



## Five Easy Steps to Weight Loss

### The Inflammation/Weight Connection

Weight loss through eating less and exercising more has been a resounding failure. Diets, whether they're low-calorie, low-fat or low-carbohydrate, all produce initial weight loss but do a poor job of maintaining leanness. If there's a way that science can help us, understanding and reducing inflammation may well be the key.<sup>1</sup>

Inflammation is part of the body's protective response to injury or infection. Recent research has linked heart attacks and strokes to microscopic inflammation of the blood vessels. Although inflammation produces many of the symptoms associated with being sick or injured, it is a necessary part of healing.

When inflammation is mild and chronic and produces few symptoms, it has a very different effect on your metabolism. Chronic low-grade inflammation makes your brain and body resistant to the normal effects of insulin and cortisol. In excess, either of these hormones can have a devastating effect on your attempts to lose weight. High insulin levels prevent the breakdown of fat. Cortisol actually causes fat cells to grow. Inflammation raises the level of insulin and cortisol, two hormones that actually cause your body to make more fat.<sup>2</sup>

Inflammation interferes with the effect of insulin on your muscles and is a major cause of insulin resistance. With insulin resistance, your muscles don't efficiently burn the sugar that circulates in your blood. As a result, your blood sugar starts to rise and your pancreas responds by releasing more insulin. High insulin levels prevent cells from breaking down fat, making it harder to lose weight through dieting.

As inflammation increases, cortisol increases. You may be familiar with cortisone, a drug used to relieve symptoms of inflammation like itching, redness or pain. Cortisol is our body's equivalent, secreted in response to stress. Cortisol naturally combats inflammation—but at a high price. It increases the amount of belly fat, causes fluid retention, muscle weakness, memory loss, high blood pressure, and further raises your blood sugar. The increase in blood sugar then stimulates a further increase in insulin, and the vicious cycle continues.<sup>3</sup> In medicine, this is referred to as "metabolic syndrome."

### Stress, Food Sensitivities and Weight

When we are stressed, our bodies shift into "fight or flight" mode as the body prepares to confront danger or flee from it. Adrenaline and other hormones such as cortisol flood our bodies. While stress is not entirely avoidable and can actually be beneficial by propelling us into action, most stress is not

useful and in fact is damaging. It is created in our mind by our perception and reaction to work, school, relationships and life in general. Many people are stuck in the “fight or flight” mode with their cortisol production in overdrive, wreaking havoc on their ability to lose weight.

There is abundant evidence that many cases of overweight are due to the inflammation caused by food sensitivities, and that when the allergens are withdrawn from the diet, weight falls to a normal level for the individual and remains there without any restrictions of the “safe” food.<sup>2</sup> Focusing on “low-fat” and “diet” processed foods may lower the calorie count, but these foods are typically pro-inflammatory, which explains why they don’t aid weight loss.<sup>3</sup>

### The Path to Permanent Weight Loss

Experts estimate that up to 80 percent of people have some form of food sensitivity. While you may have suspected that certain foods don’t agree with you, you may never have suspected that these foods are causing inflammation and could be making you heavier than you would be otherwise. It is possible that your weight problems could be solved permanently without counting calories by simply eliminating certain foods from your diet.

Whether fat causes inflammation or inflammation causes fat, one of the key factors that should to be addressed in a weight loss program is decreasing inflammation. And that means identifying and eliminating any foods to which you are sensitive.

Also, a full 43 percent of U.S. adults suffer adverse health effects from stress, according to an American Psychological Association (APA) study. According to the Study of Women’s Health Across the Nation, the greater the stress in a woman’s life, the greater her weight.

In 1954, Dr. Arthur F. Coca published his book titled, “The Pulse Test” and opened the door to the prevention and cure of a host of conditions, including weight gain. He learned that your heart rate increases after eating a food to which you are allergic, and he associated many conditions to the ensuing inflammation caused by the food.<sup>2</sup>

While there are many venues for stress reduction, there are only a few solutions for actually measuring stress on a daily basis. SweetBeat™ from SweetWater Health LLC, an iPhone app, provides daily and continuous feedback of your stress levels, whether at home or on the go. Our new version of SweetBeat features a food sensitivity test based on Dr. Coca’s pulse test that helps you to identify food sensitivities so that you can remove these from your diet. This may help you to experience weight loss success when combined with a sensible diet and moderate exercise.

It is apparent that by reducing stress and eliminating foods to which we are sensitive, we can create a lifestyle that sustains our desired health and weight.

