

## Eating Fitness

### Timing is Everything

Who would have thought that achieving and maintaining a healthy weight might have as much to do with when we eat as it does with what we eat? A new discovery about how our bodies function shows that this is indeed the case.

Almost anyone can parrot the weight loss mantra "Eat less, exercise more". That is not going to change. The good sense of eating foods that are lower on the glycemic index is not going to change either. What may change is our idea about grazing, eating numerous small "meals" during the day, and snacking.

In a recent Harvard study, authors Cutler, Glaeser, and Shapiro pointed to extra calories from snacking as the weight gain culprit. They reported that the average number of daily snacks has risen by 60 percent since the early 70s. Just three cookies a day can account for a weight gain of 10-15 pounds in 20 years. Although most peoples don't think 20 years into the future, we only think of how much weight I can lose today. Cutting out the snacks is a good first step toward "eating fitness". Perhaps we ought to go back to the drawing board and give weight loss a look-see from a whole perspective.

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 array. Healthy weight- and health improvements which go beyond those bestowed by weight loss alone-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 of the bulk of intestinal bacteria as a digestive organ.

Leptin was soon discovered to be involved with insulin, with the cardiovascular system, immune function, reproductive 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." When the brain senses 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 importantly, we will be hungry and want to eat.

Seem straight forward, does not it? Here is the paradox. Overweight and obese people have high leptin levels, so why do not 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. In addition, because fat burning is slowed down, survival signals causes carbohydrates to be stored as fat.

Furthermore, in the normal fat burning process, adrenaline is released, stimulating 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.

### Follow The Rules

From their indepth study of current leptin research combined with personal experience and feedback from clients, Richards and Richards have developed the Five Rules. The bottom-line of the rules is to restore the body's sensitivity to leptin. Happily, this automatically leads to weight loss, particularly weight loss from the midriff. However, the most important aspect of following the rules is

that the body reestablishes the ability to efficiently produce energy from food.

When it comes to natural balance, timing is everything. The rules put the body back in sync. They are not rules for losing weight; they are rules to live by. Not only will following them normalize weight, doing so protects those without weight problems from gaining weight as they grow older.

### 🚦 The Five Rules

Rule 1: NEVER EAT AFTER DINNER.

Rule 2: EAT 3 MEALS A DAY, and DO NOT SNACK.

Rule 3: DO NOT EAT LARGE MEALS.

Rule 4: EAT SOME PROTEIN AT BREAKFAST.

Rule 5: REDUCE THE AMOUNT OF CARBS EATEN.

Richards and Richards promise that the Five Rules prevent and correct Leptin, insulin, and adrenaline resistance, fatigue, and mood problems. The end result of not undertaking the rules is the inevitable failure to reach and/or maintain goal weight. Because the rules impact our brains at a core survival level, they apply to nearly everybody. Exceptions include growing youngsters, elite athletes, and people with diabetes.

There is science (and good sense) behind each rule. Rule 1: Generally, finish eating three hours before bedtime, never go to bed with a full stomach, and allow 11-12 hours between dinner and breakfast. Surprisingly, our bodies use fat as a fuel in the hours just before we wake. About 9-12 hours after our dinner, our bodies access fat from the thighs, stomach and rear. The calories we burn during the day come directly that day's food intake or are already in the blood. The only exception of this is during intense exercise. (After 40 minutes aerobic exercise at a non-stressful heart rate causes fat stores to be metabolized.) If one eats before bed, the body is digesting, and leptin

signals the brain that no energy is needed. The fat burning mechanism never comes into play.

Within Rule 2, we learn that eating every 2-3 waking hours (snacking, grazing, and eating small meals) is counterproductive to having our goal weight. This is because during the first three hours after a meal, insulin is in charge of storing the calories from the food we have eaten. Clearly, it is impossible to lose weight during this operation. That is the reason the rule directs us to eat every 5-6 hours.

Even low calorie snacks stimulate insulin release, not to mention waiting an hour after a meal to eat dessert. In this case, fat burning either ceases or never gets started in the first place.

Some people may find it impossible to eat every 5-6 hours and still function. If this is you, eat four meals daily, every four hours. With regular exercise and some opportunity for fat burning to come into play, and health will improve. With time, the three-meal plan can be adopted without having energy crashes between meals.

Many children, teens, bodybuilders and athletes have a higher demand for calories to aid their body's growth and repair. They can break Rule 2 with impunity. That privilege tends to disappear after age 30.

Rule 3 says quit eating large meals. The object of this rule is to improve metabolic efficiency by not giving the body more fuel than it can use. Over filling the stomach is a well known stress inducer. In this context, habitual excess food at meals leads directly to leptin and insulin resistance. The amount of food eaten at a meal depends on the physical activity for that day. One of the easiest techniques for reducing meal size is to slow down food intake. It takes ten minutes for the brain to realize you are full. Allow 30-45 minutes to eat. Taste the food. Chew thoroughly. If you just can't slow down your eating, take a five minute break in the middle of the meal. Stop eating before you feel full. Not only will you feel more energetic (and more satisfied) with less food, calorie intake is subtly being reduced.

Eating a protein-based breakfast, per Rule 4, keeps the body in a calorie-burning mode. It supports blood sugar levels in such a way that late afternoon energy crashes are minimized. Energy crashes are frequently the result of eating a breakfast with too many carbohydrates and very little protein. If you are leptin resistant and eat a high carb breakfast (juice, cereal, pancakes, a bagel, toast), overeating becomes the norm, particularly at night.

