Significance of Measuring Body Composition for Health and Fitness

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Understanding Body Composition

Body composition is a classification of the amount of stored fat in proportion to lean mass. Fat is an essential component of our bodily system. We need the right percentage of fat, also known as essential fat, to let our bodies function correctly. The stored fat in our bodies is the extra fat deposited under our skin or around our stomachs and hips. For a body composition to be termed healthy, our stored body fat should be the right percentage of our fat-free lean mass, i.e. the mass of our bones, organs, and tissue.

Health Implications of Body Fat Levels

Because of intense exercise, athletes have less stored body fat, which may benefit them in their sport, but usually having a very low body fat percentage leads to health problems. For female athletes who have a lower body fat percentage, it can cause injury or other issues such as amenorrhea, reduced bone mass, eating disorders, and an augmented risk of fractures and osteoporosis. High body fat, on the other hand, requires changes in lifestyle to decrease it to improve one's health, well-being, and performance, reducing many health risks. Body composition tests are important for one to make necessary changes to bring it up or down to a suitable level.

Importance of Measuring Body Fat

Knowing one's total weight does not provide an accurate picture, as people can have the same body weight but have totally dissimilar compositions or types of bodies, thereby being prone to different health risks. Measurement of body fat puts your weight into perspective, without which it is difficult to interpret the body's condition. The body fat proportion needs to be maintained appropriately to avoid illness. Body fat, if maintained, significantly impacts cholesterol levels – increasing the good cholesterol that helps remove the damaging LDL, reducing the artery-clogging cholesterol in the bloodstream, and putting less stress on the heart. Knowing what our weight is comprised of is more important than knowing one's total weight. Some indexes may interpret a woman as overweight, but if she maintains a healthy body fat percentage of 25%, she has nothing to worry about.

Methods of Measuring Body Composition

Body composition is measured in a number of different ways; some are precise, while others provide a rough estimate. Most calculation methods that one can find online require measuring the waist size, hip size, and other variables such as height, gender, or weight to estimate body composition. Cloth tape is used to measure the belly and neck of men, as well as the waist, hips, and neck of women. Trying a US Navy-approved measuring calculator online using cloth tape, my results came out at 27.7%. As part of the study, I tested my body composition using a more accurate test method. A DEXA or Dual Energy X-ray absorptiometry machine was available at the Muscle Metrics Gym at Leawood, Kansas. The test came out at 28.5%, indicating that there was a difference in the accuracy of the tape-based measurement from the X-ray-based measurement. It is worth investing in a more accurate method of measuring body composition to set a realistic health goal. In the manual tape-based method, a lack of repeatability in the tests is present, as it is difficult to find the same spot again and take measurements. More advanced and precise tools to measure body composition include the BOD POD, DEXA, the BIA, and the Skinfold. Still, each comes with its own advantages and disadvantages in providing an accurate result.

BOD POD and Bioelectrical Impedance Analysis

The BOD POD, for example, works just like the underwater weighing method but measures air displacement instead. The results take seconds to obtain. An egg-like pod is used where the subject is placed inside to measure the volume of air he/she displaces. The pod measures the overall body density, which can help calculate the body fat composition. It is convenient and more accurate than BIA, but still prone to the same errors as underwater weighing. The second method is the BIA or the Bioelectric impedance analysis. It is the most common method popularly used in fitness centers. It works by passing a small electric current through the body, calculating resistance. The time taken for the current to travel from one point to the other predicts how much more lean mass and less stored fat the subject has. Its accuracy is stated at ±3% of the actual body fat, but it has been seen to overestimate body fat for many people who have used BIA and other more accurate methods.

Skinfold and DEXA Assessment Methods

The skinfold method uses calipers that pinch parts of the skin. This method calculates composition based on the relationship between hypodermic fat and total body fat to estimate it based on the amount of fat underneath the skin. Although it is known to produce good results if properly done, the accuracy may vary since it cannot measure visceral fat properly. The fact that people’s skin can pinch differently also affects its accuracy. The dual X-ray system, DEXA, was the one I chose for my own test, and it is generally considered the favored method for fat composition testing. It produces accurate results by directly evaluating the composition, but sometimes DEXA machines tend to produce inaccuracies when measuring obese people. It has a 3-5% precision error and sometimes

needs a doctor’s prescription to get a scan done. Nonetheless, it is considered the most accurate among other methods, but it can be costly (Fewtrell, 2006).

Benefits of Body Composition Testing in Fitness Programs

There are several advantages of recommending body composition tests for our clients in health and wellness centers. The notable advantage is that we can tell them how their hard work pays off. According to the test reports, the trainers can use the data to design specialized workouts to meet the client’s stated goals, with progress available as proof. As the trainer and client observe the results together, one can guide them better on which part to focus more on to achieve their goals. This lays the foundation for a good personal relationship with the client, allowing the trainer to give them individualized attention to achieve their particular goals. Since not all exercise programs are suited to each person, body composition assesses the effect of a particular program or helps guide the client to a new or better option more suited for them. It opens up opportunities to build trust and loyalty with the client. It enhances the trainer’s community reputation, subsequently attracting new members to the center.

References

Fewtrell, J. C. (2006). Measuring body composition. *Arch Dis Child , 91* (7), 612-617.