## Understand Type 2 Diabetes to Manage and Reverse It

(For a detailed explanation, review the Type 2 diabetes book and pamphlet posted on the website www.foodlifestylebalance.com)

In most patients, Type 2 diabetes and Obesity occur together. Type 2 diabetic patients who are lean have smaller muscle mass and more fat. Insulin resistance from an excess of glucose and insulin in the body is the cause of excessive fat. To understand Type 2 diabetes, one has to get familiar with the following:

- What is Glucose? What does it do in the body?
- What is Insulin? What does it do in the body?
- What is Insulin resistance?

*What is Glucose*? There are trillions of cells in the body, each of which requires energy to survive. Glucose is a natural source of energy in the body. Insulin is an essential hormone that helps in transporting glucose into the cells. Insulin is produced by the specialized beta cells in the pancreas gland located in the abdomen behind the stomach. The glucose from the ingested food gets absorbed into the bloodstream. The rise in blood glucose releases insulin from the pancreas gland. The higher the blood glucose, the higher the amount of insulin gets released. High glycemic foods such as refined sugar foods and beverages lead to very high levels of glucose and insulin. Over time insulin-making capacity of the pancreas gets exhausted, and the patient requires insulin injections for disease control. High glycemic foods and drinks are the primary cause of Type 2 diabetes and Obesity in modern city dwellers.



*What is Insulin Hormone and Insulin Resistance?* Insulin is responsible for transporting glucose inside the cells. It works like a key that unlocks the door in the cell wall so the glucose can get in. When



there is an excess of glucose and insulin, the cells get overfilled with glucose and fat. The cells create a protective shield to lock the glucose door so the excess glucose cannot enter. This protective mechanism is called Insulin resistance.



Insulin resistance protects body cells from glucose overdose. However, it has two undesirable effects that worsen the diabetes disease process in the body. These are:

- **Food cravings and overeating**. The cells locked out of glucose get into starvation mode. That produces the signals to eat more food to bring in more glucose from the digestive tract.
- *Higher insulin demand*. Starving cells demand more insulin from the pancreas gland to transport glucose to cells. Higher insulin levels mean more appetite and fat storage.



Insulin resistance, therefore, sets up a vicious cycle of abnormally high blood glucose and insulin levels. The mechanism of insulin resistance is at the root of many new food and lifestyle diseases such as Type 2 Diabetes, Obesity, High Blood Pressure, Heart Disease, Metabolic Syndrome, PCOS (polycystic ovarian syndrome of young females), and more.

