

MEDICAL REPORT

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CONTROLLING INSULIN: THE KEY TO OPTIMAL METABOLIC HEALTH

If you're like most people, chances are you may have put on a few un-welcomed pounds over the winter months. Or perhaps you've recently been to the doctor and discovered that your blood pressure is too high, or your triglycerides and cholesterol are out of range, or maybe it's your blood sugar that's escalating. For the roughly 25% of Canadians with The Metabolic Syndrome, a condition in which all of these above afflictions cluster together (diagnostic criteria to follow article), the implications are vast; having The Metabolic Syndrome increases one's risk for diabetes, heart disease, stroke, kidney failure, and even some cancers.

Why are so many Canadians plagued with these metabolic disorders and further, why do these disorders tend to cluster together? The answer lies predominantly with our diet and the effect it has on our hormones – mainly insulin.

Insulin is a hormone that is released from the pancreas after eating. Its job is to clear sugar, the breakdown product of carbohydrates, out of our blood and into our cells. Eating the wrong foods in the wrong combination, especially when coupled with a genetic predisposition, can lead to blood sugar and insulin spikes which in turn can result in insulin resistance and hyperinsulinemia (chronically high levels of insulin in the blood). This is the worst hormonal environment for weight loss and metabolic health for the following reasons:

1. Insulin has been proven to be a growth factor – it encourages fat storage and weight gain instead of fat burning and weight loss. Case in point - Babies born to diabetic mothers who are exposed to insulin in utero are often born very large, often greater than 10 lbs, which just goes to show how profound the effect of insulin on weight gain really is.
2. Insulin stimulates the liver to produce triglycerides, the fat that remains in our blood vessels and therefore predisposes to heart attack and stroke.
3. Insulin causes our kidneys to reabsorb sodium which in turn leads to water retention and increased blood pressure. And,
4. Insulin resistance means that our cells do not respond optimally to insulin and as a result, sugar from carbohydrates cannot get into our cells to make energy. Instead, the sugar remains in our blood and overtime results in sugar diabetes.

As you can see, elevated levels of insulin are detrimental to our health and our waistlines. The good news though is that this state can be prevented and even reversed with a few simple lifestyle changes. Try implementing the tips below and before you know it, you'll be en route to a leaner and healthier you!

- Start exercising! Exercise burns calories. And lots of them. This is why we feel warm and sweat when we work out. Fat is being burnt off – i.e. it's being converted to fuel and heat is released with the reaction; this is why the body heats up and sweats. Furthermore, exercise decreases insulin resistance and thus helps to lower insulin levels.
- Do not skip breakfast. Skipping breakfast sets the body up for a spike in blood sugar and insulin when food is finally consumed. The best approach to stabilizing blood sugar and insulin levels is to eat regular meals and snacks every three or so hours.
- Consume well-balanced meals and snacks – those with a combination of protein, healthy fat, and carbohydrate are best. For example, whole wheat pasta with vegetables and chicken in a tomato and olive oil based sauce; yogurt with ground flax seeds and slivered almonds; and lean steak with asparagus cooked with balsamic vinegar and olive oil accompanied with half of a baked sweet potato would all be great options.
- Eat plenty of veggies! Vegetables are high in water and fiber and therefore often have minimal impact on insulin levels.
- When choosing fruits, the ones eaten with the peel, seeds, or rinds are best such as berries, grapes, plums, apples, kiwis, oranges, and grapefruits, as the fiber helps to offset the sugar content.
- Ditch low fiber, processed, and refined starches; even though all starches break down to sugar, the ones that are higher in fiber such as whole grain breads, oats, bran cereals, sweet potato with peel, long grain rice, and whole wheat pastas do so more slowly and therefore are better for blood sugar and insulin levels.
- Boost the omega 3 in your diet as these healthy fats promote longevity by decreasing cholesterol, improving insulin sensitivity, reducing inflammation, and facilitating weight loss. Dark leafy greens; coldwater fish such as salmon, mackerel, tuna and herring; walnuts, soybeans; tofu, miso; and ground flax seeds and flax oil are excellent sources.

The Metabolic Syndrome Diagnostic Criteria

For a positive diagnosis, you must have greater than 3 of the following 5 traits:

- Abdominal Obesity defined as waist circumference > 40 inches in men or > 35 inches in women
- Serum Triglycerides greater than 1.7 mmol/L or drug treatment for elevated triglycerides
- Serum HDL less than 1 mmol/L in men or less than 1.3 mmol/L in women
- Blood pressure greater than 130/85 or drug treatment for elevated blood pressure
- Fasting blood glucose greater than 6.1 mmol/L or drug treatment for elevated blood glucose

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