Blood Sugar

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Diabetes Type II, Hypoglycemia, Insulin Resistance... Just what do all these mean and how are they all related? Most importantly, what can we do about them? Generally speaking, they are all connected to carbohydrate metabolism/blood sugar and can, to a great extent, be controlled by diet and proper supplementation. They involve a complexity of organs including the adrenals, pancreas, pituitary, thyroid and kidneys (due to the excessive urination caused by diabetes) which all need support. In fact, the yen for carbs is even affecting our animals who are coming up with their own versions of the diseases.

The number of Americans with these health challenges is reaching epidemic proportions with over 17 million Americans diagnosed with Diabetes Type II. That is a 33% rise in numbers from 1990 to 1999 and an extraordinary 70% rise in those aged 30-39. Some researchers estimate there is that number again with undiagnosed diabetes. These numbers do not reflect Hypoglycemia or Insulin Resistance.

The Role of Insulin

This is the hormone produced by the pancreas and responsible for regulating the amount of sugar going to the brain after eating. It does this in two ways: a) the presence of insulin alerts the liver (which stores sugar/energy as *glycogen*, as do muscles) so it does not allow too much to go to the brain, and b) insulin stores excess sugar in cells thus balancing blood sugars and insulin levels. However, in Type II diabetics and those who are "insulin resistant," the cells will not allow the insulin to offload the excess sugar from the bloodstream. This causes the pancreas to secrete even more insulin in an effort to unlock those closed cells but which actually causes the cells to lock down even further.

Long term *hyperinsulinemia* leads to:

-Acne
-Addictions
-Asthma
-Cancer
-Carbohydrate and stimulant cravings
-Delayed puberty
-Depression and mood swings
-Eating disorders
-Excessive weight gain
-Heartburn and other gastrointestinal disorders
-Heart disease (coronary artery plaques)
-High cholesterol and triglyceride levels
-Infertility
-Insomnia/fatigue
-Insulin resistance leading to Type II diabetes
-Irritable bowel syndrome
-Low estrogen
-Polycystic Ovarian Syndrome
-Migraine headaches
-Osteoporosis

Other side effects of excess insulin according to Joseph Mercola, DO, The No-Grain Diet, are that it:

-Halts production of glycogen which promotes the burning of fat and sugar.
-Halts production of growth factor which is used for muscle development
-Causes hunger and grain addiction

Some insulin resistance does happen as individuals age, and there seems to be a vague genetic predisposition to it, but mostly, according to Diana Schwarzbein, MD, The Schwarzbein Principle, it is *acquired*: caused by a high carbohydrate/low fat diet. In fact she insists *"Long-term low-fat, high carbohydrate dieting leads to insulin resistance and, if continued, results in Type II diabetes. The same diet makes diabetics [Type I] sicker."* She also makes the point that fat storage is not linked solely to diet but also to other **insulin stimulating factors** such as:

-Stress
-Caffeine
-Aspartame
-Tobacco
-Steroids
-Stimulants
-Recreational drugs
-Lack of exercise
-Excessive/unnecessary thyroid replacement

As an example, caffeine and its related substance *theobromine* (from tea and cocoa), have a similar effect on the body as sugar. They stimulate the adrenal glands to release an adrenaline-like substance which in turn causes the liver to release sugar into the blood stream. This is what gives you the 'lift' when you drink coffee, tea, Coke, Pepsi, etc. In fact, it has been shown that even sugar substitutes stimulate insulin production which is only one of many reasons why aspartame, and such, are highly discouraged in a healthful blood-sugar balancing diet.

If insulin resistance has increased to the diabetic stage, this means the pancreas has virtually shut down its production of insulin. Standard treatment consists of insulin injections, which can cause arterial plaques, but dietary and supplement treatment can actually restore a malfunctioning pancreas.

As for diet, Dr. Schwarzbein stresses only *real* food, defining that as anything you could in theory pick, gather, milk, hunt or fish. Also vital is a great reduction in carbohydrate consumption. But of course not all carbohydrates are created equal.

Carbohydrates

While all carbohydrates turn into sugar for liver and cellular storage, the length of time it takes for them to do this is a critical factor in maintaining even blood sugar levels.

Complex Carbohydrates:

Vegetables—fresh vegetables, especially the green leafy type, can, and should, be eaten in abundance, up to 80%, as they will help to alkalize the system

Fruits—all fruits are also complex but keep in mind that they tend to contain very high levels of sugar.

Grains—whole grains are considered complex carbohydrates, but it is wise to limit consumption to sprouted or fermented grains, always avoiding all processed grains. Also, all non-sprouted grains produce an acid pH in the blood leading to other health issues.

