Components of Fitness

When imagining a physically fit individual, some people think of specific sport participants, such as marathon runners, gymnasts, and body builders. Others may imagine job descriptions or careers involving physical activity, such as laborers, dog walkers, bicycle messengers. These very distinct examples illustrate how being physically fit can mean more than excelling in a specific sport.

The concept of physical fitness is often broken into two parts, skill-related physical fitness, and health-related physical fitness. The components of skill-related physical fitness are those qualities generally required for a specific type of physical activity, but not necessarily critical for improving health. Examples of skill-related components include agility, coordination, balance, reaction time, power, and speed. A person with exceptional speed can run short distances very quickly, but he or she will probably not experience a decrease in cardiovascular disease risk because of this ability.

Health-related components of fitness are those components which, when trained, can help reduce health risks and improve quality of life. The health-related components of fitness include cardiorespiratory fitness, muscular strength, muscular endurance, and body composition.

Cardiorespiratory endurance

Cardiorespiratory endurance is the ability of the heart, lungs, and blood vessels to deliver oxygen and nutrients to the body's tissues effectively during large-muscle, strenuous exercise performed over an extended period of time. To improve cardiorespiratory endurance, aerobic activity is performed. Aerobic activity, characterized by an increased heart rate, increased breathing frequency, perspiration, and general feeling of exertion, requires sustained oxygen delivery to continue. Examples of aerobic activities include aerobic dance (O), step aerobics (O), walking (O), running, cycling, kickboxing, cross country skiing, rowing, in-line skating, stair climbing, and swimming.

Cardiorespiratory endurance is often considered by practitioners and clinicians to be the most important health-related component of fitness because of its physiological benefits. These benefits include an increased ability of the heart, lungs, and blood vessels to carry oxygen to cells, an increased blood supply to tissues due to an increase in capillary number, decreased blood pressure, increased HDL-cholesterol (the "good" cholesterol), improved well-being, and a stronger heart. A stronger heart can expel more blood per beat, which means the heart does not have to beat as frequently to deliver an adequate blood supply to working muscle. A lower heart rate (the number of heart beats in one minute), then, is another result of cardiorespiratory endurance training.

Muscular strength

Muscular strength is characterized by the maximum amount of force a muscle or muscle group can exert against a resistance at one time. The stronger a person is, the more force he/she can exert. Muscular strength is improved through resistance exercise, such as weight training (O).
and bodybuilding. Benefits of muscular strength training include an increased capacity to perform work, reduced osteoporosis risk, and an improved well-being. Global Health and Fitness offers a "muscle map," which describes muscle function and shows images of strength exercises (O). Loyola University offers a "Master Muscle List," a website showing the basic shape and location of the body's skeletal muscles (O). Some individuals use nutritional supplements to improve strength and increase muscle size. Howstuffworks.com provides information on a variety of performance-enhancing substances (O).

Muscular endurance

Muscular endurance is defined as the body's ability to exert a submaximal force over an extended period of time or for many repetitions. "Repetitions" refers to the number of times the force is exerted or a weight is lifted. So, a person who lifts a barbell ten times is said to have performed ten repetitions. Like muscular strength, muscular endurance is improved through resistance exercise. Whereas strength training, however, emphasizes heavier weights for fewer repetitions, muscular endurance training emphasizes lighter weights for more repetitions. Although there is a differentiation between muscular strength and muscular endurance, there is overlap between these two components. Subsequently, both components will be improved with resistance training. How the resistance training program is structured will determine whether muscular strength or endurance is emphasized.

Benefits of muscular endurance training include an increase in the amount of force one can exert, an improved ability to exert the force for an extended period of time, a decrease in osteoporosis risk, and an improved well-being.

Functional training is one of the more current trends, used to improve muscular strength and muscular endurance, as well as flexibility (see below for description). A functional training program is one emphasizing movements and activities specific to a person's athletic, recreational, rehabilitative or movement needs. These activities are generally multi-planar in nature, recruit more than one muscle group to perform, and may also require non-traditional equipment. Stability balls, foam rollers, medicine balls and balance boards are often seen in functional training programs. While functional training has its purpose, a person unfamiliar with more traditional resistance training, such as weight training, may wish to spend more time working on a simpler level. Arik Orosz, of Shapeshifter Magazine, writes, "(S)omewhere along the line, the meaning (of functional training) has been twisted in many training circles. All of the sudden, doing a headstand on a stability ball while balancing a 50lb dumbbell on each foot became functional training. If you’re training to join the Cirque du Soleil then maybe it is great drill, but for the rest of us it has nothing to do with anything!" (O)

Flexibility

Flexibility is defined as the range of motion around a specific joint in the body. When a person is defined as "flexible," many people often think of someone who can touch his/her toes. Although a flexible lower back region and flexible hamstrings (a muscle group located in the back of the thigh) are important, a person needs to be flexible throughout the rest of the body, as well. Specific stretching techniques and yoga (O) can help improve flexibility. An improved range of
motion in the joints may decrease risk of injury when performing everyday activities. Reaching, twisting, bending motions can become less difficult with flexibility training.

**Body Composition**

Body composition, as described during the fifth week's online reading, refers to the amounts of fat and fat free mass in the body. Simply, fat free mass consists of muscle and bone. An increase in bone and muscle tissue can decrease injury risk, and a decrease in fat tissue can reduce health-related problems. As a person engages in a physical fitness program, his or her body composition may change. Fat tissue may decrease while muscle and bone tissue may increase.

While the average individual living in North America could stand to add more physical activity into his or her lifestyle, sometimes moving beyond the precontemplation stage can be difficult. CalorieLab.com provides an article describing exercise resistance and how the problem can be addressed (O). At the other extreme, too much physical activity could lead to overtraining and/or "burnout." About.com's Sports Medicine section provides information on the symptoms associated with overtraining (O).