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Hyperinsulinemia: The Culprit in Many Maladies
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Your Life Your Health *The Examiner*
June 5, 2003

Inside the pancreas, beta cells make the hormone insulin. With each meal, beta cells release insulin to help the body **use or store** the blood sugar (glucose) it gets from food. Don't forget this point; it is key to our entire discussion. Insulin helps the body **USE** the sugar received during a meal or snack or helps the body **STORE** the sugar which is not needed for immediate energy demands. "Use" means creates energy for activity; "store" means **FAT**!!!

You can already begin to see how important this balance is. If you "take in" more sugar than you use in activity, you will gain weight due to sugar stored as fat. This is not unlike your check book. If you deposit a hundred dollars, but you spend $!50, you will be "overdrawn." In the same fashion, each day you receive a deposit from your body. That deposit represents the number of calories you need to eat that day to maintain your current weight. If you eat more than that, you will gain weight – you will overdraw your calorie account.

I Didn't Eat Sugar!

But, many people will say, "I didn't eat any sugar with my meal, where does the sugar come from?" It comes from all of the foods you eat. In order to utilize the nutrients you eat, they are metabolized by your body into sugar. Some foods go to sugar rapidly and contribute to hyperinsulinemia. These foods have a high "glycemic level," because they rapidly turn to sugar. That is why we can say that eating cooked potatoes is like eating a "lump of sugar." Cooked potatoes are turned to sugar almost as fast as processed, granulated sugar is absorbed into the blood stream. Other foods are turned to sugar very slowly and do not contribute to hyperinsulinemia. These foods have a low "glycemic level."

Remember, last week, we talked about carbohydrates which are fibrous – vegetables and some fruits – and those which are not – potatoes and many fruits? The carbohydrates which are fibrous have a low glycemic level and do not contribute significantly to elevations of your body's blood sugar levels.

Comfort Food – Addiction to Carbohydrates

Most of us are addicted to sugar and to carbohydrates. That is why they are often called "comfort foods." We "feel" better after eating them; they "comfort" us. **However, what they are doing to our health is not comforting!** If you don't believe that you are addicted to sugar and carbohydrates, stop eating any sugar and carbohydrates for one week. You will see that you'll be grumpy and irritable. I was. If you continue to modify your diet and eat less and less high- glycemic carbohydrates, however, your body will adjust. You will feel better, be better and you will not miss your "carbohydrate fix" at each meal or snack.

Keep Moving

Yet, there is a way to "take care of a carbohydrate load." **Activity**!!! **Moving around**!!! **Walking**, **working**, **and exercising**! When you are active, the peaks of blood sugar are much less than if you are sedentary. Therefore, the insulin response and the level of circulating insulin is lower.
You do not develop insulin resistance in the liver, the muscles and the fat cells and you do not get fat. Also, muscle uses more sugar for its activity than other body organs and so the more active your muscles are the more sugar you burn. And, when you "run out of sugar" to burn, your body starts to burn fat. That's how you lose weight.

If healthcare providers could get one message across to patients it would be to **stay mobile**. Keep moving. You should take 10,000 steps a day in order to maintain cardiovascular fitness and to maintain the aerobic capacity of your heart. It would be a good idea to get a counter and wear it to see how many steps you are taking. You can increase your number of steps without planned activity:

1. By walking up stairs rather than riding elevators.

2. By parking farther away from your destination than usual and walking further.

3. By walking to where you are going if it is only a few blocks.

You would be amazed at how you can increase your activity level if that is your goal. Above all, resist scooters and motorized wheelchairs which take away all of your steps. If you have a medical condition which absolutely demands that you have a wheelchair, then you can deal with your need for activity in other ways, but don't let anyone put you into a wheelchair or a scooter until it is absolutely the very last resort.

Diabetes I and II

Remember, in people with type 1 diabetes, the pancreas no longer makes insulin. The beta cells have been destroyed. These people need insulin shots to use glucose from meals. People with type 2 diabetes make insulin, but their bodies don't respond well to it. Some people with type 2 diabetes need diabetes pills or insulin shots to help their bodies use glucose for energy. Insulin cannot be taken as a pill. The insulin would be broken down during digestion just like the protein in food. Insulin must be injected into the fat under your skin for it to get into your blood.

