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FITNESS FACTS

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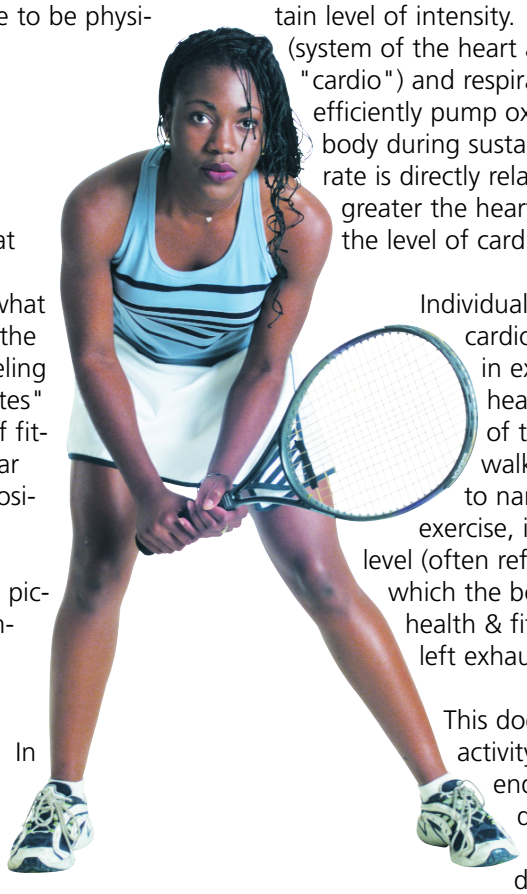
In the world of diet and exercise, we oftentimes hear the term "fitness" used to describe everything from equipment to personal trainers to a "way of being." We've become accustomed to using the word "fitness" as a part of our permanent pop culture vocabulary---but do we really know what it means? What exactly is meant by the term physical fitness? Furthermore, as some health and fitness experts question, is it necessary for everyone to be physically fit?

What is physical fitness?

Physical fitness, as defined by the U.S. Department of Health & Human Services (USHHS), refers to "a set of attributes that people have or achieve that relates to the ability to perform physical activity." It is what enables us to meet both the ordinary and the unusual challenges of daily life without feeling completely exhausted. This "set of attributes" is often referred to as the 5 components of fitness: cardiorespiratory endurance, muscular strength, muscular endurance, body composition and flexibility.

Using this definition, in order to get a true picture of a person's overall fitness, all 5 components must be considered together. In this way, overall fitness is more than just being able to lift a specific amount of weight or run 5 miles without stopping. In fact, these activities only address single fitness areas whereas overall physical fitness evaluates all of the components as one big picture.



What is "functional fitness?"

Some experts question if it is necessary for everyone to be physically fit. Functional fitness addresses this argument by promoting practical exercise that works the body the way it moves in real life. Functional fitness trains our bodies to better perform the physical tasks encountered in everyday living. This is an interesting topic and a valid view-point we'll discuss more in another fact sheet. Getting back to USHHS' definition of physical fitness, let's take a more in-depth look at each of the 5 components of fitness.

What is cardiorespiratory endurance?

Cardiorespiratory endurance is the ability to participate in a physical activity for a length of time while maintaining a certain level of intensity. This requires the body's circulatory (system of the heart and blood vessels which we refer to as "cardio") and respiratory (lungs) systems to effectively and efficiently pump oxygen-rich blood to fuel the cells of the body during sustained physical activity. In this way, heart rate is directly related to cardiorespiratory endurance-the greater the heart's capacity to pump blood, the better the level of cardiorespiratory endurance.

Individuals can work to improve their level of cardiorespiratory endurance by participating in exercise and activities that keep their heart rate elevated for a sustained period of time. Such physical activities include walking, running, biking, and swimming, to name a few. When participating in cardio exercise, it's good to find a comfortable intensity level (often referred to as a target heart rate), one in which the body is exerting itself enough to gain health & fitness benefits but not so much that it's left exhausted and depleted of energy.

This doesn't mean that the only beneficial activity in terms of cardiorespiratory endurance is strenuous activity-in fact, quite the contrary is true. A moderately-paced activity will help improve cardiorespiratory endurance and can be gradually taken to a more vigorous level of intensity. Working to improve this fitness component, individuals should start with activities that keep the heart rate elevated at a safe level. In other words, one should be able to still carry on a conversation while participating in the activity.

