

The Basic Principles of Body Composition

Your body, for the purposes of simplicity, can be divided into two types of substances: body fat and lean body mass. What we mean by body fat is pretty straightforward, it is just fat tissue stored in the body. Lean body mass means everything else in your body that is not fat (i.e., muscle, bones, organs, fluids, other tissues, etc.). While it is true that your body requires a certain amount of fat in order to function properly, the body can have excess amounts of fat that can lead to adverse health conditions. What this tells us is that it is important to maintain an ideal ratio between body fat and lean body mass in order to prevent such conditions from arising.

What is even more important to recognize is that even though you may not be over-weight, you could be “over-fat.” When your body has too little muscle compared to body fat, a condition called *sarcopenic obesity* can occur, which has been connected to chronic disease and accelerated aging. The most common source of sarcopenic obesity is obviously from a lack of exercise, which would maintain proper muscle mass. Have you ever seen people whose dieting solution was either to resort to anorexia, consume a meal-replacement diet drink or resort to some other food intake reduction method? Sure they will lose weight, but what type of mass is being sacrificed? That’s right, it’s muscle, not fat.

Lack of proper exercise is not the only cause of sarcopenic obesity.

Eating the right foods and supplementing are essential in maintaining a healthy body composition and increasing longevity.

How do you measure your body composition? There are a number of methods that involve measuring the skin fold thickness of your body, or your hip size compared to your waist, etc. The most simple, and accurate, method that we have found is called *BioImpedance Analysis*. The analysis is performed by a machine that sends a very small electric current through your body and measures the resistance of the different substances within it.

So come in to our clinic and we will give you an exact breakdown of your body composition. With this analysis we can create an entirely personalized weight-loss program that your body can handle and will turn out the greatest results for you.

This analysis will tell you how much of your body is cellular mass, how much is extra-cellular mass, how much is fat-free mass, how much of your body’s water is within and outside of your cells, as well as give you your total fat mass and basal metabolic rate.

The process is entirely non-invasive and painless. It is also one of the most accurate ways to track your progress along any given weight-loss, diet, or exercise program.

Insulin Resistance

Insulin is a hormone secreted by the pancreas, which performs a variety of functions, among which include

calibrating blood sugar levels, regulating fat metabolism and it also transports glucose (blood sugar) to the cells where it is used to make energy. Your pancreas responds to the foods you eat with appropriate amounts of insulin. There are certain foods that create a high insulin response compared to other foods. The foods that create higher levels of insulin are called **high glycemic index (GI) foods**. When your insulin levels become high enough, your body not only converts the glucose into energy, but also stores all of the now excess energy in other parts of the body in the form of fat. In a sense there are certain foods that “create fat” in the body. These foods, if eaten regularly, and often enough, can result in unwanted weight gain.

Such foods include simple-carbohydrates and foods rich in sugar. This includes such food as: candy, cookies, corn or potato chips, white bread or bagels, white rice, sweetened cereals and soft drinks.

It is in the interest of anyone who is trying to lose weight to keep your insulin levels low. When insulin levels remain balanced, your body, instead of creating fat, burns it more efficiently instead.

People whose insulin levels are at higher levels than normal can eventually develop a condition called “syndrome X” or “insulin resistance syndrome,” which often makes its presence known through such symptoms as high cholesterol, increased body fat, and high blood pressure. If left unchecked for too great a time, this can also lead to type 2 diabetes, strokes, polycystic

ovary syndrome, or Alzheimer’s disease.

Insulin resistance is so named because the cells in one’s body have become resistant to insulin, preventing it from bringing energy into the cell. In response, the pancreas must produce even more insulin in order to maintain balance within your body’s systems. People diagnosed with insulin resistance are generally overweight and cannot lose this weight easily. They can also have mood swings as well as a decrease in muscle and lean body mass.

Insulin resistance is not unmanageable. In fact, it is almost entirely under your control. It can be easily managed with the proper diet, supplementation and exercise. As I touched on earlier, foods that produce a high insulin response are called high GI foods. As long as you concentrate your diet towards these low GI foods, you can develop and maintain healthy insulin levels.

The easiest way to test for high insulin levels is to take a blood test. We offer this service at our clinic. Just call the number on the last page of this issue to schedule an appointment to have your blood taken for an insulin test.

