

Body Composition

Body Composition: The most important measurement in your quest for a better body. By Craig Bymoer of edu-fit.ca March 2008

The quest for the perfect body has at one time or another been at the forefront of many people's minds. People strive to achieve their ideal weight for a number of reasons. For some, this can include fitting into that pair of jeans that used to fit two years ago to being able to wear a bikini by the poolside in the summer without feeling too self-conscious. For others, vanity does not play a significant role because more people readily acknowledge that science has proven that staying fit and within ideal norms for weight based on a person's body type can stave off a number of debilitating diseases and problems that include: cardiovascular disease, abnormal blood fats, erectile dysfunction, low testosterone, blood clotting problems, atherosclerosis, cancer, type 2 diabetes, hypertension, back pain and whole host of other potentially deadly and deleterious conditions. Whatever your reason for embarking on an exercise program the choice to do so will probably entail the addressing of a number of key areas including but not limited to: cardiovascular exercise, resistance training, flexibility, and nutrition. And for those of you who fit into the first category this journey will mean striving to lose weight as your ultimate goal. And for good reason as you would have to have lived on the moon for the last twenty years to not know that studies over the last couple of decades have unanimously shown that as a nation we are getting fatter. However, many people are doing themselves and their bodies a huge disservice by not being careful as they try to strip their bodies of that unwanted flab. This is because we have also been blessed with a very important tissue that is fat's super hero counterpart otherwise known as muscle. The quest for weight loss must take into account not only fat loss but also muscle gain or maintenance for that matter. Depending on who you are will determine your want need or desire to have more muscle and less fat. Some people have a goal to lose fat - for some this can be tantamount to a great deal of fat and "tone" as they say. Toning really is a misnomer in that all you are doing is either losing fat and maintaining muscle or losing fat and realizing a gain in muscle. This may come as a shock to some as many people tell their friends or trainers that, "They don't want to get all big and have larger muscles - just lose the fat". Those same individuals are shocked and amazed to find out that even the most ardent natural bodybuilder will have a hard time adding 6-10 pounds of lean mass in one year. In fact, this would be considered a major coup. Yet for others the quest is about putting on large amounts of mass and limiting fat accumulation. Either way you will be realizing a discernible difference in overall body composition (% Body fat). And whichever category you fit into everyone must strive to maintain or stave off muscle loss at all costs. This is because muscle is a metabolically active tissue that will aid us in our quest to rid ourselves of excess adipose (fat) tissue. Muscle burns calories to move your skeleton through space as well as maintain itself. Muscle mass is a contributing factor for the improvement of musculoskeletal health and the enhancement of movement capabilities. (Murcell, 2003) So we must pay close attention to the amount of muscle that our bodies possess. During our lifetime our bodies will accrue a specific amount of muscle related to the activities we partake in on a daily basis, the type of nutrition we consume and also genetics. We need this muscle in order to be able to carry out our day today activities for the remainder of our natural born lives. And in fact, our bodies will already do us a big disservice by losing some of this muscle as we age if we don't use it. The process has come to be known as sarcopenia or age related muscle loss. In John Berrardi's book *The Metabolism Advantage*, he states that, "Researchers have determined that, starting between the ages of 25 and 30, most people will lose roughly 5-10 pounds of muscle with each decade of life." A recent study in *The International Journal of Sports Medicine* concluded that, "This can mean a loss of 20% of your total muscle between the ages of only 40-60." To further compound the situation Berrardi states, "The average person who becomes less active and consequently loses muscle will experience a 20-25% reduction in 24 hour metabolism (measured as the amount of energy your body burns in a 24 hour period) by age 65." He then goes on to note that, "Scientists have estimated that the RMR (the part of your metabolism that accounts for 60-75 percent of all the calories you burn each day) is highly dependant on muscle mass. In fact, 75-80 percent of your RMR is determined by your muscle mass. The more muscle you have, the higher the RMR. The less muscle you have the lower the RMR." These findings would suggest that our muscle plays a critical role in our fat loss efforts. And we need to do everything that we can to counter the effects of age related muscle loss. Fortunately, studies have unanimously shown that you can stave off or even reverse this process of sarcopenia with proper adherence to exercise, nutrition and supplementation. However, this can only be of any benefit if one does everything possible to maintain, keep or gain muscle mass for that matter. And the only way that a person will ever really know what is happening with their body is to track or monitor changes in body composition. The need to keep an eye on our body composition is apparent and obvious. However, keeping track of body composition has proven in the past to be quite a challenge. This is because not a lot of facilities or gyms have the technology to track body composition. This is steadily changing and more and more facilities are equipping themselves with one form or another of a body fat measurement tool. Let's take a look at a few of these methods: 1. Bioelectric Impedance: A machine is used to measure an electric signal as it passes through fat and lean body mass. The current is resistant to a higher fat content though. 2. Near Infrared Technology: Infrared light is directly shone on to the skin (usually the bicep area) Fat will absorb the light while lean mass will reflect the light. Reflected light is measured by a sensor and then transmitted to the computer and then translated into a percentage of body fat. This method is fairly accurate. 3. Hydrostatic weighing: The dry weight of the person is first recorded. Then the person is submerged into a tank whereby all residual volume is expelled from the lungs and they must sit still and motionless while under water weight is determined. This method is accurate but is for some inconvenient and also not an easy service to locate. 4. Dual Energy X-Ray Absorptiometry (DEXA): X-Ray energies are used to determine bone mineral, muscle, and measure body fat. This method is highly accurate. You can also determine limb percentages as well as that of the torso or body. Something that none of the other measurements can provide. Until recently, this method was viewed as inconvenient and time consuming; however, companies like

BodyComp atBodyComp.ca have changed these perceptions by providing a relatively costeffective and mobile service that is very convenient. People should strive to take advantage of all these methods that are now readily available to them. Setting goals is a part of any successful exercise program. Using bodyfat measurements can be an excellent benchmark for setting realistic and tangible goals. Likewise, you can make sure that your endeavors have you on the right track and that you are losing only fat and not precious muscle. For the most part changes in our body weight and/or composition happen slowly. So a person really only need check their body fat once every month or two. As a personal trainer who has been regularly tracking clients body composition for over a decade I have become fond of the DEXA method. Besides being the most accurate method of the four it is also the only one that allows you to track individual limbs and the torso as well. Thus, discernible changes can be seen in the right arm vs left, left leg vs right, or the abdomen for that matter. Furthermore, the price has come down significantly from what it was 5 years ago which allowed me to switch over from using the Hydrostatic method. Not a lot of trainers and fitness enthusiasts use this invaluable tool as part of their regular tracking methods; however, I have always felt that this is a grievous error. Everyone knows that the tale of the tape measurement can be as misleading as using the scale. This is because both of these more commonly used tools do not and cannot take into account body composition. Recently, the American Council on Exercise announced its top fitness trend predictions for 2007 that included: accountability and measurement focused programs. You spend a lot of time, effort and for some money in your attempts to mould your body into a different new you. Make sure that your efforts are in fact paying you dividends. Think of all those extra calories that will be burned during your lifetime as a result of your keeping a watchful eye on your precious lean muscle mass! References: Berrardi John., The Metabolism Advantage: an 8 week program to rev up your body's fatburning machine-at any age,(Rodale Inc. 2006) International Journal Sports Medicine, 28: 815-822, 2007 Murcell, T.J.(2003) Sarcopenia: causes, consequences, and preventions.