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Physical Fitness for Health and Sports

For someone to claim that they are physically fit, they must possess the following "Health Fitness Factors":

1. Muscular Strength

This is a muscle's ability to produce force and/or do work.

Work is defined as the product of : Force x Distance.

2. Flexibility

This is the muscle's ability to stretch and allow a joint to move through a full range of motion.

3. Cardiovascular endurance

This is the ability of the heart, lungs and blood vessels to provide oxygen to the working muscles and tissues of the body for long periods of time.

4. Lean body mass and body composition

This is the optimal state, where a person's body, due to regular exercise and dietary prudence, has a minimum and healthy amount of body fat.

For the average person who wishes to be physically fit, a program of exercise and eating which combine the above HFF is adequate to achieve a healthy fitness goal. Exercises and activities, which are adapted to compensate for previous injuries and the aging process, can allow you to pursue fitness activities throughout your lifetime.

Sports Fitness factors

For someone who is involved in sports activities such as tennis, golf, softball or soccer, a higher level of fitness is required. This higher level of fitness is termed "Sports Fitness". To achieve sports fitness, you must possess the "Sports Fitness Factors". To possess the SFF, you must first have formed a fitness base by training and progressively acquiring the HFF. All of the SFF are predicated upon optimal levels of strength, flexibility, cardiovascular endurance and ideal body composition. Acquisition of each SFF is accomplished by training each SFF in a particular order; each particular SFF being built upon a combination of HFF and the SFF acquired before it. The SFF are described in the following section. Keep in mind each SFF will be acquired in the order listed, after the HFF are possessed.



1. Power

Power is the ability to use strength at a fast rate of speed. Power is defined as Force times distance divided by time. Power is acquired from a base of strength and flexibility. It is trained with high-force (strength), high-speed exercise drills utilizing the body weight or weighted objects as resistance. The muscles are required to move the mass of the body or object at a high rate of speed.

2. Speed

Speed is formed from a combination of strength, flexibility and power. The body or body part is trained to move through space in a short period of time in a specific and purposeful manner.

An example of a speed activity is running a 100 meter race or performing the rapid hand movements necessary in boxing or karate. Speed is defined as distance traveled divided by the time it takes to get there.

3. Agility

Agility is formed from a combination of power and speed. Agility refers to a person's ability to change direction quickly, often at high speeds. This is a necessary factor in all competitive sports. This SFF requires the highest and most complex combination of HFF and SFF interaction. The factors of speed and agility are trained with sport-specific drills, that is, utilizing the actions and movements specific to the sport being trained.

4. Durability

Durability is an attribute attained from proper training that allows you to minimize the occurrence of injury. This is due to the conditioning effect obtained by possessing the HFF and SFF simultaneously and in the optimal amount. Due to proper training, the body becomes stronger and more fit, sports and fitness- training injuries are avoided, and you can enjoy your activity or sport without interruption.

If you participate in a competitive sport without first establishing a basis of fitness by acquiring the HFF, and then advancing your training by acquiring the SFF, then you will eventually end up with an injury related to a deficit in fitness in these areas. These types of injuries are avoidable simply by following the above guidelines. If you follow the steps for acquiring the HFF and SFF illustrated in the following diagram, you can improve fitness and sports performance and reduce injuries effectively.

Strength-----Flexibility-----CV endurance-----Optimal body Composition

Health fitness

Power-----Speed-----Agility-----Durability



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Sports fitness

Reduced injuries-----Improved sports performance