Body Composition

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

The quest for the perfect body has at one time or another been at the forefront of manypeople's minds. People strive to achieve their ideal weight for a number of reasons. For some, this can include fitting into that pair jeans that used tofit two years ago to being able to wear a bikini by the poolside in the summerwithout feeling too self conscious. For others vanity does not play asignificant role because more people readily acknowledge that science hasproven that staying fit and within ideal norms for weight based on a person'sbody type can stave off a number of debilitating diseases and problems that include: cardiovascular disease, abnormal blood fats, erectile dysfunction, lowtestosterone, blood clotting problems, atherosclerosis, cancer, type twodiabetes, hypertension, back pain and whole slough of other potentially deadlyand deleterious conditions. Whatever your reason for embarking on an exerciseprogram the choice to do so will probably entail the addressing of a number ofkey areas including but not limited to: cardiovascular exercise. resistancetraining, flexibility, and nutrition. And for those of you who fit into thefirst category this journey will mean striving to lose weight as your ultimategoal. And for good reason as you would have to have lived on the moon for thelast 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 peopleare doing themselves and their bodies a huge disservice by not being careful asthey try to strip their bodies of that unwanted flab. This is because we havealso been blessed with a very important tissue that is fat's super herocounterpart otherwise known as muscle. The guest for weight loss must take intoaccount not only fat loss but also muscle gain or maintenance for that matter. Depending onwho you are will determine your want need or desire to have more muscle andless fat. Some people have a goal to lose fat- for some this can be tantamountto a great deal of fat-and 'tone' as they say. Toning really is a misnomer inthat all you are doing is either losing fat and maintaining muscle or losingfat and realizing a gain in muscle. This may come as a shock to some as manypeople tell their friends or trainers that, "They don't want to get all big andhave larger muscles-just lose the fat&rdguo;. Those same individuals are shocked andamazed to find out that even the most ardent natural bodybuilder will have ahard time adding 6-10 pounds of lean mass in one year. In fact, this would beconsidered a major coup. Yet for others the quest is about putting on largeamounts of mass and limiting fat accumulation. Either way you will be realizinga discernible difference in overall body composition (% Body fat). And whichevercategory you fit into everyone must strive to maintain or stave off muscle lossat all costs. This is because muscle is a metabolically active tissue that willaid us in our quest to rid ourselves of excess adipose (fat) tissue. Muscleburns calories to move your skeleton through space as well as maintain itself. Muscle mass is a contributing factor for the improvement of musculoskeletalhealth and the enhancement of movement capabilities.(Murcell, 2003) So we must pay close attention to the amount of muscle that our bodies possess. During ourlifetime our bodies will accrue a specific amount of muscle related to theactivities 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, ourbodies will already do us a big disservice by losing some of this muscle as weage if we don&rsquo:t use it. The process has come to be known as sarcopenia or agerelated muscle loss. In John Berrardi's book The Metabolism Advantage, hestates that, " Researchers have determined that, starting between the ages of 25and 30, most people will lose roughly 5-10 pounds of muscle with each decade oflife." A recent study in The International Journal of Sports Medicine concludedthat, "This can mean a loss of 20% of your total muscle between the ages ofonly 40-60." To further compound the situation Berrardi states, &ldguo; The averageperson who becomes less active and consequently loses muscle will experience a20-25% reduction in 24 hour metabolism (measured as the amount of energy yourbody 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 onmuscle mass. In fact, 75-80 percent of your RMR is determined by your musclemass. The more muscle you have, the higher the RMR. The less muscle you have the lower the RMR. &rdguo: 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 relatedmuscle loss. Fortunately, studies have unanimously shown that you can stave offor even reverse this process of sarcopenia with proper adherence to exercise, nutrition and supplementation. However, this can only be of any benefit if onedoes 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 tokeep an eye on our body composition is apparent and obvious. However, keepingtrack of body composition has proven in the past to be quite a challenge. This because not a lot of facilities or gyms have the technology to track bodycomposition. 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.BiolectricImpedence: A machine is used to measure an electric signal as itpasses through fat and lean body mass. The current is resistant to a higher fatcontent though. 2. NearInfrared Technology: Infrared light is directly shone on to the skin (usuallythe bicep area) Fat will absorb the light while lean mass will reflect thelight. Reflected light is measured by a sensor and then transmitted to the computer and then translated into a percentage of body fat. This method isfairly accurate. 3. HydroStatic weighing: The dry weight of the person is first recorded. Then theperson 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 isdetermined. This method is accurate but is for some inconvenient and also notan easy service to locate. 4. Dual EnergyX-Ray Absorptiometry (DEXA): X-Ray energies are used to determine bone mineral, muscle, and measure body fat. This method is highly accurate. You can alsodetermine limb percentages as well as that of the torso or body. Something thatnone of the other measurements can provide. Until recently, this method wasviewed 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 trive 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 bench mark for setting realistic andtangible goals. Likewise, you can make sure that your endeavors have you on theright track and that you are losing only fat and not precious muscle. For themost part changes in our body weight and/or composition happen slowly. So aperson really only need check their body fat once every month or two. As apersonal trainer who has been regularly tracking clients body composition forover a decade I have become fond of the DEXA method. Besides being the mostaccurate method of the four it is also the only one that allows you to trackindividual limbs and the torso as well. Thus, discernible changes can be seenin 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 agowhich allowed me to switch over from using the Hydrostatic method. Not a lot oftrainers and fitness enthusiasts use this invaluable tool as part of theirregular tracking methods; however, I have always felt that this is a grievouserror. Everyone knows that the tale of the tape measurement can be asmisleading as using the scale. This is because both of these more commonly usedtools do not and cannot take into account body composition. Recently, the American Council on Exer cise announced its top fitness trend predictions for 2007 that included: accountability and measurement focused programs. You spenda lot of time, effort and for some money in your attempts to mould your bodyinto a different new you. Make sure that your efforts are in fact paying youdividends. Think of all those extra calories that will be burned during yourlifetime as a result of your keeping a watchful eve on your precious leanmuscle mass! References: BerrardiJohn.. The Metabolism Advantage: an 8 week program to rev up your body's fatburning machine-at any age,(Rodale Inc. 2006) InternationalJournal Sports Medicine, 28: 815-822, 2007 Murcell, T.J. (2003) Sarcopenia: causes, consequences, and preventions.