

Weight Training

Muscle power is the ability of the muscle to do maximum work within the shortest amount of time. Muscle endurance is the ability of the muscle to do moderate work over an extended period of time. Weight Training trains and develops the muscles for power. Spot reduction is not possible; however, adding lean muscle raises the Basal Metabolic Rate and therefore burns more total body fat.

Strength training not only increases bone density but tendon and ligament thickness thereby decreasing the risk of injury by increasing overall structural strength. Muscle atrophies at a rate of about 6.6 pounds per decade of age past 20 years old if not exercised. Strength training can avoid muscle atrophy through the aging process.

Benefits

- Helps control blood pressure
- Reduces body fat
- Improves posture
- Increases muscle strength
- Raises Basal Metabolic Rate
- Increases bone density
- Injury prevention from normal activities
- Physical appearance

Circuit Training

Circuit training is generally set up in gyms to provide a workout to specific muscles in a specific order. Generally, the exercises are done quickly without a great deal of rest in between sets. One set is performed on a machine and followed by a set of different exercises on the next machine. When all the machines in the circuit have been used the round is completed again from the start until three complete sets have been executed.

Circuit Training does not provide an effective aerobic workout. Studies evaluating circuit weight training showed an average improvement of only 6% in cardiovascular fitness as measured by VO₂ max over a six-week period. Circuit training was described as continuous exercise with moderate weights using 10 - 15 repetitions with 15 - 30 second rest periods.

Overload Principle

Each individual's capabilities are determined by their genetic makeup. Individuals with increased neuromuscular efficiency incorporate greater numbers of muscle fibers during contraction and therefore have the advantage in strength potentials. In general, men have more testosterone than women and therefore have a greater potential for accelerated growth.

Muscles have a tendency to adapt to repeated stimulus, thereby, requiring less energy and effort to execute the same task. This can inhibit muscle growth (hypertrophy) or fat loss that we are trying to achieve. There are two types of overload principles:

- Increasing Weights - increases muscle size.
- Increasing Repetitions - increases muscle strength with less growth in size.

If you over-stimulate the muscle, growth in strength and size will be inhibited. The levels of over-stimulation are dependent on each individual. It would be unreasonable to double the amount of weights. Make sure that you can do at least 4 to 6 repetitions.

Specificity Principle

Muscle training for a specific task is called specificity. Although each person has individual variations in movement for sports related activities, specific training essentially involves working the muscles in the same manner as the expected use.

Muscle design evolves for a specific use. Care must be used when isolating specific muscles not to create an unbalanced condition. Unbalanced muscles may allow a particular muscle to work harder than the supporting and stabilizing muscles, thereby, increases the chances of injury.

Types of Specificity Principles:

- **Resistance** - resistance is identical to or greater than encountered during the activity or sport.
- **Movement** - movement patterns mimic that encountered during the activity or sport.
- **Muscle** - specific muscles are exercised that will be used during the sport or activity.
- **Speed** - movement matches speed used during the activity or sport.