### Five Easy Steps to Weight Loss Using SweetBeat

#### 1. Reduce Your Stress

- Do a five-minute SweetBeat session before you go to bed at night
- If your Stress score is orange or red, take another five minutes to do some deep breathing with the SweetBeat Relax screen.
- Do a 30-minute to one-hour SweetBeat session while you work at your desk or watch TV to discover what actions or thoughts cause your stress and cortisol levels to increase. Be sure to pay attention to your thoughts and do some deep breathing if your stress temporarily increases.
- Log on to your private MySweetBeat account to see your month at a glance. This enables you to see how well you are doing at keeping your stress under control. Be sure

2. Discover Food Sensitivities and Eliminate Offending Foods
  - Before you start using SweetBeat's weight-loss feature, please note the following important restrictions:
    - DO NOT test any food to which you know you are allergic. Continue to avoid these foods at all times.
    - Do not smoke during the five days you are using the test. Tobacco is an allergen to which virtually all people react, so it will mask the effect of food sensitivities. If you wish to lose weight, it would be best to avoid tobacco products entirely.
3. Do the pulse test for at least five days
  - Take your pulse first thing in the morning while lying down. You can do this using SweetBeat or take it manually. Be sure to count your pulse for a full minute. (For example: do not take it for 15 seconds and then multiply by 4. Take the full minute or results will not be accurate.) If you do a manual pulse measurement, enter the value into SweetBeat by pressing the "morning" button.
  - Right before each meal, run the meal sensitivity detection session in SweetBeat by pressing the "Meal" button. Once the initial pulse is taken, continue with your meal. Whenever you like, enter in the foods you are eating at each meal.
  - Take your pulse before you go to bed. You can do this using SweetBeat or you can take it manually. Be sure to count your pulse for a full minute. If you do a manual pulse measurement, enter the value into SweetBeat by pressing the "Bedtime" button.
4. Determine meals and food to which you are sensitive:
  - At the end of each meal, your pulse will automatically be taken at 30-, 60- and 90-minute intervals. If you have eaten a food to which you are sensitive, that meal will receive a red "X." If none of the foods are reactive, that meal will receive a green check mark.
  - Review the score for each meal and your daily score.
  - Review the foods eaten at each meal and start by identifying the most likely candidates:
    - Gluten
    - Dairy products (milk, yogurt, cheese, cream, ice cream, etc.)
    - Sugar
    - Vegetable oils and margarine
    - Red and processed meat
    - Alcohol
    - Artificial food additives such as MSG
    - Nuts
  - Remove suspect foods from your diet.
5. If your Stress score is orange or red, take another five minutes to do some deep breathing with the Relax screen.
  - Be sure to enter your age in the Personal Info section of SweetBeat. Your stress measurements depend on age and you will get a more accurate score if you add your age (see Figure 1).

**Figure 1.** Average HRV Score by Age

Age	Average HRV*
10-20	88
20-30	84
30-40	80
40-50	75
50-60	71
60-70	67
70-80	63
80-90	58
90-100	56

Source: "Twenty-Four Hour Time Domain Heart Rate Variability and Heart Rate: Relations to Age and Gender over Nine Decades," K Umetani, DH Singer, R McCraty, and M Atkinson, Journal of the American College of Cardiology, 1998;31;593-601.

\*HRV as shown in the SweetBeat application is derived from rMSSD in cited paper.

### How Does SweetBeat Measure Stress?

SweetBeat measures heart rate variability (HRV) to look at your nervous system and determine if you are in the cortisol-producing "fight or flight" mode. This is why you need to wear a heart rate monitor.

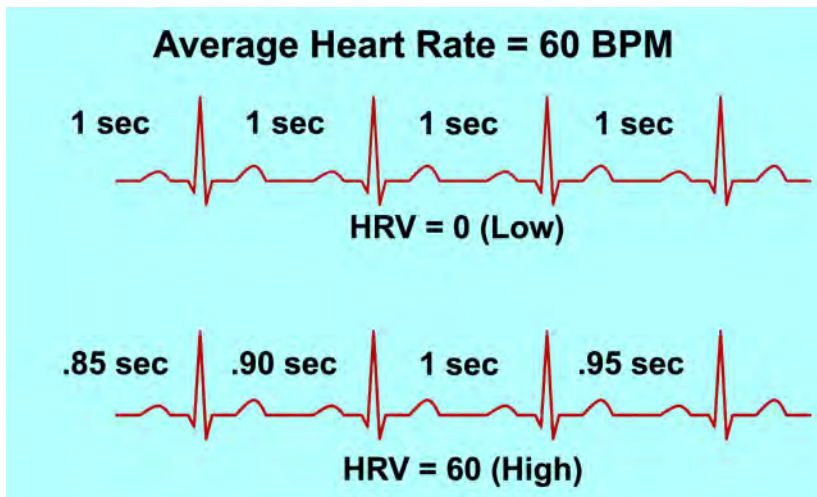
#### What Does the Deep Breathing Do?

Deep, slow breathing is known to balance the nervous system, reduce stress and the associated skin damaging cortisol. The SweetBeat Relax Screen has a long inhale and even longer exhale. This is known to even further the balancing effect.

