

Diabetes: The Functional Medicine Approach

Diabetes (high blood sugar) is the most common non-communicable disease in the world. By 2010 there will be an estimated 221 million cases worldwide.

Type 2 Diabetes (adult onset) results from *poor lifestyle habits* and is almost always **PREVENTABLE** and **REVERSIBLE**.

Excess sugar damages the cells in your body through a process called *Glycation* which works exactly like oxidation (i.e. rust on metal) except the damaging molecule is sugar rather than oxygen. Through the media, most people are well aware of the importance of anti-oxidants which reduce oxidation damage but few are aware of the importance of preventing glycation damage.

Insulin is not meant to be the primary regulator of blood sugar. The liver and muscles are supposed to regulate any rise in blood sugar. But when excess sugar, carbohydrates, or calories are consumed, insulin is required to lower blood sugar.

High level of insulin is the greatest known link to cellular aging. Insulin also causes or contributes to Hypoglycemia, Heart disease, Osteoporosis, Congestive Heart Failure, High Cholesterol, Thyroid Disorders, Weight Gain, Fatigue, and many more undesirable health conditions. The use of insulin as a treatment for type 2 diabetes can usually be avoided and should be avoided if at all possible.

Although testing for type 2 diabetes involves measuring blood sugar levels, type 2 diabetes is NOT a disease of the blood. It is a disease of all of the cells in the body.

This is how it works.....

1st - You eat something with a high glycemic load (sugar, pasta, etc.) which causes a rise in blood sugar.

2nd - Your liver and muscles will store as much sugar as they can in the form of glycogen.

3rd - Any excess blood sugar needs to move into the cells of your body, but your cells will only tolerate so much sugar before they become resistant. Remember, too much sugar in the cell will cause glycation damage.

4th - Insulin is released to force any excess blood sugar into the cells, especially fat cells. This leads to glycation damage, accelerated aging of cells, and obesity.

5th - Your cells become resistant to insulin which causes your pancreas to release even more insulin which further increases aging. High insulin levels causes hypoglycemia (low blood sugar) which causes sugar cravings. The cycle continues!

6th - Eventually your cells become so resistant to insulin that sugar can no longer be removed from the blood (even in the presence of huge amounts of insulin). This is the point when diabetes "begins" clinically. But as you can see, the process leading up to diabetes and cellular damage occurs well before diabetes is testable. Fortunately, there are ways to test for the processes leading up to diabetes which can tell you how close you are to developing diabetes.

7th - High blood sugar causes poor circulation and damage to blood vessels and nerves which leads to vision loss, numbness in the hands and feet- eventually arms and legs, impotence, kidney failure, heart disease, poor brain function, amputation, and death.

What can be done?

- 1) **START NOW**. Get tested by Dr. Betz. This will tell you if you have diabetes or if you are pre-diabetic and it will also help guide Dr. Betz in determining how aggressive treatment must be.
- 2) **STOP** eating refined sugar and flour products and greatly reduce consumption of grains, potatoes, and other starchy foods. There is no reason to consume starchy foods. You can get all your carbohydrates from fresh fruits and vegetables. High quality protein and fats should be consumed at every meal in order to stabilize blood sugar levels throughout the day. Healthy snacks such as raw nuts should be consumed in small portions between meals.
- 3) **EXERCISE!** Vigorous physical activity burns glucose as fuel and also improves insulin's ability to lower blood sugar.
- 4) **Avoid** eating trans-fat or hydrogenated oil. These fats are man-made and are added to almost all processed foods. It is very important to read food labels to make sure you do not eat any of these horrible fats which increase the cells resistance to glucose and insulin. Trans-fats are also strongly linked to other health problems such as heart disease, ADD/ADHD, stroke, and more.
- 5) Utilize **pharmaceutical grade nutrient supplements** in an appropriate manner. There are products that can aid in nerve repair, lower blood sugar, reduce insulin resistance, and even lower your cravings for carbohydrates. Everyone is different so everyone requires a unique supplementation plan.

Call today for an appointment.

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