

Reducing the Risk of Complication from Diabetes

Non-Traditional Treatment

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The diabetic condition is not simply a matter of one or two things having gone wrong. It is a multitude of metabolic imbalances. Consequently, the conventional medical approach of simply using insulin or oral drugs is irrational and incomplete. What is needed is a broad-based therapeutic regimen that incorporates an appropriate diet, prescribed exercise and, most importantly, substantial amounts of specific nutritional supplements.

Only 10% of diabetics actually have reduced production of insulin. They are called insulin-dependent (type I) diabetics, and likely will always need insulin replacement. However, 90% of diabetics have non insulin-dependent (type II) diabetes. Rather than an insulin deficiency, these patients produce two to three times the normal level, but the insulin simply doesn't work—a condition called insulin resistance. We know that excess insulin brought on by insulin resistance is not only associated with elevated blood sugar levels, but also with high blood pressure and increased rates of atherosclerosis.

Insulin therapy most often, is not the best way to treat insulin resistance. Yet, physicians use insulin to treat patients with insulin resistance, which only worsens the problem. It's a nutritional wasting disease, so supplementation is essential.

Supplementation is of paramount importance in the diabetic condition, because diabetes is first and foremost characterized by excessive urination. In fact, the Greek root word for diabetes means "passing through". The excessive urination brought on by elevated blood sugar levels strips your body of all water-soluble vitamins and minerals. Normally, glucose (blood sugar) and other water-soluble nutrients are reabsorbed by the body. When glucose rises to levels above 160 to 170 [8.89 to 9.44 mmol/litre], as it does quite frequently in even well-controlled diabetic patients, it acts as an osmotic diuretic, overwhelming the system, causing substantial, even massive, losses of water-soluble nutrients that pass out along with the urine. Consequently, diabetes and its complications are as much a result of nutritional wasting as of elevated blood sugar.

Think of it like this. If you gave a person a drug that acted as an osmotic diuretic and caused the same kind of nutrient losses, you would see the same complications that diabetics suffer: nerve degeneration, blood vessel deterioration leading to blindness and amputations, frequent heart attacks, and destruction of the kidneys,

Dietary Supplements

The biggest oversight of the current medical approach to diabetes is its failure to recognize that diabetes is a nutritional wasting disease. The elevated blood sugar level acts as an osmotic diuretic by overwhelming the kidneys' ability to reabsorb glucose and other water-soluble nutrients.

This is why diabetics experience increased urination. Consequently, diabetes causes massive losses of nutrients such as vitamins B-1, B-6 and B-12, and the minerals magnesium, zinc and chromium.

Incredibly, because modern endocrinologists don't even see this most basic component of diabetes, no efforts are made to replace the large amounts of nutrients that are constantly being drained out of diabetics. This loss of nutrients obviously contributes to, and could be the primary reason for, the deterioration of the eyes, kidneys,

peripheral nerves, and vessels of diabetics. These same complications would result from any condition that caused such nutrient depletion. In 1978, Dr McNair published a study in an article, "Hypomagnesemis, A Risk Factor in Diabetic Retinopathy". This study demonstrated that diabetics have depressed levels of intracellular magnesium, and the lower the magnesium level, the higher their risk of diabetic retinopathy. The article argued that simply elevating the magnesium concentration with supplements would protect the eyes.

The cellular concentration of magnesium has been found to be dangerously low in diabetics, primarily because excessive urination washes magnesium out of the body. A low magnesium level is an independent and verifiable risk factor for both premature heart attack and diabetic retinopathy, which is a major cause of blindness in this country [Note: Diabetic Retinopathy is the major cause of blindness in the United Kingdom as well].

Supplementing your diet with magnesium is safe, inexpensive, and addresses one of the basic problems of diabetes. Yet today they are not given any nutritional supplements, not even magnesium. In my opinion, this is not just malpractice-it's tragic. I find it strange that these same physicians who worry about the "potential toxicity" of nutritional supplements and/or lack of sufficient scientific documentation for water-soluble nutrients have no qualms prescribing oral diabetic drugs, even though the Physician Desk Reference clearly states that the most common drug used for diabetes, an oral hypoglycemic agent, is associated with a 250% increase in cardiac death.

Since the diabetic patient wastes so much of the essential trace minerals and elements, they should be replaced by supplementing the diet. It is foolish for the diabetic patient to 'trust' that even a well balanced diet will provide adequate amounts of these minerals. The most important elements and their daily dosages are magnesium (1.000 mg), chromium picolinate (400-800 mcg), which is a trace mineral that facilitates the action of insulin glucose protein and fat metabolism. Chromium picolinate enhances the body's sensitivity to insulin and reduces complications from diabetes by lowering blood glucose levels. Zinc(30 mg) and selenium (200 mcg.). Gamma linolenic acid (also known as GLA 400-600 mg), from the essential fat linoleic acid, is integral to many functions in the body, and diabetics are almost always low in the essential fatty acids, but even on an ideal diet, diabetics have problems converting dietary fats to GLA. A study in England looked at the effects of 480 mg of GLA, taken daily for one year, on 111 diabetics. Improvements in several parameters were noted across the board, especially in peripheral neuropathy suggest that diabetics include in their regimen of GLA. The best sources are borage, evening primrose oil, and black currant

More recently, human studies have shown that daily doses of 100 to 150 mg of vanadyl sulfate effectively reversed the diabetic condition, and when the vanadyl sulfate was stopped, the diabetic condition did not return. I strongly recommend you do this under the care of your physician, who will monitor its effects. I do not suggest you do this on your own.