Simple Carbohydrates:

Sugars—the only acceptable sugars are the real sugars such as raw honey, Grade B maple syrup, stevia (an herb), organic blackstrap molasses and the like; quantities should be highly limited for someone with questionable blood sugar.

Processed—all the other sugars including white sugar, brown sugar, so-called "raw" sugar, corn syrup, etc., should always be avoided

Juices— Home juicers are very affordable and easy to operate. Fresh green vegetable juices can be an excellent source of nutrients and alkalinity and are quickly absorbed. Canned or "from concentrate" juices are generally packed with processed sugar and should be avoided.

****Note:** With metabolic challenges, it is far better to have 5-6 smaller meals per day than the standard three and *always* include breakfast.

Fats

Each meal should include some proper fat in order to maintain blood sugar. "Proper" meaning from only grass fed/finished animal sources (including raw dairy) or from vegetable sources such as avocado, coconut, or small amounts of nuts/seeds or olive oil.

Supplements

In addition to necessary dietary changes, following the **Dynamite®** Basics of **Elixir™**, **Regular** or **Plus** and **Tri-Mins™ Plus** is very important to ensure proper nutrition. Their excellent balance and bio-availability of minerals seems to help control addictive carbohydrate and sugar cravings. Added supplements more specific for blood sugar balancing are:

Athletic Formula™ (chromium)—the most important single nutrient for blood sugar balance is the mineral chromium; it is also found in such foods as meats, cheese, eggs, molasses, nuts and whole grains—many individuals find it helpful to take one capsule after lunch and one before bed to help maintain blood sugar during longer periods of no food. The chromium in **Athletic Formula™** is an amino acid chelate rather than a picolinate. The picolinic acid breaks off and then attaches to other minerals in the body for excretion which actually removes necessary minerals from the body.

PMS* (*Premium Magnesium Supplement)—right behind chromium in carbohydrate metabolism is magnesium which also helps with muscle relaxation, acid-alkaline balance maintenance, and serotonin production; also found in beans, broccoli, avocados and figs. Interestingly, chocolate cravings can indicate a magnesium deficiency which can be exacerbated by high oxalic intake (raw spinach and rhubarb) and the high phytates present in grains.

Additionally, **Herbal Green™** acts as an alkalizer and seems to support the adrenals. Most prefer to take it in the afternoon along with **Athletic Formula™** and a snack since it seems to help alleviate the typical mid-afternoon slump and subsequent food binge.

Also consider **DynaLite**, chelazoned to support the thyroid gland and **Hiscorbadyne®** which supports all cellular structures.

For our Animals

Our pets also can suffer the results of excessive carbohydrates with the "easy keepers" being at most risk. They have similar symptoms as humans including lethargy, excessive weight gain (or loss if serious enough), infertility, depression/mood swings, digestive ailments, etc.

HORSES—all obese horses but especially the "cresty" ones prone to laminitis (ie: Equine Metabolic Syndrome formerly known as Peripheral Cushing's) should have all grain removed from their diets (maybe a handful or so of **PGR** for some), have only free-choice grass hay (that intestine still requires matter flowing through it), have access to the four **Dynamite®** Free Choice Minerals (**NTM Salt™**, **1:1**, **2:1**, **Izmine™**), **Dynamite® (regular)** and **H.E.S.™**. Most also do better with added **Breeder Pac™** to feed their hormone systems and **Easy Boy™** for even more magnesium than the **Izmine™**offers. Some owners of insulin-resistant horses find the **Dynamite® TNT** easier to feed requiring fewer additions since **TNT** pellets already contain **Regular**, **Easy Boy™**, **Free & Easy™**, **Excel™**, **Izmine™** and **H.E.S.™**. Less active animals may not need the full serving of 1 1/3 cups, but may do fine with only 2/3 cup per day. Horses who have full Cushing's disease also seem to do very well on this program. For those requiring extra chromium, GTF (Glucose Tolerance Factor) Chromium tablets (a high chromium yeast) from the health food store works very well; simply hand feed or smash into feed. Generally it is suggested to start with 200 mcg. or so building up to approximately 1000+ mcg. before heading back down again; amounts will depend on the individual horse/pony. Some will need it their entire lives and be able to eat free choice grass hay as they should; if the chromium levels fall below their particular needs, they will immediately gain weight just "looking" at the hay! Every horse is an individual so it may take a bit of adjusting to find the exact program for each one.

DOGS/CATS—see Kay Aubrey-Chimene's article on the next page for information on Small Animal Diabetes.

The comments of this article are the expressed opinion of independent distributor, Rowan Emrys. Her ideas are not necessarily a reflection of Dynamite® corporate opinion and are not intended to diagnose or treat any condition.