

Syndrome X and Insulin Resistance

As heart disease rates continue to rise in this country, more and more people are becoming aware of the importance of diet and exercise. One of the major modifications people are trying to make is lowering dietary cholesterol and keeping abreast of their cholesterol levels. However, the solution to the heart disease problem is not that simple, and this is reflected in the fact that although dietary cholesterol regulation is being limited, cardiovascular events continue to be the number one killer in the United States. New research in the field of clinical nutrition points out that although cholesterol levels do play a significant role on the onset of cardiovascular disease, there is a underlying factor in the war against heart disease, and this is phenomenon is insulin resistance, or Syndrome X.

Insulin resistance occurs when the body is unable to adequately process sugars from foods into energy. Insulin is a hormone produced by the pancreas whenever carbohydrates or sugar is ingested. This hormone is crucial in transporting glucose into the cells for energy. People with Type 1 Diabetes are unable to produce insulin at all, and they require insulin injections to keep their blood sugar levels in check. People with Type 2 Diabetes can produce insulin; however, the demand for this hormone far outweighs the supply needed to transfer blood glucose into the cells and in turn, blood sugar levels begin to rise out of control. Syndrome X is a little different in that the body is able to produce insulin, even high amounts of it, but for some reason or another the receptors on the cells which usually respond to the hormone don't. This cellular resistance causes blood sugar to remain high, triggering more and more insulin to be produced. Eventually, the body produces enough insulin to transfer the sugar out of the blood and into the cells to be stored for energy. However, the result of the excess insulin coursing through the blood has serious consequences. The presence of all the extra insulin may harm the interior lining of the arteries, including the coronary arteries that feed the heart. The excess may also trigger other changes in body chemistry that encourage coronary artery disease. For instance, high insulin levels have been shown to increase the liver's production of VLDL cholesterol. This specific type of cholesterol contains the greatest amount of blood fats, or triglycerides. Both LDL cholesterol and triglyceride levels, when elevated, are directly related to increased risk of cardiovascular disease. Increased insulin levels have also been linked to water retention, high blood pressure, and obesity.

The actual underlying cause of insulin resistance has been traced back to two main factors: genetics and lifestyle differences. Genetically, it is important to realize that genes play an important role in how well insulin can "corral" glucose into a cell. It is genetic information that determines the effectiveness and response of insulin receptors found in the cell. The better these receptors operate, the more likely insulin will be able to do its job and transfer glucose into the cell. Studies on insulin levels of family members reveal that insulin resistance as well as sensitivity does have a similarity. As a matter of fact, further research reveals that specific ethnic groups seem to suffer the effects of insulin resistance more than others. The most groups most susceptible to Syndrome X include American Indians, Japanese-Americans, and Mexican-Americans. The group that is least likely to be insulin resistant is those of European decent.

Lifestyle and habits also play a major role in the onset of Syndrome X. Variables such as body weight, level of physical activity, smoking, alcohol consumption, and diet all add up to determine a persons ability to regulate blood sugar and fats. Interestingly enough, all of these variables are under our control, and regulating them is far more effective than taking any medication. Obesity seems to have the most direct connection to insulin resistance. In short, the more obese you are, the more resistant you will be, and the greater likely hood of developing Syndrome X. Not every person who is obese is insulin resistant and conversely, not everyone who is slim is insulin sensitive. But if you do happen to have a genetic predisposition for insulin resistance, being obese will definitely have an adverse effect on your cardiovascular system.

Syndrome X is not some type of flu or bug that you catch and hope your immune system can fight it off. It is the culmination of years of poor dietary choices in the form of foods high in refined sugar and carbohydrates. The heart healthy diets of the future will shy away from low-fat, high carbohydrate foods and be geared more towards low-carbohydrate, high protein foods.

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