

# June Weighing In 2015

## Insulin Resistance, is there a cure?

We received multiple questions this month regarding insulin resistance and carbohydrate intolerance. And since it seems to be on the front burner in many people's minds. I decided I would try to give you some insight into what is insulin resistance? Insulin resistance is a decreased ability of the body's cells to respond to insulin. It's the beginning of the body, not wanting to deal with the glucose and remember all of that is also carbohydrate breakdowns to sugars in our body. One of insulin's primary actions is to get certain body cells to absorb or take in glucose more accurately to store glucose as fat.

Insulin resistance happens when the cells mainly don't want to open the gate to where insulin is used. So glucose keeps going up, Insulin tries to open the gate, and when this happens, the body puts out more insulin to stabilize the blood glucose so the cells can use glucose. And over time, this results in a condition known as hyperinsulinemia " that is too much insulin in the blood."

Hyperinsulinemia causes more problems than we care to go into in the short newsletter. But the big one. Hyperinsulinemia makes it very difficult for the body to use stored fat for energy. So let's look at a few facts that have to go along with insulin resistance.

1. insulin resistance is a condition in which the cells of the body become resistant to the hormone insulin.
2. Insulin presents and precedes the development of type II diabetes.
3. While there are genetic risk factors for insulin resistance. It can be managed with diet, exercise and proper medications. Learning how to eat is key.
4. Insulin resistance is associated with other medical conditions including fatty liver disease, atherosclerosis, acanthosis nigricans, and reproductive abnormalities in women.

Let's discuss insulin a little further. Insulin is a hormone that is produced by the beta cells of the pancreas. Pancreas beta cells are scattered throughout the pancreas in small clusters known as islets of Langerhans. Insulin is produced in these islets; then it is released into the bloodstream as it travels throughout the body.

Insulin is an essential hormone that has many actions within our bodies. Most are direct at our metabolism or the control of carbohydrates that is sugars and starches, lipids,(fats), and proteins. Insulin regulates the function of the body cells, including their growth and the use of glucose stored as energy. Many patients with obesity suffer from insulin resistance. This condition is which the body cells become resistant to the effect of insulin. The pancreas produces more and more insulin. Soon, the pancreas can no longer produce sufficient insulin that the body's demands, and then blood sugar rises. Insulin presents a direct factor developing diabetes, heart disease and morbid obesity.

So what is the relationship between insulin resistance and type II diabetes? Type II diabetes is a disease type of diabetes that occurs later on in life or with the gaining of weight at any age. Insulin resistance can be because of genetic factors. Some medication contributes to insulin resistance. In addition, insulin resistance is often seen with the following conditions: metabolic syndrome is a group of conditions involving excessive weight, (especially around the waist), high blood pressure, elevated cholesterol and triglycerides in the blood, high blood sugar levels. Having just one of these conditions doesn't mean you have metabolic syndrome. However, any these conditions increase the risk of serious disease. If you have more than one of these conditions, your risk is even greater.

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So what are the symptoms will usually there's no obvious outside of insulin resistance. However, with severe forms of insulin resistance dark patches of skin called acanthosis nigricans can develop on the back of your neck sometimes on your hands, knees, knuckles and in your armpits. More importantly insulin has less visual effects on the metabolic reactions throughout the body, including converting calories and fat. Insulin resistance influence liver enzymes that produce cholesterol that acts on the kidney that can contribute to high blood pressure. High insulin levels play a role in the process that regulates the inflammatory response. In time, insulin resistance leads to type II diabetes, itself a risk factor for heart disease. They are genetic factors that can contribute to the development of insulin resistance, including a family history of diabetes, high blood pressure or heart disease. However, lifestyle plays the most important part. Weight loss and exercise are considered the best treatment for restoring the body's ability to respond insulin normally smoking also contributes to insulin resistance or quitting is recommended to bring the conditioner control is also as to improve your overall health.

Watching , your carbohydrate intake. The classic low-fat, high-carb diet, which was the standard recommendation for preventing heart disease for years worsens insulin resistance. If you follow a low carbohydrate diet and focus on low glycemic index sources carbohydrates you will see your weight in your insulin resistance both digress he generous amounts of non-starchy vegetables, cheese a variety of vegetables the cover the full spectrum of colors. Eat fish more frequently and this is been a standard at The Weigh Station for some time now. If you choose cold water fish, which are high in omega three fatty acid, such as Alaskan salmon omega-3's can help you, ameliorate the pro-inflammatory effects of insulin. They also seem to improve the cells response to the hormone. And last but not least, vigorous exercise decreases cells resistance to insulin a 30 to 45-minute walk is perfect.

Prognosis, losing your weight exercise and following the program to the letter will cause you to lessen your insulin resistance lose your weight and reduce the inflammatory response of obesity. With patients returning, some have gone back to their old habits and saying to us. " I wish I just would've stuck with the program." We are here to help you, please take advantage of all of the resources that are available to you. As you enter The Weigh Station you read a quote above the check-in window. "I can do all things in Christ who strengthens me." Philippians 4:13... Make that part of your life and you'll see things changed dramatically.

Blessings to all  
Chuck Shaffer MD

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## Recipe of the month:

Fish Rub: Can be used on any type of fish to add flavor

(enough for 4 fish fillets)

1/2 tsp sweet paprika

1/2 tsp. dried thyme

1/2 tsp. Creole seasoning

1/4 tsp. garlic powder

1/4 tsp. onion powder

1/4 tsp. salt



Using about 1 tsp. olive oil and 1/2 tsp. rub mixture per piece of fish, rub each side of the fish with olive oil, sprinkle with rub mixture, and then rub the mixture so it's covering the surface of the fish. Roast fish 9-10 minutes or until flakey.

# The Importance of Bacteria when it comes to Health

When most people hear the word bacteria they usually associate it with infections, illness and simply dirt. The truth of the matter is that bacteria are everywhere and without some bacteria we would be in big trouble. There are both good and bad bacteria. Most of the time we only hear of the bad, but the good guys we literally couldn't live without. They reside mostly in our gut and new research shows that an imbalance in this kind of intestinal bacteria could result in an increased susceptibility to a slew of autoimmune diseases as well as obesity!

The population of bacteria in our intestinal tract is known as our intestinal microbiota. There are 1000 different species of bacteria and millions of microbial genes all residing here. These bacteria are responsible for breaking down dietary fibers while producing short chain fatty acids aiding in the activation of vitamins and also play an important role in immunity and metabolism. They also protect us from harmful bacteria! The gut microbiota affects the body's metabolism by affecting energy balance, glucose metabolism, and low grade inflammation associated with obesity and other related conditions. A study in obese mice showed that their microbiota had an increased ability to produce energy intake compared to non-obese mice despite similar calorie intake. The key bacterium that seems to be in less abundance in obese individuals compared to lean individuals is known as Bacteroidetes. This imbalance in Microbiota has also been linked to T2D and insulin resistance.

Recent research suggests that an individual's microbiota makeup is dependent on three major things: diet, medications and interestingly enough the way we entered this earth (vaginal births vs c-sections). Of these three, it is estimated that diet plays the most significant role.

Although low carb diets are highly successful in treating obesity, they have also been shown to increase some bacterial enzymes in the microbiota that can trigger inflammatory responses and lower the good bacteria known as bacteroidetes. Therefore, while following a low carb diet it is a good idea to supplement with both prebiotics (such as inulin) and probiotics or incorporate fermented foods into your meal plan such as sauerkraut to keep your bacteria in balance, keep inflammation low, enhance your immune function and help you lose weight!

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