What is muscular strength?

Muscular strength is the ability of our muscles to exert the force needed to lift a heavy weight in one maximal effort.

Relying on anaerobic energy, muscles contract by using a short burst of energy to perform the activity. Anaerobic means that the weight-lifting exercise is performed without the body using oxygen for energy. Muscles are made stronger when they are worked against the force of resistance, which can be either weight or the force of gravity. Stronger muscles make a person less prone to injury. Strength training (or resistance training) exercises strengthen muscles and increase their size. Especially true for women, strength training also helps to build bone mass and is beneficial in preventing osteoporosis, a disease in which bones become fragile and more likely to break.

What is muscular endurance?

Muscular endurance is the ability of the muscle to continue to perform without fatigue (USDHHS, 1996 as adapted from Wilmore & Costill, 1994). Pushups and situps are two exercises commonly used to measure muscular endurance. In weight training, muscular endurance improves when a particular muscle is exercised specifically using a weight which is relatively light to lift and by increasing the number of repetitions. The exercise must be specific in order to improve the endurance of a particular muscle group. In other words, a cyclist might have a high level of muscular endurance in his/her legs, while arm muscles remain unimproved. In order to gain muscular endurance, specific muscles and muscle groups must be exercised beyond their current capacity in order for change to occur, this is known as the overload principal.

Muscular endurance can also help to improve cardiorespiratory endurance, as both are needed for optimal physical performance. That's why, in order to improve muscular endurance, a person should try cardiorespiratory exercises like bicycling, walking, jogging, dancing or swimming.

What is body composition?

Body composition is the relative amount of the different components that together make up a person's body weight-fat, muscle, bone, water and other vital parts of the body. Our body can basically be divided into two main components: lean body mass (lean tissue) and fat mass (fat tissue). Lean tissue is composed of muscle, bone and organs. Fat mass consists of the body's fat store. Both lean and fat tissue is necessary to maintain our health. However, the ratio of one to the other is important when evaluating body composition with respect to healthy weight. Because scales can't measure this lean-to-fat ratio, a person could technically be overweight but not over-fat. Weighing more than 200 pounds but with a low percentage of body fat, many football linebackers fit this description.

And, while a person's weight as measured on the scale may not change much over time, how much of that weight is fat and how much of it is lean mass may change. Muscle is metabolically active tissue which means that it burns calories to work. Fat, on the other hand, just sits there. As we age, we naturally start to lose muscle mass. Less muscle means that our bodies require fewer calories, which is why it becomes easier to gain weight in our thirties and beyond. The answer to this inevitable loss of muscle mass is strength training exercise. Regular strength training can reverse the process, helping us to gain back lean body mass, decrease body fat and increase our body's basal metabolic rate or the number of calories we burn at rest.

How is body composition measured?

The most common way to determine body composition is to use skinfold measurement. When performed by someone trained to take such measurements, they can be up to 98% accurate. Other methods like hydrostatic weighing or hydrodensitometry, considered to be the gold standard, are used by exercise physiologists and are considerably more complicated because they involve completely submerging the subject underwater.

What is the recommended percentage of body fat for good health?

Standards for body fat percent depend on gender and age and can vary considerably. The average body fat percent for adults is 15%-18% for men and 22%-25% for women. Some athletes can have very low percentages of body fat; however, the minimum that is considered safe for overall health is 5% for males and 12% for females.

What is flexibility?

Flexibility is the freedom with which a joint can move, often described as a joint having a wide range of motion. Flexibility is determined by how well the muscles, tendons and ligaments will stretch at a given joint. Flexibility typically decreases with age, although, this loss can be simply due to a lack of performing movements that encourage flexibility. The principal "if you don't use it, you lose it" can apply here. Flexibility is joint specific, meaning that a person can be very flexible in one part of their body and not at all flexible in another area. Training the body to have greater flexibility is mostly done through the use of stretching techniques and activities like swimming that lengthen the muscles. Flexibility has been shown to increase range of motion, decrease muscle soreness associated with exercise and may decrease exercise related injury.

Is flexibility really important? A lack of flexibility can cause health problems like lower back pain. Not having flexibility can also contribute to non-health problems such as having simple everyday tasks, like bending over to tie one's shoes, become difficult. Lack of flexibility can also limit athletic performance and form. For example, without flexibility in the shoulder area, it is nearly impossible to serve a tennis ball properly.