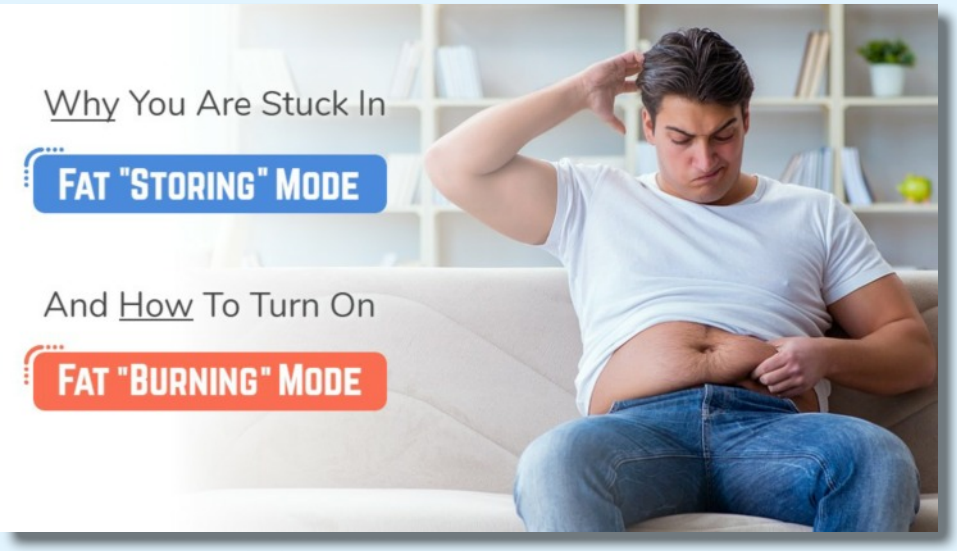
THE TUESDAY MINUTE

IT'S TIME TO FEEL GOOD AGAIN

THIS WEEK'S TOPIC

Insulin Update

"Beyond insulin's blood sugar reduction and fat storage function, most of us have not considered the many metabolic roles insulin plays."



When someone is stuck in fat storage mode instead of fat burning mode, we can predict insulin is probably involved at some level. Most people think of insulin's sole role as the body's way to reduce blood sugar. But beyond insulin's blood sugar reduction and fat storage function, most of us have not considered the many metabolic roles insulin plays. For example, Dr. Cruz in the 70s accidently dripped insulin into the femoral artery of a dog while doing a diabetic experiment. He found the artery that the insulin was being dripped into was almost totally occluded with plaque after about three months. Just the contact of insulin in the artery caused it to fill up with plaque. This phenomenon has been repeated in chickens and dogs over the years.

I've attached a lecture by Dr. Ron Rosedale to the right. He explains, "Insulin causes the conversion of macrophages into foam cells, which are the cells that accumulate the fatty deposits. Every step of the way, insulin's got its fingers in it and is causing cardiovascular disease. It fills the artery with plaque, it constricts the arteries, it stimulates the sympathetic nervous system, it increases platelet adhesiveness and coagulability of the blood." Dr. Rosedale asserts that insulin affects aging or senescence and all our hormones in many ways.

First, let's clarify the problem. As you know, insulin is elevated with the ingestion of carbohydrates, particularly carbohydrates without fiber. As sugar goes up, so does insulin, as insulin facilitates sugar into the cell. But at some point, the cell can only store and burn so much glucose, so it down regulates the insulin receptor sites, slowing down the ability of sugar entering the cell. With less receptor sites, the same amount of insulin has less of an ability to clear sugar from the blood, and more insulin is secreted.

Ultimately, insulin resistance occurs. The term "insulin resistance" really has 2 applications. The obvious one is too much insulin from excess carbohydrates. The second application refers to the cell when it can't tolerate the excess sugar and down-regulates insulin receptor sites to limit intake. But if someone continues to consume carbohydrates, insulin will continue to be secreted. For a period of time, a patient will maintain

normal glucose levels while having elevated insulin levels or hyperinsulinemia.

Insulin has many, many metabolic roles beyond blood sugar. Let's look at a few of them. Magnesium is necessary for the manufacture of insulin. However, insulin is necessary to pull magnesium into the cell. Blocked insulin receptor sites in the cell mean low intra-cellular magnesium levels. Magnesium is also necessary for the manufacture of insulin. Magnesium is critical for energy production, a healthy heart, vascular and blood pressure regulation. Hyperinsulinemia causes the excretion of magnesium as well as calcium in the urine. Magnesium and calcium are acid buffers so hyperinsulinemia will promote an acidic pH, which promotes excess free radicals and inflammation. Excess insulin in blood causes retention of sodium, which causes fluid retention, which in turn causes an increase in blood pressure. Speaking of hypertension, high levels of insulin are one of the strongest stimulants to the sympathetic nervous system.

Dr. Rosedale asserts that insulin resistance affects all our hormones and how they are converted to their active forms. The inefficient conversion of T4 to T3, the biological availability of our sex hormones, estrogen, progesterone, testosterone, as well as the repair hormone DHEA have been tied to insulin resistance.

There is a significant correlation between elevated insulin levels and certain types of cancer, namely breast, colon, prostate, and pancreatic cancer. Poor sugar regulation and insulin dysregulation has also been indicated in aging, memory problems, fatigue, anxiety and depression, immune suppression, obesity, vascular disease, and as I mentioned, heart disease.

I've prepared a chart on some of the indicators for blood sugar regulation to the right. It lists the lab values I use as a screen for insulin resistance or dysregulation. The fasting insulin levels I like to see should be 10 or lower; below 6 is ideal. Traditional lab values suggest treatment should begin when levels exceed 18. However, if fasting insulin levels are over 10, insulin resistance is well under way and needs attention and monitoring with repeated lab testing.

Therapeutically, reduce the patient's level of refined and even starchy carbohydrates until insulin levels are stable and lifestyle changes are made. Also, exercise is critical for anyone who is struggling with insulin resistance. Cells will burn sugar with activity and movement. So, the best way to reduce sugar, besides not eating it, is to burn it. Keep in mind, the most stubborn cases of insulin resistance usually involve one or more food allergens. So, reducing food sensitivities can be important.

As far as supplements, there are several options. The NutriClear Plus and the Metabolic Biome programs from Biotics Research are excellent. But let me remind you, start treatment with the basics and adjust from there as the patient changes their lifestyle. As you know, so many botanical agents are available to assist blood sugar regulation, but if the basic building blocks are not in place, the herbs may not work as effectively.

Thanks for watching. I look forward to being with you again next Tuesday.