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THE BETTER HEALTH NEWS

LIFESTYLE CHANGES ARE BETTER THAN DRUGS FOR TYPE 2 DIABETES

SUGAR AND INSULIN

About 8% of the American population has Type 2 diabetes. Type 2 diabetes exists when the body becomes insensitive to insulin and thereby has an increasingly difficult time handling sugar. Research published in the *New England Journal of Medicine* (February 7, 2002;346:393-403) shows that lifestyle change outperforms both drugs and placebo for prevention of diabetes.

The researchers compared the drug Glucophage (which helps the body better respond to insulin) to weight-loss and exercise. The subjects of the study were 3200 non-diabetic men and women with an average age 51 and a tendency toward high blood sugar. The average body mass index (BMI) of the participants was 34 (a BMI over 30 is considered obese).

Two groups of subjects were given either Glucophage, or a placebo. A third group made changes in their lifestyle (including 2 ½ hours of physical activity each week) designed to get the subjects to lose 7% of their weight.

Over the next three years, the group that exercised and changed their diet had a 58% lower risk of developing Type 2 diabetes than people in the placebo group. Those given Glucophage only cut their diabetes risk by 31%.

Getting stress under control is also a useful strategy for Type 2 diabetes. According to research appearing in the January, 2002 issue of *Diabetes Care,* stress management can help to lower blood sugar levels in Type 2 diabetics. The HbA1c test measures the average blood sugar levels over a prolonged period of time. In one study, there were 108 subjects aged 30 or above with Type 2 diabetes. All subjects participated in a diabetes education program. The education program provided to one group included stress management. The control group did not receive stress management.

INSULIN INSENSITIVITY

Now that the holidays are over, it is a good time to reflect on the damage done by sugar and insulin. Insulin has a lot to do with weight gain and so many other common health problems. It is involved with high blood pressure, high cholesterol, high triglycerides, Type 2 diabetes, menstrual problems, heart disease, pain, inflammation, depression and even polycystic ovaries. With simple lifestyle changes and some good nutritional products you can lose weight and help improve a lot of other health problems.

Symptoms of insulin resistance include fatigue, weight gain, brain fog, carbohydrate craving, and periods of hypoglycemia after a high carbohydrate meal (often needing a nap after eating). Approximately 50% of your patients with high blood pressure are insulin insensitive. Approximately 30% of American adults are insulin insensitive and 25% have Syndrome X. The *Journal of the American Medical Association* states that if a patient has three or more of the following symptoms: waist measurement greater than 40" in men (35" in women), triglycerides greater than 150, HDL lower than 40, blood pressure greater than 135/85 or fasting glucose of 110 , Syndrome X is present.

Problems with sugar and insulin cause weight gain, along with a variety of other health problems. In general, people with insulin insensitivity will have a BMI greater than 30. They carry weight around their abdominal area and crave sugar and starch. Getting insulin production under control is the key to weight loss—and there are some products that will help you to do this.

Dietary changes are, of course necessary. You need to follow a low glycemic diet—avoiding high glycemic foods like refined carbohydrates. You should eat three meals per day.

It is important to exercise regularly. It is also a good idea to stop snacking. The snacking issue is a tough one; many patients with insulin insensitivity are labeled as hypoglycemic. Some feel weak or shaky if meals are delayed or feel the need to snack every two hours (or have been told to do so). It is a good idea to wean from this by increasing the time between snacks. When you first eat, you produce insulin which helps to store the calories of the meal. As time goes on, you produce glucagon, which helps to burn the stored calories. The first three hours after eating, insulin is dominant; after three hours glucagon becomes dominant. You cannot lose weight if you keep producing insulin and snacking makes you produce insulin. It is especially important not to eat between dinner and bedtime.The dietary changes are difficult, but necessary. Fortunately there are products that help to bring insulin under control and to help with cravings.

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- ***A multivitamin*** (designed for glycemic control): Many of the companies who sell to chiropractors sell a product that has a lot of chromium, B vitamins, magnesium and other nutrients to help the patient will glycemic control.
- ***Fish oil:*** One of the many good things that fish oil does is to help with glycemic control; it also helps to lower cholesterol.
- ***Phosphatidyl choline*** Works like a fat detergent; it also helps with adrenal issues. Many of your patients needing to lose weight have high cortisol production. Interesting side note—this is good for exercise-induced asthma (as is fish oil).
- ***Phosphorus:*** Insulin insensitivity is an acidic condition; phosphates help to buffer. Phosphorus also helps with bone loss (a lot of osteoporotic women love their carbs). Sugar upsets the balance between calcium and phosphorus.
- ***Magnesium:*** Magnesium is also nature's muscle relaxer, so give it to patients with tight muscles. A woman who is magnesium deficient often will have tender breasts and mood swings related to her cycle. Magnesium causes the stools to soften, so if the patient gets diarrhea, lower the dosage.

