

The Weigh In

What would you say if you learned that the answer to weight loss lies within the very cells that are making us fat. Not because they are there, that's obvious, but because of what they do. They don't just pad our organs, help us maintain our body temperature, and act as caloric storage units. They function in a specific way that is directly related to our appetites. In persons who are overweight or obese, this function has gone astray. Healthy weight – can be obtained by restoring these cells to their proper synchronicity.

To simplify a complex conversation, in 1994, scientists discovered that the fat cells in white adipose tissue (or body fat) secrete a hormone that directs appetite, affecting energy balance and metabolism. This hormone has been named *leptin*.

Until this discovery, glands were identified as specific clusters of tissues like the thyroid, adrenal, and sex glands. In effect, body fat can be conceived of as a large endocrine gland, similar to the skin as a respiratory organ or the bulk of intestinal bacteria as a digestive organ.

Leptin was soon discovered to be involved with insulin, with the cardiovascular system, immune function, stress, bone health, cancer, and inflammation as well as interacting with all our known hormones. (In fact, fat cells communicate with at least 15 other signals...a much more complex system than previously believed.)

In varying pulses and surges throughout the day and night, leptin sends messages to the brain. When there are problems in this ebb and flow, health conditions can follow. In addition to obesity, these include anorexia, loss of immunity, bone loss, gastrointestinal problems, liver malfunction, heart disease, cancer, cognitive problems and nerve problems.

Leptin functions by gauging our fuel supply. It does this by allowing

or restricting energy production. In their remarkable book *Mastering Leptin*, authors Richards and Richards declare, "Leptin is truly the survival principle of the subconscious mind."¹ When the brain sense that leptin levels are high, we get the message to decrease food intake (our appetite is reduced) and our metabolic rate increases, breaking down fat and supplying us with energy. When it senses that leptin is low, then the brain slows down our metabolism so that we don't run out of fuel and die of starvation. Equally important, we will be hungry and want to eat.

Seems straight forward, doesn't it? Here is the paradox. Overweight and obese people have high leptin levels, so why don't their brains notify their bodies to amp up and burn more fat? Basically, this is because our bodies are tuned to lack of food. This is a problem that doesn't exist for most people living in the US. The problem here is "food everywhere". Constant eating yields constant messaging from fat cells. **The brain becomes leptin resistant even though there is more than enough leptin** (produced by more than enough fat).

The brain is not receiving the sufficiency signal to turn on fat burning. Instead, it receives the red light on the fuel gauge, slows

metabolism, and ramps up the hunger signal. As the Richardses comment, the brain doesn't see the body in a mirror. Instead, it gives an irresistible message of hunger, even of intense hunger.

A sure sign of leptin resistance is being unable to resist eating at night. Once leptin resistance sets in, the pancreas doesn't receive a signal to stop releasing insulin. This encourages the body to store calories as fat.

Furthermore, in the normal fat burning process, adrenaline is released, stimulation the fat cells to release energy. However, in the presence of leptin resistance, the adrenaline isn't used to burn fat. The fat cells become "numb" to the stimulation of adrenaline. This causes fat to accumulate around the middle. The heightened adrenaline also causes high blood pressure and sleep problems.

Although leptin resistance syndrome becomes a significant barrier to weight loss after age 30, increasing overweight among young persons indicates that leptin issues are now becoming common much earlier.

¹*Mastering Leptin* by Byron J. Richards, CCN and his partner and co-author Mary Guignon Richards was published by Wellness Resources Books in 2002.

Stress Eating

In *Mastering Leptin*, the authors bring a light to the reason we are driven to eat junk food when we are stressed. (Haven't you always wondered?) Stress causes high blood sugar levels (hyperglycemia). This revs the body up for action. We feel agitated and discomforted with no place to focus that energy. One way to calm down is to eat. The higher the concentration of calories in the food we eat, the more quickly the stress reaction diminishes.

As we eat, insulin levels increase, lowering our blood sugar. The fastest way to accomplish this is to eat a combination of fat and sweet: ice cream, rich cookies, or a candy bar. Eating such foods can settle our reaction in a matter of minutes.

More intense stress or more long lasting stress causes more severe hyperglycemia. In this condition, we are drawn to eat fatty salty foods: a bag of chips, a burger with fries, etc.

Eating junk food is a temporary fix for soothing uncomfortable feelings. In the long run, when we make junk food our drug, we pay with our health. Take a run or a walk. Do some stretching. Go up and down the stairs a couple of times. Work off the excess energy. Even some deep breathing and drinking a big glass of water can help.