

The third of a multi-part series on adult-onset (type II) diabetes, the disease of the new millennium that is quickly reaching epidemic proportions throughout the developed world.

## TYPE II DIABETES:

# The Epidemic of the New Millennium

## PART III: Lifestyle and Nutrition are Key

The prognosis is stark: eighty percent of patients with diabetes will die of cardiovascular disease. Despite the wonders of modern medicine and the cornucopia of pharmaceutical drugs, the traditional management of type II diabetes has been unable to alter this grim reality.

In Canada, today, diabetes accounts for 28 percent of all new cases of kidney disease and is a primary cause of adult blindness and non-trauma-related limb amputation. The alarming rise of type II diabetes among children and adolescents has prompted the American Diabetes Association to declare type II diabetes in children an emerging epidemic.

That is why many within the medical community are adding their voices to a growing chorus of concern, claiming that we are going about the treatment of this disease the wrong way: focusing on the symptom, rather than the cause.

A recent review article, published by the prestigious Mayo Clinic, confirms that the traditional treatment of adult-onset diabetes has focused primarily on normalizing blood sugar levels, rather than tackling the causative factors. It is estimated that 50 percent of all pharmaceutical prescriptions written today are, in fact, related to the treatment of a constellation of metabolic changes, known as Insulin Resistance Syndrome that precedes full-blown diabetes.

Dr. Ray Strand, a practising physician, author of the popular medical guide *Bionutrition*, and a strong advocate of nutritional intervention, argues that many pharmaceutical remedies used to control type II diabetes can actually increase blood insulin levels, which, in turn, increase the risk of cardiovascular disease in the diabetic patient. Says Strand, "It really comes down to a common thread and that is we're treating the wrong thing ... focusing on treating blood sugar levels instead of insulin resistance, which is really the underlying problem."

Controlling insulin resistance - not the high blood sugar levels caused by it - is the key to disease management. However, tackling the causative factors for insulin resistance involves changes to both diet and lifestyle and stresses the need for a more natural and holistic model of disease management.

## The Case for Nutritional Intervention

What most people don't realize is that a proper balance of micronutrients is a critical part of reducing insulin resistance, which, if left unchecked, will erupt into full-blown adult-onset diabetes.

Ninety percent of type II diabetics are found to be deficient in magnesium. The correlation between magnesium deficiency and the onset of type II diabetes has been known since 1976, yet few physicians prescribe supplementation with this inexpensive mineral to their diabetic patients. In fact, magnesium deficiency is one of the most under-diagnosed electrolyte deficiencies in modern medicine. Daily supplementation in the range of 400 milligrams has been shown to significantly improve insulin sensitivity.

Individuals predisposed to adult-onset diabetes have also been shown to demonstrate deficiencies in several other important micronutrients, including: chromium, vanadium, zinc, and a host of important antioxidant complexes. As well, they often exhibit a deficiency in dietary protein and a general imbalance in their protein-to-carbohydrate ratio. This is likely due to dietary patterns that favour excessive intake of dietary fats and high-glycemic foods that break down quickly into simple sugars, causing a rapid spike in blood sugar levels.

Other nutritional factors that have been found to be effective in mitigating symptoms of adult-onset diabetes and its precursor, insulin resistance, include: vitamin E (alpha-tocopherol), vitamin C (ascorbate), vitamin K (phylloquinone), beta-carotene (pro-vitamin A), alpha-lipoic acid, flaxseed oil (omega fatty acids), vitamin B3 (niacin and niacinamide), vitamin B6 (pyridoxine), vitamin B12 (cobalamin), biotin, manganese, copper, vanadium and zinc. Chromium, in its most bioavailable form as chromium picolinate, is a particularly potent insulin sensitizer and a key component in the body's ability to tolerate and regulate blood

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sugars. Interestingly, 90 percent of the U.S. population does not consume even the minimum recommended daily dose of this important mineral.

All of these micronutrients are easily available and affordable through the daily use of a high quality, broad-spectrum nutritional supplement. I stress the phrase "high quality": only a superior quality, pharmaceutically pure nutritional supplement will provide these ingredients in a balanced formulation, where each ingredient is provided in its most bioavailable form and in a dosage necessary for long-term optimal health. Supplementation is an effective way to ensure that the body has a complete supply of the micronutrient factors it needs to prevail against the onset of insulin resistance and the consequent development of type II diabetes.

Prevention of the disease — before the damage is done — is first and foremost. Unfortunately, by the time most diabetic patients are diagnosed with the disease, it is already too late. We now know that much of the initial damage from high blood sugar levels occurs through the oxidation of fats to form toxic lipid peroxides. Numerous recent studies show that vitamin E, a fat-soluble antioxidant, provides significant protection against this damage, caused by uncontrolled lipid peroxidation. Clinical trials show that supplementation with vitamin E, alone, causes a marked improvement of insulin action and a reduction in blood sugar levels and oxidative stress. Reduction of blood sugars and prevention of lipid peroxidation provide added protection against the onset of heart disease, common in the diabetic patient.

