



## MICRONUTRIENTS HELP IN MAINTENANCE OF BLOOD SUGAR

You may be surprised to learn that the fastest growing disease in the world today is diabetes. Every day approximately 5200 Americans are diagnosed with diabetes<sup>1</sup>, which results in hundreds of cases of leg amputations, blindness, and kidney failures. Worldwide, diabetes is one of the most common non-communicable diseases and is at the forefront of the public health challenges the world faces this century. In the last two decades, the number of people suffering from diabetes has skyrocketed and it is projected to increase from 171 million in 2000 to 438 million in 2030.

Type II diabetes has been considered by many as a disease affecting the older and overweight people; however, it is now more frequently diagnosed in children and young adults younger than 25 years of age as well as in individuals that are not overweight.

Type II diabetes is characterized by an inability of the cells to respond to insulin and absorb glucose, which results in abnormally high levels of glucose in the blood. This is often preceded by a variety of symptoms collectively called metabolic syndrome. It comprises a diversity of symptoms ranging from obesity, high blood sugar, high blood pressure, to high cholesterol. It is proven that diets high in fructose can lead to developing metabolic syndrome and there are no specific drugs or treatments. All processed food, cereals, soft drinks, salad dressings, ketchup, and even hot dogs are sweetened with lots of table sugar, fructose, or high fructose corn syrup.

Since diets high in fructose can trigger the development of symptoms similar to human metabolic syndrome in some types of mice, we studied how the intake of micronutrients in their diet affects this process and how they compare to a standard anti-diabetic drug – metformin<sup>2</sup>. Young mice previously fed a high fructose diet received either a specific micronutrient mixture (containing vitamin C, B vitamins, cinnamon extract, grape seed extract, and others) or metformin for 7 weeks.



We observed that the mice receiving the micronutrient mixture had a 4% decrease in the levels of a specific diabetes marker (fructosamine), while the group receiving metformin had its level increase by 15%. In addition, the mice in the metformin group had reduced insulin levels while the micronutrient supplemented group showed a restoration of insulin levels. Additionally, the micronutrient supplementation also reduced blood pressure and total cholesterol thus potentially decreasing cardiovascular risk, which is a major cause of death in diabetes patients.

We also conducted a pilot clinical trial using the micronutrient mixture in patients suffering from type II diabetes<sup>3</sup>. After 6 months of following the micronutrients program, the participants showed a decrease in blood sugar level by 23%. The supplements also helped in the reduction of glycosylated hemoglobin A1c (HbA1c) levels, by an average of 9.3%. HbA1c is an important parameter of long-term blood sugar management.

While countless pharmaceutical medicines are available to manage blood sugar levels, there are no options to cure diabetes. We have shown that with safe, effective, and affordable micronutrient supplementation, millions of diabetics can improve their blood sugar metabolism and reduce many risk factors for diabetes complications.

1. *Diabetes care*, Vol 27, No.5, 2004
2. *J. Cha, et al., Mol Med Rep*, 2011
3. *Cellular Health Comm*, Vol 1, No.1, 2001

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The ground-breaking nature of this research poses a threat to the multi-billion dollar pharmaceutical "business with disease". It is no surprise that over the years the drug lobby has attacked Dr. Rath and his research team in an attempt to silence this message. To no avail. During this battle, Dr. Rath has become an internationally renowned advocate for natural health. Says he: "Never in the history of medicine have researchers been so ferociously attacked for their discoveries. It reminds us that health is not given to us voluntarily, but we need to fight for it."

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