M A Y 2 0 1 0 E D I T I O N

KOFINAS PERINATAL

Providing care to the unborn

UPDATES ON PERINATAL ISSUES AND NEWS ABOUT KOFINAS PERINATAL

The effects of fat and carbohydrates on weight loss and health

Perpetual myths exposed: part II

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Kofinas Perinatal Baby of the Month

After a long 71/2 years of trying and thinking that we would never have a baby of our own on April 15th 2009 we were blessed with a pregnancy!!! On December 2nd 2009 our little miracle was born.....She was the

best Christmas gift two people could ever receive. Today Toni Frances is 4 months old and we are thankful everyday for her, our lives are so much better now that she is here!!!!

Proud Parents
Lisa and Jason

This article was written for the most part by Dr. Graham Simpson, M.D. under the title "Glycemic Index and Glycemic Load". The current version of the article has been subject to minor editorial and content adjustments by Dr. Alexander Kofinas to be more suitable for our newsletter. In addition, those of you who would like to get a more in-depth exposure to the subject, should buy the book "Good Calories, Bad Calories" by Gary Taubes. This is the most accurate medical textbook I have ever read that was not written by a physician. Mr. Taubes, a medical journalist/reporter, did an exceptional job in putting together the facts of a massive medical literature and sole handedly dispelled all of the myths regarding fat and cholesterol in association with cardiovascular diseases and the chronic diseases of civilization (diabetes, cancer, hypertension, coronary artery disease, heart failure, cerebrovascular accident disease etc.) This article is presented in two parts. Part I was published with the April issue of the newsletter. Part II of the article starts below. For those who did not already read Part I, please go back to the web site and download the April issue of the newsletter.

Thus the glycemic index is a measure of the entry rates of various carbohydrate sources into the bloodstream; the faster their rate of entry, the greater the effect on insulin secretion. There are at least three factors that affect the glycemic index of a particular carbohydrate. First is the amount of fiber (especially soluble fiber), the second is the amount of fat it contains and the third is the composition of the complex

Myth # 3

"Low carbohydrate diets cause hunger, starvation feelings, loss of energy and depression". Quite the contrary, high carbohydrate diets lead to hyperinsulinemia with extreme elevations of blood insulin levels, which then cause hypoglycemia and hunger. Fat and protein rich diets satisfy hunger without the well-known yo-yo effects on our blood sugar created by high carbohydrate consumption.

carbohydrate. The greater the amount of glucose, the greater the glycemic index.The glycemic load is even more important than the glycemic index in determining the insulin output of a meal. The glycemic load is the actual amount of insulin-stimulating carbohydrates consumed, multiplied by its glycemic index per unit of weight.

Source	Volume	GI	GL
Pasta	1 cup	59	3,068
Apple	1	54	972
Broccoli	1 cup	50	150

Composition of Different Glycemic Loads

Even though the GI of each of these carbohydrates is about the same, 1 cup of pasta generates 20 times the insulin response of 1 cup of broccoli, because broccoli contains a lot less carbohydrates than pasta in one cup. Remember, the more processed a food, the higher the GL. Thus by using the concept of glycemic load, it also becomes clear why consuming most of your carbohydrates from quality vegetables is key to maintaining low insulin levels. ***And we should not ever forget that pasta is dense in calories and very empty in nutrients (vitamins, trace metals, cofactors, coenzymes etc.)***

In the 1980's Gerald Reaven[4] (Stanford) coined Syndrome X (Insulin-Resistance Syndrome/Metabolic Syndrome), which describes metabolic abnormalities common to obesity – diabetes and cardiovascular disease – all exacerbated by sugar, flour and other easily digestible carbohydrates:

Effects of Metabolic Syndrome (X-syndrome)
• Increased triglycerides
• Increased blood pressure
• Increased fibrinogen
• Increased insulin
• Increased fat
• Increased sugar
• Increased small LDL particles
• Decreased HDL
• Increased waist
• Increased uric acid
• Increased fat
• Increased CRP (inflammation)

Insulin is the primary regulator of fat, cholesterol and protein metabolism. Species need time to adapt fully to changes in the environment – the introduction of diets high in sugar and refined, easily digestible carbohydrates was the most dramatic change to the body over the past 2 million years. This environmental and nutritional change took place in the past few hundred years. It is probable that refined carbohydrates and sugar created such a disturbance in blood sugar and insulin that they lead to disturbances of homeostatic regulation and growth throughout the entire body. The changes in our diet were so profound in such a short time that our bodies did not have the time to adapt.