### What is Heart Rate Variability?

HRV is the variation in the time interval between one heartbeat and the next. When we think of our heart rate, we generally think of a number between 60 and 90 beats per minute. This number represents an average heart rate. In fact, your heart rate changes from beat to beat. When you inhale your heart rate speeds up and when you exhale it slows down. So rather than referring to a fixed pulse of say, 60 beats per minute, the heart rate will actually vary between, say, 55 and 65 beats per minute. HRV is a measure of this naturally occurring irregularity in the heart rate.

**Figure 2.** Heart rate variability is the variation between heartbeats.



Source: SweetWater Health, LLC. HRV has been researched as a factor in heart health, stress, athletic training, emotional health, and fitness, to name just a few areas.

More than 25 years of clinical research has shown that when HRV is high, a person experiences low levels of stress and greater resiliency. When HRV is low, this is an indication of greater stress and lower resiliency.

The National Institutes of Health (NIH) have funded many studies on HRV, using HRV as a biomarker for disease or health. The NIH Clinical Center offers HRV monitoring to show patients how various stresses are affecting their bodies, and provide them with a biofeedback tool to help reduce stress by raising their HRV.

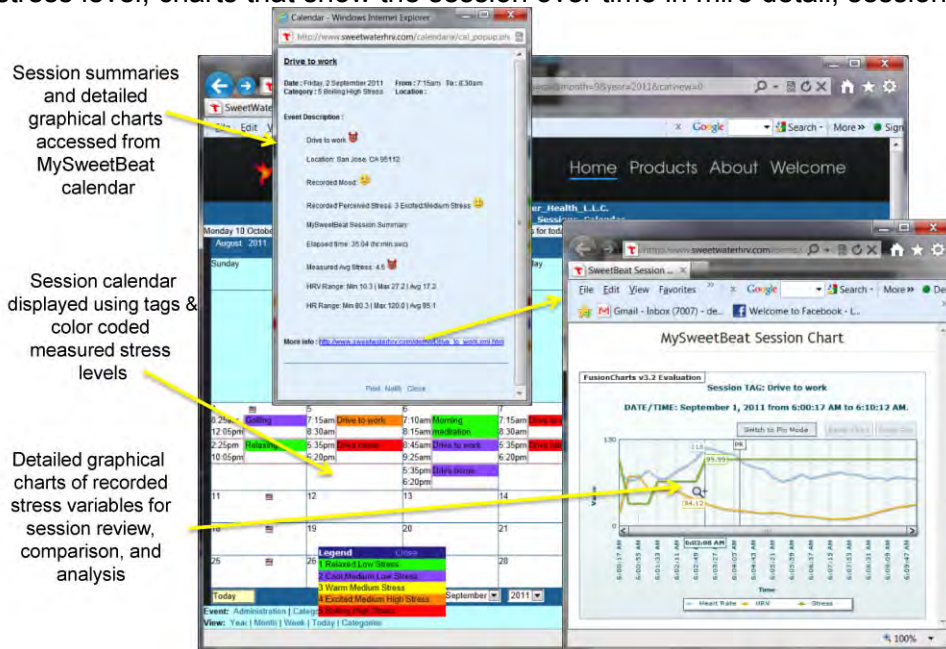
NIH is just one of the many institutions and individuals researching HRV and using HRV in the monitoring and treatment of patients. Mayo Clinic, Stanford University Hospital and Clinics, and Mount Sinai Medical Center and School of Medicine are among the many prestigious research centers studying HRV and using it in clinical practice.

### *SweetBeat Description*

In the past, HRV measurement required expensive hardware and software connected to your PC. Now SweetBeat, the stress management iPhone app from SweetWater Health, can measure HRV on your iPhone or iPad using off-the-shelf heart rate monitors.

The SweetBeat stress management system consists of the SweetBeat app and the MySweetBeat web portal. Sessions run on the app can be uploaded to a secure and private web portal for tracking and reviewing from any Internet-enabled computer or mobile device. Figure 3 provides a brief description of the SweetBeat app and Figure 4 shows some of the tracking tools available in MySweetBeat.

**Figure 4:** MySweetBeat tracking tools include a calendar with sessions color-coded by average stress level, charts that show the session over time in more detail, session summaries and more.



Source: SweetWater Health, LLC

## References

- (1) <http://fatresistancediet.com/leptin-weight-loss/67-inflammation-arthritis>
- (2) The Pulse Test, Arthur F Coca, M.D. 1956, <http://www.soilandhealth.org/02/0201hyglibcat/020108.coca.pdf>
- (3) <http://www.healthiertalk.com/surprising-connection-between-weight-gain-and-inflammation-4456>

Note: SweetBeat is intended for entertainment purposes only. It is not intended as a diagnostic tool.