Insulin resistance, the pre-clinical stage of type II diabetes, responds particularly well to weight loss and dietary change. Fats and sugars are powerful free radical protagonists, so it's important to reduce these in the diet and in the body. The key is the combination of a low glycemic diet fortified with essential fatty acids, nutritional supplementation targeted to enhance insulin sensitivity and optimize antioxidant protection, and regular aerobic exercise to blow out the pipes. It's a sensible approach that works wonders as it sheds pounds.

## Herbal Supplements - A Natural Approach

While type II diabetes has become prevalent in our modern world, the disease has been with us throughout the ages. Prior to the advent of modern drug therapy, diabetes had been treated successfully with plant-based remedies indigenous to many native cultures. According to naturopathic physician Dr. Michael Murray, "the last 20 years of scientific investigation has, in fact, confirmed the efficacy of many herbal remedies, many of which are remarkably effective and have few or no side effects." Murray argues that the proper treatment of the diabetic patient requires the integration of diet and lifestyle changes, along with the use of nutritional and herbal therapies.

What are some of these natural remedies, used for thousands of years by Ayurvedic, Oriental and Native American healers? They include: onions, garlic, bitter melon, *Gymnema sylvestre*, fenugreek, salt bush, *Pterocarpus marsupium* and the extracts from bilberry, grape seed and *Ginkgo biloba*. Crude extracts from these plants have all been found to play important roles in reducing insulin resistance and normalizing blood sugar levels in the pre-diabetic and diabetic patient.

Recent clinical studies confirm that *Gymnema sylvestre*, long used by Ayurvedic healers in India, is effective in treating both type I (insulin-dependent) and type II (non-insulin-dependent) diabetes. Extracts from the plant improve blood sugar control, allowing patients to reduce and even discontinue their use of prescription drugs. Studies indicate that *Gymnema* extract actually stimulates the regeneration of hormone-producing beta cells within the pancreas. *Gymnema* extract is also without apparent side effects and, remarkably, exhibits its restorative effects only on those suffering from diabetes. No alterative effects have been observed in normal subjects.

*Pterocarpus marsupium*, another plant with a long history of use in Eastern cultures, also works to prevent and reverse damage to pancreatic beta cells in diabetic patients. Epicatechin flavonoid, extracted from the bark of the plant, appears to be the restorative agent, effecting a moderating influence on blood sugar levels.

Onions and garlic also exhibit blood sugar lowering action in the diabetic patient, while conferring cardiovascular benefits, including reduction of cholesterol and blood pressure. The sulfhydryl compounds, including allyl propyl disulphide, diallyl disulfide oxide and propanethiol S-oxide, which gives these herbs their pungent and eye-watering aroma, have been identified as the active principles.

Several clinical studies have shown that extracts from bitter melon (*Momordica charantia*), a green cucumber-shaped tropical fruit, is a powerful hypoglycaemic agent. The extract has been shown to be more effective than the prescription drug, tolbutamide, in lowering blood sugar levels, and has fewer side effects. One peer reviewed study showed that two ounces of charantia extract improved glucose tolerance in 73 percent of diabetic subjects.

The seeds of fenugreek (*Trigonella foenumgraecum*) and salt bush (*Atriplex halimus*) extract are both potent hypoglycaemic agents. Fenugreek apparently works through exerting control on the blood levels of insulin (glucose storing) and its metabolic soul-mate, glucagon, the glucose releasing hormone.

Bilberry (*Vaccinium myrtillus*), grape seed (*Vitis vinifera*) and *Gingko biloba* each work synergistically to regenerate vitamin C and inhibit microvascular haemorrhaging, common in diabetic retinopathy. The extracts of these plants are rich sources of the powerful bioflavonoid antioxidants. *Gingko*, used as a remedy in traditional Chinese medicine (TCM) for thousands of years, also reduces peripheral vascular damage and nerve dysfunction, common in the diabetic patient.

You may ask, "If all of these natural remedies are so safe and their side effects so uncommon, why has western medicine not employed them in the battle against diabetes and other degenerative diseases?" The fact is, medical science has become overwhelmingly dependent on the pharmacological approach to disease management. So enamoured are western medical practitioners with the allure of high-tech medicine that they lack interest in the more down-to-earth cures offered by Mother Nature. Throughout North America, in particular, medical schools do not embrace the use of herbal medicines in their curricula. Consequently, few medical practitioners are current in their knowledge of such age-old remedies.

Physicians, involved with their day-to-day practises, do not have time to review the scientific literature, and rely, instead, on the research and products developed by the pharmaceutical industry. Therein lies the rub: while 30 percent of modern conventional drugs are composed of isolates derived from plant sources, pharmaceutical companies have actively discouraged the research of the crude — and often more effective — plant extracts. Plants and their raw extracts are natural products and, hence, cannot be patented.

So, there it is — no patent, no profit. All you have to do is follow the money. Because of this, the international pharmaceutical cartel has actively worked against the use of natural herbal remedies in disease treatment — and we, as a society, are poorer for it.

## **DISCLAIMER**

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