Interestingly, although carbohydrate and protein each supply the body with 4 calories of energy per gram, their effects on metabolism are very different.

Comparatively speaking, it is easy for the body to utilize fat (9 calories per gram) and carbohydrate. These foods increase the liver's metabolic rate by a mere four percent. On the other hand, protein is a much more complex nutrient.

A high protein meal can increase metabolism by 30 percent for as long as 12 hours, the equivalent of a 3-4 mile jog! Protein also helps solve fluid retention problems. Increase protein slowly and add regular exercise to bring your protein power to the max.

Lastly, Rule 5 instructs us to reduce the amount of carbohydrate eaten. This means cut back not cut out the starchy and sugary carbohydrates. Taking the findings of the Harvard study about overweight and snacking a step further, Americans actually eat double the amount of carbohydrates that the body is able to metabolize. This causes a big imbalance in the insulin (fat storage) - glucagon (energy mobilization) hormones.

Too many carbohydrates confuse the natural ebb and flow of leptin. For example, if too many carbs are eaten at lunch, you may find yourself ravishingly hungry at dinner. An excess of carbs keeps the body from going to its fat reserves for energy. Plus, excess carbs even when they are fat free - are easily stored as fat.

This does not mean no carbs. Under the condition of insufficient carb intake, the thyroid turns off, electrolytes become deregulated, muscles dehydrate and weaken, growth hormone is not released correctly, the heart and the kidneys can become distressed, the digestive system doesn't work properly, fat is not burned efficiently, and one is left dissatisfied after eating. Carbs are essential. Richards and Richards recommend the "50/50 technique". Have a palm size piece of protein and match it with about the same amount of starch. In other words, meat or a veggie protein pattie get about the same size serving of bread, rice, potatoes, fruit, or desert. Eat all the vegetable produce you wish, going easy on the peas, corn, and cooked carrots. If you are going to eat dessert, skip the heavy starches in the meal (bread, rice, potato); otherwise, have only a bite of dessert.

Last word on the last rule is an easy way to determine if you are eating too many carbohydrates. Weigh in when you get up in the morning and then again before you go to bed. Compare. If, at night, you weigh more than two pounds over your morning weigh - and you followed rules 1-4 during the day - then, you have taken in too many carbs that day.

#### Supplemental Support

Various nutrients can support the body to overcome leptin, insulin, and adrenaline resistance, to lose weight, and to restore efficient energy production.

According to the Journal of the American Medical Association, the consequences of overweight are the worse than previously known, causing significantly reduced lifespan. Overweight at 40? Three years off your life.

Obese? Subtract 6-7.

Overweight and smoke? That can cost you 13 years.

Calcium: Calcium is able to counteract a particular brain signal (called agouti) which encourages appetite. Agouti causes metabolism to slow, resulting in weight gain. By lowering agouti with increased calcium intake, thyroid function and metabolism are improved. This only works with appropriate dietary restriction. It won't work if excess calories are consumed. Take 2000-3000 mg of calcium daily.

Vitamin D: This vitamin is a powerful inhibitor of leptin secretion. In addition, vitamin D is necessary to calcium absorption. Take 400-800 IU of vitamin D daily (including the amount in any multivitamin-mineral formula).

Pantethine: A coenzyme form of pantothenic acid, pantethine is the exact form used in metabolism. The supplement is useful in restoring the metabolism of fat. It does this by helping to make fat available for fuel. One recent study showed that six months of use resulted in significantly reduced abdominal fat as well as healing fatty liver disease. To get desired effects from this nutrient, take 600-900 mg daily.

Essential Fatty Acids: Unfortunately, extra pounds of fat result in an ongoing unhealthy inflammatory response by the immune system. Inflammation is not only painful, it causes premature aging (one of the reasons overweight people have reduced lifespans). Omega 3 oils (fish and flax) and gamma-linolenic acid (GLA from evening primrose, borage, and black current oils) can reduce inflammation. In addition, fish oils reduce insulin resistance and enhance glucose utilization. Blood sugar (glucose) fluctuations must be normalized to restore correct leptin function. Adding 3-9 grams of these oils to the diet can reduce excess inflammation and support weight loss.

CLA, conjugated linoleic acid: Over the last 20 years, intense research has been conducted on this nutrient by scientists at the University of Wisconsin. Richards and Richards state that it is one of the most powerful nutrients known to stop leptin resistance as well as reduce inflammatory signals. It can reduce leptin reduction by as much as 42



percent. This simultaneously increases fat burning. There are also indications that CLA supports growth hormone function, reduces nighttime food cravings, and hastens the weight loss process. The science behind CLA relates to its ability to reduce cancer, reduce hardening of the arteries, prevent diabetes, and reduce body fat. Once health is restored, the body no longer needs CLA. Meanwhile, recommended doses range from 3-6 grams per day. (Because CLA is an easily oxidized fatty acid, take it with vitamin E).

ALC, acetyl-l-carnitine: This amino acid has been found to help the brain correctly sense the amount of leptin being produced by fat cells, thereby overcoming leptin resistance. In addition, when taken before bed, ALC stimulates the production of growth hormone, the youth hormone. ALC has many other actions not related to weight loss. These include improved cognitive function, enhanced stress tolerance, and uplifted mood. Dosage ranges from 500-2500 mg daily. The most common dose is 500 mg 2 times daily.