There are a number of substances that play a major role in healthy body composition. One of the most important and essential is Conjugated Linoleic Acid (CLA). This is an unsaturated fatty acid that has long been considered essential to the human diet.

The top ten low GI foods include:

- Apples
- Berries and cherries
- Barley
- Grapefruit
- Legumes (lentils, beans, peanuts)
- Nuts (almonds, walnuts, soynuts)
- Oatmeal (unsweetened)
- Green peas
- Tomatoes
- Unsweetened plain yogurt

There are two different types of CLA that play very different, but equally important roles in harmonizing your body composition. The first type of CLA assists the body in improving muscle growth. The second prevents something called lipogenesis.

Lipogenesis is a medical term describing the storage of fat in a type of body tissue that surrounds your organs and resides also in the lowest layer of your skin.

There are over 200 studies showing the positive health effects of CLA in not only weight-loss, but also helping fight against diabetes, atherosclerosis (hardening of the arteries) and even cancer!

In studies geared towards finding its benefits for weight-loss programs, double-blind placebo controlled studies used a combined form of CLA that contains the two different types. Those subjects taking the CLA often show an increase in lean muscle mass and a decrease in percentage body fat compared to placebo group. The subjects taking CLA also reported less fatigue,

dizziness and nausea than those on the placebo.

Researchers believe that CLA helps block fat cells that are in the body from filling up with fat by interfering with a fat-storing enzyme known as lipoprotein lipase as well as by increasing the sensitivity of cells to insulin. CLA is also believed to help burn fat by speeding up muscle metabolism and helping increase lean muscle mass. The more muscle you have, the more calories your body uses in order to function, thereby speeding up the fat burning process.

Besides CLA, there is another effective and natural substance that can assist you in losing weight without compromising your health. Hydroxycitric Acid (HCA) is a natural extract from the *Garcinia Cambogia*, a fruit tree found in South Asia. The fruit of this tree looks like a small pumpkin about the size of an orange.

There are currently more than 70 scientific papers that delve into the effects and benefits of the *Garcinia* fruit and HCA. In one published study, when HCA was combined with a niacin/chromium compound, weight-loss rates tripled in a two - month period compared to the placebo group.

HCA works by temporarily inhibiting an enzyme called ATP-citrate lyase, which is responsible for converting carbohydrates into fat. In essence, HCA stops your body from producing fat temporarily.

HCA can also reduce your appetite. How our body knows it is full is through the liver. During and after meals, calories that are not

immediately used for energy are stored in the body in the liver and muscles as glycogen, which is a ready source of energy for the body. When glycogen stores become filled, monitors in the liver send satiety signals to the brain indicating we are full. Since HCA is preventing fat production, the liver is producing more glycogen, which creates a greater "full" signal to the brain. This can also lead to more energy since the liver is producing more of it in the form of glycogen.

HCA from the Garcinia plant has been shown to be very safe for adults. Children and pregnant women, however, should avoid taking HCA, as they require fat production and synthesis for proper healthy development.

Though losing weight and obtaining a healthy body composition can be very healthy for your body, there are some things that you should be aware of and understand what to do to prevent them from effecting you negatively.

Body fat is a primary location for the body's storage of toxins that have been processed by the liver. As your body breaks down its fat as you are going through your weight-loss program, these toxins are then re-released into your system and re-processed by the liver. Since these toxins have already been processed once, they go into the liver as an entirely new type of toxin and these can be more difficult to process than it was originally. The more fat you break down, the more toxins are released and the more stress you may be putting upon your liver without realizing it!

This is by no means a difficult situation to handle. The liver has two different detoxification phases that are responsible for processing the toxins that enter the body. It is very important to keep both of these phases in top condition; otherwise toxins can enter your body and wreak havoc on your body. We have two products that assist the liver in processing toxins more easily.

BodyKlar™ is a meal replacement powder that you make into a shake beverage by adding juice or other non-carbonated fluid. This is an exceptionally effective product that assists your liver's Phase I detoxification pathways. It also tastes great and many of our clients have had great success and benefits from using it.

Liv-Tox II™ is a capsule containing a specially formulated combination of vitamins, trace minerals and herbs that together give your Phase II detoxification pathways a healthy push.

All of the products and services we mentioned are available through our clinic and NutriKon™ supplement line. To have these products shipped right to your home, call our number below and we will be more than happy to serve you.



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