

### **Vitamin B**

The vitamin B complex is vital for both the metabolism of fat as well as carbohydrate. Early research indicated that NIDDM was primarily a disease of avitaminosis B. Whole vitamin B is also used in nerve function. Dr. R. Lee stated that many cases of diabetes could result from either over or under stimulation of the pancreas by the autonomic nervous system often caused by lack of vitamin B. (3,28)

He stated: "The first account of the successful treatment of hyperglycemia with vitamin B concentrates was mentioned in these pages. Vitamin B caused a slow but definite improvement in a majority of the cases treated. At that time attention was called to the fact that diabetes, with attendant hypertension, also required vitamin C concentrate to get

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the best response according to clinical findings." (3) (His vitamin concentrates were made from whole foods.)

Whole vitamin B deficiency can result in either under or over-stimulation of nerve function to the endocrine glands and to other organs (specifically the heart). This is one of the major complications of diabetes. Also, whole vitamin deficiency probably causes endocrine imbalance.

## **Endocrine Factors that Affect Blood Sugar**

### **Adrenal Glands**

The effects of the adrenal glands are probably the most overlooked factors in the total picture of diabetes. They have an antagonistic effect on the pancreas, an increase in adrenalin increases the sugar index of the diabetic by decreasing insulin. Overall health is a direct result of balances in endocrine function. Imbalances occur because of poor nutrition and whole vitamin and mineral starvation. The adrenal is part of the sympathetic nervous system – a key factor in the disease of diabetes as well as the cardiovascular system. (3,29)

In one study that examined the effects of alloxan induced diabetes in rats showed a slight but significant increase in blood pressure, pituitary and adrenal hyperplasia, hyperlipidemia, hyperglycemia and increased BUN levels. Researchers concluded that the genetically programmed problems of diabetes, hypertension, and the pathophysiology of obesity may be due to hyperadrenocorticism. This study, among others, verifies the close relationship between the adrenal and the pancreas. (30)

Adrenaline releases glycogen from the liver. Normal glucose homeostasis is tightly regulated by three interrelated processes:

- Insulin secretion
- Utilization of glucose by peripheral tissues
- Glycogen production in the liver

Diabetes is a broad endocrine dysfunction—it is not merely a pancreatic beta cell dysfunction. This was recognized at least as early as 1911 by O. Minowski of Russia. (29)

### **Parathyroid gland**

Blood sugar levels increase 8-fold after parathyroidectomy. The parathyroid controls calcium metabolism. (Lack of utilizable calcium can cause acidosis, a major factor in diabetes.) Even a minor weakness in this gland affects the pancreas as well as other endocrines. It is known that calcitonin is an important regulator of insulin secretion. In a more recent study the researcher suggests that calcitonin may play a role in both the pathogenesis of diabetes and in developing diabetic osteopenia. (31)

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## **Secretin – duodenal hormone**

Secretin, a hormone from the duodenum which activates the pancreas, has been shown to be low in diabetics. Secretin was the original hormone or the “mama” hormone first observed in 1902 by W.M. Bayless and E.H. Starling of London. They called it the “pancreatic hormone” because of the remarkable effects on the pancreas.

Secretin is needed to:

- Stimulate bile flow and hormone production
- Stimulate enzyme production from the pancreas
- Decrease blood glucose

The secretin – pancreatic relationship has long been overlooked by established medicine. Dr. Harrower, a well-known endocrinologist in the 1930's had this to say: "I feel that one of the shortcomings in our consideration of diabetes mellitus concerns the pancreatic acinous function and the duodena-pancreatic relationship. ... The makings of secretin are deficient, hence the difficulty in completing the cycle of secretin production and pancreatic activation. ... All of this should stress more definitely the digestive phases of diabetes." (29)

The exocrine pancreatic component manufactures, stores, and packages digestive enzymes for digestion of food. The endocrine secretes hormones that regulate the metabolism and utilization of the absorbed nutrient components. Both functions are closely related, both anatomically and functionally. It has been shown that the endocrine part exerts a profound effect upon the exocrine functions of the pancreas. (32)

## **Pituitary gland**

The permeability of the intestinal wall is regulated by the posterior pituitary hormone. This hormone prevents constipation and promotes the deposition of fat in the liver to be burned. The pituitary (both anterior and posterior) secretes hormones that can cause hyperglycemia. Since the pancreas is intact in some cases of severe diabetes, the pituitary may play a major role in these diabetic individuals. (14)

## **Herbs and Diabetes**

Research substantiates the belief that diabetic drugs can be very toxic. The risks associated with drug treatment are generally class-specific. Among anti-diabetic agents, sulfonlureas and insulin are associated with risk for severe hypoglycemia, metformin for lactic acidosis, and troglitazone for idiosyncratic hepatocellular injury. (33)

Herbs are a much safer alternative. They not only lower blood sugar, most have no known side effects. Several herbs have been effective for the diabetic. One of the most promising is *Gymnema sylvestre*. It seems to lower blood glucose, increase insulin levels,

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lower serum lipid levels to near normal, regenerate the beta cells of the pancreas and suppress sweet taste cravings! (34,35,36)

### **Summary**

NIDDM is a broad based endocrine dysfunction due in large part to lifestyle factors. The digestive phases of the pancreas as well as imbalances in other endocrines would be fertile ground for further research. Also, the failure of activation of digestive enzymes via secretin is an important aspect of diabetes that could partially account for poor digestion, metabolism, and assimilation of fats and carbohydrates. Attention has focused on drugs to replace insulin function with the resulting failure to acknowledge and integrate a more comprehensive approach to this disease. For many years, research has been suggesting diabetes mellitus to be a disease of whole food nutrition starvation resulting from consuming a diet low in functional vitamins and high in processed foods. The manufacture and use of concentrated whole food vitamins would benefit diabetics. The further investigation of herbal remedies would also be of value. Because diabetes involves a variety of organ systems and environmental factors, a broad based individual program would be appropriate.

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### **About Dr. Sharon Rabb**

Since the 1970's, Dr. Rabb has devoted her time to the study of both traditional and holistic medicine. Her extensive studies and knowledge of allopathic (traditional) medicine and the powerful healing properties provided through nature enable her to

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integrate a broad spectrum of modalities that merge scientific knowledge with natural healing. She specializes in chronic illness and degenerative diseases in both adults and children.

Dr. Rabb is also a public health nutritionist and educator certified in the State of Texas. Health education is one of the foundations of her program. She also uses a variety of modalities including CRA (Contact Reflex Analysis) to facilitate individuals in achieving optimal balance and health. Nurturing and gentle approaches are integrated with the latest in scientific research to provide a professional and caring environment. As a gifted public speaker, she has become increasingly popular among both lay and professional audiences.

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