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"treating the cause of your problem, not just the symptoms"

Go Easy On The Simple Carbs, Part 2

Last week, I discussed the difference between foods with a high versus a low "glycemic index". To refresh your memory, A food with a **low glycemic index (GI)** has less carbohydrate in it and is digested slowly and typically raises blood sugar (glucose) levels only moderately. A food with a **high glycemic index (GI)** contains a lot more carbohydrate and is digested quickly, resulting in blood sugar (glucose) levels to increase quickly and more than desired. To further refresh your memory, the presence of glucose in the bloodstream usually triggers the production of **insulin**, a hormone that helps glucose get into cells where it can be used for energy. Once our cells in our body have enough stores of glucose, any extra glucose still remaining in the bloodstream can be stored in our muscles and liver for later use. If our muscle and liver stores of glucose are full, but we still have extra glucose floating around in our blood, then insulin can help our body store this excess sugar as fat. Yes fat. Did you hear me say Fat? This means that any excess sugar in your blood is converted to and stored as fat in your fat cells!

Since insulin helps glucose get into cells where energy is made, insulin is vital to fuelling the body. However, too much insulin secretion over long periods of time can cause problems. Research shows that prolonged exposure to elevated levels of insulin can cause:

- high triglycerides
- high "bad" LDL cholesterol
- low "good" HDL cholesterol
- high blood pressure
- insulin resistance
- increased appetite
- obesity
- risk of developing or exacerbating type 2 diabetes

When a certain combination of these disease-promoting factors is present all at once, the constellation of symptoms is called Metabolic Syndrome. The presence of these symptoms also raises a person's risk of cardiovascular disease, diabetes, and prostrate or breast cancer. In studies reported in the American Journal of Clinical Nutrition in 2002, diets high in carbohydrates that had a high GI were linked to a greater risk of coronary heart disease. Several prospective observational studies have shown that the continual

eating of foods with a high glycemic index is linked to an increased risk of developing chronic conditions such as *cardiovascular disease, type 2 diabetes and certain cancers*. In a recent study that evaluated more than 65,000 American women, a high dietary GI was positively associated with an increased risk for type 2 diabetes.

An article appearing in the October 2003 issue of Critical Reviews in Food Science and Nutrition by Drs. Stacey Bell and Barry Sears explains in detail what happens metabolically when a high glycemic load meal or snack is eaten. In their study of healthy volunteers, Bell and Sears found that two hours after eating a high glycemic meal, blood sugar levels were twice as high as the levels that resulted from consumption of a low glycemic meal. These high blood sugar levels triggered the synthesis and release of insulin, our key hormone for getting sugar back out of the bloodstream and into the cells.

While a single, high glycemic index meal might not cause significant health problems for our body, frequent consumption of high glycemic load meals can result in perpetually high insulin levels. When insulin levels stay high, our hormone (endocrine) system can start out on a rollercoaster ride in which the body tries to adjust to its perpetually high insulin level with changes in other hormone levels that can leave us *tired, hungry, and on a course toward increased risk of cardiovascular disease and type 2 diabetes.*

By contrast, many or all of these unfavourable hormonal shifts become less likely when a meal with low glycemic index is eaten. Since low glycemic meals take longer to digest and absorb, and nutrients are released gradually, blood sugar levels tend to remain more stable and insulin levels tend to rise in a non-risky fashion. As an added benefit, a low glycemic way of eating is associated with lower levels of LDL-cholesterol and triglycerides.

Have you ever noticed that you feel lethargic after eating foods that stimulate a large insulin response, such as donuts or candy? This often happens because too much insulin is produced in response to such foods, and this excess insulin causes blood sugar levels to drop below normal, resulting in low blood sugar (hypoglycemia) and fatigue. When this happens, people who are unaware that the high sugar food they just ate is the reason for their sudden drop in energy reach for another sweet or high carbohydrate food, which starts the cycle all over again. When our blood sugar is bouncing from too high to too low repeatedly throughout the day, we certainly don't feel our best. On the other hand, when our food choices help us maintain consistent normal blood sugar levels, we feel great and have the energy we need to enjoy long, active days.