

The Science of Weight Loss

The Science of losing weight is really very simple. Now hold up! Wait a minute! Before you turn off your computer, role your eyes, suck your teeth, mutter 'oh please, you don't know what you're talking about' or any other platitude of outrage. Hear me out.

I did not say losing weight is easy. In fact, for most people quite the opposite is true. What I am talking about is the science of losing weight.

What Science am I talking about? Science is defined as the knowledge of commonly accepted truths or principles. So what is the commonly accepted truth or principle that leads to weight loss? Well, your body has to burn more energy or calories than it takes in (remember calories are units used to measure the energy stored in foods). In other words, calories out must be greater than calories in.

That's it! No, $E = mc^2$, no quantum theory, no mind bending physics or chemistry. Simply eat fewer calories than you burn. And, walla! Off goes the weight.

So why then do we have so much trouble losing weight? Let's look at that equation again. Calories in = Calories out. If this equation is true for you, then you should not lose or gain weight. In order to lose weight you have to change this equation in one of three ways. You can decrease the energy in. You can increase the energy out. Or, you can do both. Let's take each in turn.

It is helpful to starts with the amount of calories you use, or energy out. We use energy or calories simply to live. Energy is required for our hearts to beat, lungs to breathe and for our bodies to do the million of things we are not even aware of in order to stay alive. Dietitians call this your basic energy expenditure. This amount varies from person to person due to a number of factors including size, age, gender, amount of muscle, and genetic make-up. If you are bigger, there is simply more of you to burn energy. The process

of growth and development requires a lot of energy. Therefore, young people who are still growing use more energy than an older person of the same size. A person who is more muscular will use more energy because muscle burns more energy than fat. And since men tend to have more muscles than women, this explains why they tend to use more energy than women.

Due to genetic or inherited factors, some people may have faster rates of certain body functions, such as a faster heart rate. These higher rates require more energy use.

In addition to the basic energy expenditure, more energy is used when the body has to repair itself either after an injury such as extensive burns or after muscle building exercises. Then, even more energy is used based on your level of activity. A football player will burn more energy than a fan watching him play.

The overall amount of energy you burn in a day is called your metabolic rate. Knowing your metabolic rate can help you to determine how much food you are able to eat and still lose weight. A dietitian can help you to do this calculation. It is because everyone has a different metabolic rate that you might eat the same food as your friend, yet you gain weight and she doesn't. But this is true of many areas of life. Remember that guy in the back of your math class who was half asleep most of the time but aced all the exams. You, on the other hand, sat in the front row, took plenty of notes, burn the midnight oil and still needed a bonus question to make an A. The lesson here is that you had to work harder but you still made an A. Similarly, you might have to work harder than your friend but you too can lose weight.

While some of the calories you burn are beyond your control, you can increase your metabolic rate by increasing your level of activity and thus, the amount of energy out. However, all activities are not created equal. Aerobic exercises such as walking or running will cause you to burn more calories while exercising but weight

training will increase your metabolic rate even after exercising. And ladies, please! A little weight training for a few minutes a day will not make you look like Xena, The Warrior Princess. That requires endless hours in the gym. Guys wish it were that easy.

In contrast to the calories out, you have total control of the calories you put into your body. An effective strategy to reduce the calories you take in requires a decrease in the amount of food and a carefully selection of the kinds of food you eat. It doesn't matter how healthful the food, if you eat too much of it you will gain weight. Again, all foods are not created equal. Some foods have more calories per serving than others. A dietitian can be very helpful in sorting these out for you. Then there are foods which require you to use more energy just to digest them. Proteins fall into this category. Be careful when decreasing your caloric intake. A drastic reduction in your daily calorie in can be counterproductive. If you decrease the calories in your diet too rapidly, the body senses this as a threat and goes into survival mode. It slows down your metabolic rate and sends out signal to stimulate your appetite. And when you do eat, more of it is stored as fat. Not what you want. The trick is to reduce your calories slowly enough to evade your body's alarm system.

Finally, the most effective strategy to lose weight and maintain that weight loss over a long period of time is a combination of increased calories out and decreased calories in. Increasing calories out would allow you to be less restrictive in your diet and, therefore, increase the likelihood of sticking to it. In addition, careful selection of food, whether it's foods that require you use more energy to digest them or foods with less calories per serving, can help you to feel satisfied yet lose weight.