The diabetic should be taking therapeutic doses of vitamins starting with the anti-oxidant nutrients: vitamin C (2,000 mg), vitamin E (400 iu), and beta-carotene (15,000 iu). The B-complex nutrients are particularly important for the diabetic as they are essential for both carbohydrate and fat metabolism, which are markedly deranged by diabetes. They all should be supplemented, but vitamins B-6 (100 mg) and B-12 (40 mcg) are particularly important. Biotin is a B vitamin that works synergistically and independently in lowering blood sugar. In a 1985 study, insulin-dependent diabetics were taken off insulin for one week, and half were given 16 mg biotin a day while the other half received a placebo. As expected, blood sugar levels rose in the placebo group, yet they fell in the patients on biotin. The recommended dose is 10-14 mg a day.

Lipoic acid (100-200 mg). is also very helpful in diabetes as well as other conditions. I would love to make a general recommendation for everyone to start taking lipoic acid, as it would be a reasonable and healthy thing to do. However, until we learn more about its use, I recommend supplemental lipoic acid only for people who are under treatment for diabetes, heart disease. AIDS, and, specifically, any form of serious liver disorder. In these cases I strongly recommend that you take 50-200 mg of lipoic acid per day. Diabetics taking lipoic acid should be monitored by their doctors, because lipoic acid will lower the blood sugar level and medications will likely need to be reduced

Herbal Extract

An extract of the leaves of the climbing plant *Gymnema sylvestre*, native to the forests of central and south India, have been used since the sixth century B.C. It lowers blood sugar, and may help repair damage to cells in the pancreas.

Animal studies done in 1990 on diabetic rats indicated that fasting blood glucose levels returned to normal after 20-60 days of treatment, and there was a rise toward normal in serum insulin. Autopsies on the rats showed that the islet and beta cells of the pancreas, which produce insulin, had doubled in number, compared to those of the controls. This is mind-boggling I was taught in medical school that destruction of beta cells was irreversible.

Human studies showed similar results-5 of 22 patients taking 400 mg per day for 18-20 months as a supplement of oral drugs could discontinue their drugs, and the rest reduced their doses. There was a significant reduction in blood glucose and other parameters of insulin efficacy (glycosolated hemoglobin and glycosolated plasma protein). Researchers concluded, “the beta cells may be regenerated in type II diabetic patients on GS4 (*Gymnema sylvestre*) supplementation.”

I recommend that anyone with diabetes try *Gymnema sylvestre* [“Standardized *Gymnema* Extract” available from Vitacost] at doses of 400 mg daily. If you are at high risk for developing diabetes, I recommend a maintenance dose of 200 mg daily. Here’s an aside for those of you with a sweet tooth -rumor has it that it cuts down cravings for sweets.

Exercise

A powerful tool for all diabetics, particularly non insulin-dependent diabetics, is exercise. The diabetic patient should have a prescription for exercise just as he has a prescription for any other medication. When you exercise your skeletal muscles, they are able to take sugar up without the help of insulin. Diabetics often report that their high blood sugar level drops-sometimes dramatically-as a result of a brisk walk. Exercise not only lowers your blood sugar level at the time you’re active; it also increases your body’s overall sensitivity to insulin. However, I must caution that diabetics with blood sugar levels over 300 [16 mm/litre in UK]should not exercise. Several studies have shown that exercise helps to thin the blood, which may prevent some of the diabetic complications, particularly diabetic retinopathy, the most common cause of blindness in this country.

The best forms of exercise are brisk walking slow jogging, bicycling, or swimming. It should be regular, at least four times a week, for at least a half hour at a time. There is some evidence that a brisk 10 minute walk after a meal is beneficial in preventing elevation in the blood sugar that is so common for diabetics after eating. However, diabetics who also have heart disease should not do this after-meal regime.

Diet

Keep your blood sugar normal by maintaining your optimal weight, exercising regularly, eating a low-fat, moderate protein diet with lots of fruits and vegetables and few refined grains and sugars. The diabetic should replace fat calories with complex carbohydrate calories because fat tends to block the effect of insulin, while carbohydrates enhance it. However, the diabetic should avoid simple carbohydrates like sugar and honey.

You cannot reduce your fat intake and increase your carbohydrate intake without increasing your consumption of vegetables. For the diabetic, the most beneficial foods appear to be beans, legumes, and grains, particularly oats and oat bran, and generous portions of vegetables. Fruits should be used, but more sparingly because they are high in fruit sugars.

In 1976, Dr. James Anderson from the University of Kentucky (USA) demonstrated that the high-carbohydrate, high-fiber diet could eliminate the need for insulin and the oral drug in close to 70% of diabetic patients.

Diabetic Peripheral Neuropathy

There is no effective conventional treatment for diabetic peripheral neuropathy. It is generally assumed to be prevented by good control of blood glucose levels, but it frequently occurs in patients who well maintain their

glucose levels.

There is some good news from Great Britain. Nutritional supplements of gamma linolenic acid, an essential fat, effectively slows down, stops, and even reverses the progression of diabetic peripheral neuropathy. Without questions it is the best treatment available for this condition. Gamma linolenic acid (GLA) commonly found in seed oils such as corn oil and sesame oil. However, in order for the body to use the linoleic acid, it must convert it into GLA by adding an additional double bond between two carbon atoms. In diabetics, the enzyme systems necessary for this conversion are lost or hampered. Consequently, the body can't convert linoleic acid into GLA, the active component. However, as in so many other incidences, plants have come to the rescue, converting linoleic acid into GLA.

As previously noted, In a British study, 111 patients with diabetic neuropathy were given either a placebo or 480 mg of GLA daily. Sixteen measurements were made throughout the study, and at the end of a year, the group taking the GLA improved in all 16 measurements. The researchers concluded that "administration of GLA to patients with mild diabetic poly-neuropathy may prevent deterioration, and, in some cases, reverse the condition." I suggest that all diabetics start GLA supplementation at about 400-600 mg a day.

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