

High Insulin & Glucose Levels - The Cause of Many Diseases

High levels of insulin and glucose, the result of eating a high refined carbohydrate diet, can result in heart disease, diabetes, hypertension, obesity and cancer. Insulin is produced by the body in response to rising levels of glucose in the blood after a carbohydrate rich meal. The insulin takes the glucose out of the blood and deposits it into glycogen or adipose tissue - usually the latter.

Sounds harmless, right? Wrong. The problem is that there are no concentrated sources of glucose in nature. Fruits and vegetables, especially wild ones tend to be low in carbohydrates. All of the concentrated sources of glucose, the so called "complex carbohydrates," are found in foods that have to be cooked and/or processed to become edible. Thus, they are not really natural foods, and our bodies weren't designed to cope with large amounts of glucose contained in them. We only have one hormone, insulin, to lower blood sugar levels but four different hormones that raise it.

Hence, today we are paying with the above mentioned diseases. How? Well, since insulin is an anabolic hormone, in large amounts it may encourage tumor cell growth. High levels of insulin directly result in increased blood pressure through various mechanisms such as proliferation of arterial smooth muscle cells, which makes the arteries more rigid. It also activates cholesterol synthesis through its stimulating effect on HMG-CoA reductase, the key enzyme in the cholesterol synthesis pathway. The body produces about 5 times or so more cholesterol than ingested by diet. Thus, if you want your cholesterol levels lowered, avoiding that egg won't do anything, instead avoid refined carbohydrates. (It's interesting to note that the most effective cholesterol medications in use today, the statins, work by inhibiting HMG-CoA reductase.) Furthermore, insulin directly shuts off the fat burning pathways in the body, and turns on those pathways responsible for the production of fat and triglycerides. High levels of insulin and glucose also damage arteries, which can initiate plaque formation, and glucose directly binds to LDL molecules, rendering them unrecognizable to the liver and causing them to be attacked by macrophage cells of the immune system, which also initiates a process leading to plaque formation. Finally, chronic high levels of insulin can lead to the desensitization of the insulin receptor - leading to type II diabetes. (As an aside, the reason that diabetics have such a high incidence of secondary coronary and vascular disease is because of the chronic high levels of glucose in their blood and the relatively high levels of insulin some of them receive through injections to control their blood sugar level.)