THE LIVER AND L-CARNITINE

Carnitine exists in two stereoisomers. L-carnitine is the biologically active form. Its enantiomer, D-carnitine, is biologically inactive. It is biosynthesized from the amino acids lysine and methionine. In living cells, it is required for the transport of fatty acids from the cytosol into the mitochondria during the breakdown of fats for the generation of metabolic energy.

In research that appeared in *Diabetology & Metabolic Syndrome* (2011 Nov 15; 3:31), the therapeutic effect of L-carnitine on nonalcoholic fatty liver disease was recognized in streptozotocin -induced Type 2 diabetic mice. The mice were divided into five groups. One group acted as the control. Another group had Type 2 diabetes induced, without treatment. One group was pre-treated with 125 mg/kg of L-carnitine prior to streptozotocin exposure. Two of the groups were treated with either 125 mg/kg of L-carnitine or 250 mg/kg of L-carnitine. The researchers determined that supplementation with L-carnitine increased levels of Acetyl L-carnitine and L-carnitine in the liver. They also found that L-carnitine supplementation benefits fatty liver in Type 2 diabetes by increasing fatty acid oxidation and protecting mitochondrial function in the liver.

Research appearing in the *World Journal of Gastroenterology* (2011 Oct 21; 17 (39): 4414-20) looked at L-carnitine supplementation for hepatitis C. The 69 subjects were hepatitis C patients who were being treated with interferon A plus ribavirin. They were divided into two groups. For 12 months both groups received their drug therapy, but one group was also supplemented with L-carnitine. All patients underwent laboratory investigations including: red cell count, hemoglobin, white cell count, platelets, bilirubin, alanine aminotransferase (ALT), aspartate aminotransferase (AST). After a 12-month period, the group treated with L-carnitine had better AST (76.8 vs 108.8) and ALT (112.3 vs 137.9) values. There were also improvement in platelet, RBC and WBC counts, and in hemoglobin levels. The researchers concluded, " L-carnitine supplementations modulate erythropoiesis, leukopoiesis and thrombocytopoiesis, and may be useful in patients treated for HCV. L-carnitine treatment offers the possibility of achieving a sustained virological response while preventing overtreatment. "

L-Carnitine promotes energy production by enhancing fat oxidation in the cell mitochondria. Recommended for elevated blood fats, cardiac stress, liver degeneration (cirrhosis), low carbohydrate diets when the patient is unable to lose weight, muscle fatigue, senile dementia, reduced muscle mass, and low sperm motility. It enhances the anti-oxidant effects of vitamin C and E.

"Happiness: a good bank account, a good cook and a good digestion."

Jean Jacques Rousseau

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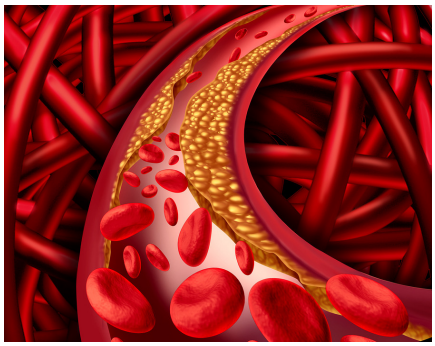
COQ10 AND HEALTHY ENDOTHELIUM

Cardiovascular disease is a major concern for anyone with insulin insensitivity, metabolic syndrome or diabetes. The key to cardiovascular health is the lining, or epithelium, of the arteries.



The endothelium is the thin layer of cells that lines the interior surface of blood vessels. It forms an interface between circulating blood in the lumen and the rest of the vessel wall. Endothelial cells line the entire circulatory system, from the heart to the smallest capillary. These cells reduce turbulence of the flow of blood, allowing the fluid to be pumped farther. Endothelial cells protect against atherosclerosis by helping to prevent blood clotting, because they contain heparan sulfate. Heparan sulfate acts as an anticoagulant.

The health of the endothelial cells is an important factor in preventing atherosclerosis. A meta-analysis that appeared in the journal Atherosclerosis (epublished ahead of print Oct 25, 2011) included MEDLINE, Cochrane Library, Scopus, and EMBASE to identify studies prior to and including July 1, 2011 that looked at randomized, controlled studies dealing with CoQ10 supplementation and endothelial function. The analysis found that CoQ10 supplementation significantly improved endothelial function.