Even though Scott Grundy stated in 2004 that metabolic syndrome was probably the cause of most heart disease in America and that this syndrome is probably caused by the excessive consumption of refined carbohydrates, his three reports to NIH, AHA and the ADA position all remain wedded to the cholesterol/heart disease dogma. Castelli in "Atherosclerosis" (1996), reviewed 26 years of the Framingham Heart Study and showed a significant overlap of LDL cholesterol in populations with and without coronary heart disease: 80% of myocardial infarction (heart attack) patients had similar cholesterols as those who did not have myocardial infarctions! In fact, twice as many individuals who had lifetime total cholesterol of less than 200 mg/dl had coronary heart disease compared to those who had total cholesterol greater than 300 mg/dl. The recent epidemiological data suggests, in fact, that a high dietary glycemic load from refined carbohydrates increases the risk of coronary heart disease independent of any known coronary risk factors.

Myth # 4:

"Fat consumption causes weight gain and carbohydrate consumption causes weight lost". Over the last 150 years, hundreds of studies over and over again have shown that the opposite is true. However, the most convincing evidence comes from the reality as being played in the American society right now. In the last 60 years, Americans as a nation have reduced the amount of fat consumption on average by >10% and obesity has more than doubled. This is because refined carbohydrate calories replaced the fat calories. If this is not convincing enough then nothing else will matter any more.

In a similar fashion, the excessive consumption of these refined carbohydrates leads to obesity and diabetes. Diabetes mellitus will cost the U.S. in 2008 174 billion

dollars. Over 1 million new cases of diabetes mellitus will be diagnosed this year and nearly 70% of the U.S. population is now overweight. ***The problem is not the severe, marked huge, circus type of obesity but rather the 25-40 pounds put on gradually over the years – the moderate creeping obesity so common among Middle-Aged Americans.***

This excess weight and obesity are caused by the singular hormonal effects of a diet rich in refined and easily digestible carbohydrates. It is the **"quality"** of the calories consumed that regulates weight and the "quantity" (more calories consumed than expended) that is a secondary phenomenon. **There is something about carbohydrates that allows an increased consumption of food but still induces hunger**. This is because the flow of fatty acids out of the cells and into the circulation depends on the level of blood sugar available and insulin levels. **At a "cellular level", the body is starving and this is manifest as hunger and lethargy.**

Often with weight loss, fatty acids are released.

Myth # 5:

"What is important is to reduce the overall calorie intake and maintain a high carbohydrate – low fat diet in order to achieve health and weight loss". There is no truth in this statement also. Because high insulin secretion caused by high carbohydrate consumption reduces the metabolic rate and does not allow our muscles to consume glucose, low calorie carbohydrate-based diets after the initial weight loss, they lead to weight gain despite low calorie consumption. This happens because high insulin causes all calories to be converted to fat and our body is in a state of constant starvation.

Cholesterol is also released, resulting in the "transient hypercholesterolemia" of weight loss that we often see.

When investigators tested the efficiency of high-fat, carbohydrate-restricted diets, the results were remarkably constant. Every investigator reported weight loss between 1-5 pounds/week. None suffered symptoms of semi-starvation or food deprivation, excessive fatigue, irritability, mental depression or extreme hunger.

However, if we add 400 calories of fat and protein to 800 calories of proteins and fat, we have a 1,200 calorie high-fat, carbohydrate-restricted diet that will result in considerable weight loss, but if we add 400 calories of carbohydrates to 800 calories of protein and fat, we have a balanced semi-starvation diet usually prescribed for obesity. We now have a balanced semi-starvation diet that will induce 40 lbs of weight loss in less than 1 in 100 (1%) instead of 1 in 2 (50%) with the carbohydrate-restricted diet. This means that if cheaters just reach for a bagel or a couple of sodas they would now be eating a balanced semi-starvation diet with its 1% success rate.

In the 1920's, New York internist, Blake Donaldson treated over 17,000 patients with a low-carbohydrate diet with good success. Alfred Pennington, M.D. (1949) followed Donaldson with excellent results. JAMA did not however endorse such a high-protein/fat, low-carbohydrate diet from this time until 2004 and 2007 despite the numerous clinical studies presented over the years. It is time to include all the data since William Banting over 145 years ago and recognize the importance of the GI/GL in our daily practice, as recently presented in the Journal of the American College of Cardiology in January of 2008.

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