Circulating Blood Sugar or circulating insulin levels

In the diabetic, our concern is the level of circulating blood sugar; in the non-diabetic, our concern is the level of circulating insulin. Just as high sugar levels are toxic to the tissues of diabetics, so high insulin levels are toxic to the tissues of the non-diabetic and/or the pre-diabetic. In reality, we are concerned about insulin resistance in diabetics as well which is part of the hyperinsulinism syndrome.

Elevated Insulin Levels – Hyperinsulinemia

Some of the symptoms of hyperinsulinemia, or reactive hypoglycemia include:

1. Yo-yo weight gain,
2. cravings especially for sugar or high glycemic foods,
3. intense hunger,
4. weakness,
5. shakiness,
6. the need for frequent meals,
7. poor concentration,
8. emotional instability,
9. memory disorders,
10. lack of focus,
11. feelings of anxiety & panic,
12. lack of motivation,
13. fatigue &
14. a host of other symptoms.

Elevated insulin levels are associated with stress, anxiety, smoking, weight gain and poor concentration. It is also connected to the development of a number of family-related diseases such as:

1. Heart and circulatory disorders
2. High cholesterol
3. Stroke
4. High blood pressure
5. Even certain cancers
6. PMS
7. A host of other physiological problems including
8. Acne

Hyperinsulinemia First Described

Hyperinsulinemia was first described in the medical literature in 1924 by Dr. Seale Harris, Professor of Medicine at the University of Alabama, one year after injectable insulin became available. Symptoms of hyperinsulinemia noted were:

1. Hunger,
2. Weakness,
3. Fatigue,
4. Anxiety,
5. Nervousness,
6. Crying spells,
7. Trembling,
8. Confusion,

9. Disorientation,
10. Delirium, and
11. Stupor.

Research from 1924 through the early 1960s indicated that hyperinsulinemia was a contributing factor in: Allergies, Asthma, Obesity, Peptic ulcers, Depression, Alcoholism and Carbohydrate addiction.

The Different Faces of Hyperinsulinemia

1. Insulin resistance,
2. Glucose intolerance, and
3. Decreased insulin sensitivity

These are all terms describing the different faces of hyperinsulinemia were described by Dr. Gerald Reaven, Professor Emeritus of Medicine at Stanford Medical School. He was the first to define what is called Metabolic Syndrome, or Syndrome X in 1988. Syndrome X is a cluster of cardiovascular risk factors -- hypertension, glucose intolerance, dyslipidaemia, obesity, diabetes, and accelerated atherosclerosis – all of which are caused or contributed to by insulin resistance or hyperinsulinemia.

In children as well as adults, hyperinsulinemia causes cardiovascular disease, obesity, Type II Diabetes, and has been linked to ADD, ADHD, food allergies, learning and behavior problems, and juvenile delinquency. Other deleterious effects of hyperinsulinemia are increased rates of infertility, polycystic ovarian syndrome (PCOS), and hormonal imbalances in women. If all that were not enough, hyperinsulinemia also accelerates the aging process.

Experiments in 1930 showed that hyperinsulinemia (too much insulin) suppresses growth hormone (GH). However, the implications of this knowledge have only been recognized within the last 10 years with startling ramifications for old and young alike. Until the late 1980s, scientists thought that GH was needed only by growing children. We now know that GH is needed in high levels throughout life for continuous production of healthy cells, organs, and immune system, thereby creating a strong body, a sound mind, and increased longevity. Growth hormone not only directs the body to regenerate from the cellular level on up, it is responsible for maintaining balance among all the biochemical processes. Lacking this balance, our bodies deteriorate in an ever accelerated rate resulting in illness, disease, and premature death. Understanding the importance of growth hormone's role in cellular regeneration and health is one of this century's most important discoveries.
The foods which contribute to hyperinsulinism are:

1. Fruit Juices
2. Coffee
3. Junk Food
4. Artificial Sweeteners
5. Sugar
6. Breads

7. Vegetarian diets
8. Cakes and cookies
9. Dried Fruit
10. Sweets
11. Soft Drinks
12. Pasta
13. High complex carbohydrate/ low protein diets.

In coming discussions, we will examine how to avoid hyperinsulinism, or how to recover from it if you are already it's victim. Remember, it is your life and it is your health.