

# Glossary of Definitions

## **Abduction**

Movement of a limb away from middle of body, such as bringing arms to shoulder height from hanging down position.

## **Adduction**

Movement of a limb toward middle of body, such as bringing arms to side from extended position at shoulder.

## **Aerobic Exercise (with oxygen)**

Activity in which the body is able to supply adequate oxygen to the working muscles, for a period of time. Running, cross-country skiing and cycling are examples of aerobic activities.

## **Agonist**

Muscle directly engaged in contraction that is primarily responsible for movement of a body part.

## **Anaerobic Exercise**

High-intensity exercise that burns glycogen for energy, instead of oxygen. Anaerobic exercise creates a temporary oxygen debt by consuming more oxygen than the body can supply. An example of anaerobic exercise includes weight lifting

## **Antagonist**

Muscle that counteracts the agonist, lengthening when the agonist muscle contracts.

## **Antioxidants**

Vitamins A, C and E, along with various minerals, which are useful to protect the body from "free radicals". Free radicals are unstable cells, which react with each, naturally created in the body, and also caused by factors such as smoking and radiation. Free radicals may cause cell damage, which leads to disease.

## **Atrophy**

Withering away. Decrease in size and functional ability of tissue or organs.

## **Barbell**

A basic piece of equipment used in strength training. A barbell consists of a bar, sleeve, collars and weights or plates. Barbells can be of a fixed weight or a variable weight for exercise fitness.

## **BMR**

Basal metabolic rate. The number of calories consumed by the body while at rest. It is measured by the rate at which heat is given off, and is expressed in calories per hour, per square meter of skin surface.

## **Body Composition**

The different components of human structure that, when taken together, make up a person's body weight. Different methods are used to assess composition. Most popular methods are listed below:

1. Hydrostatic weighing: Submersion in a tank while expelling air from lungs gives underwater weight. Relies on Archimedes' principle of displacement of volume.
2. Bioelectrical impedance: These devices determine total weight, the percent and amount of body fat, muscle mass, water and even bone mass.
3. Skin fold measurement: Estimation of body fat by skin fold thickness measurement. Measurement can use from 3 to 9 different standard anatomical sites around the body.

### **Carbohydrate Loading**

Increase consumption of carbohydrates in liquid or food form normally three days prior to an endurance type event.

### **Cardiovascular Training**

Physical conditioning that strengthens heart and blood vessels, the result of which is an increase in the ability for your body muscles to utilize fuel more effectively resulting in a greater level of exercising.

### **Catabolism**

The breakdown of lean muscle mass, normally as a result of injury, immobilization and poor dieting techniques.

### **Cholesterol**

A fat lipid which has both good and bad implications within the human body. Good being known as HDL and bad being LDL. Bad cholesterol is associated with heart disease and stroke, whereas the body requires cholesterol for the production of many steroid hormones.

### **Circuit Training**

Going quickly from one exercise apparatus to another and doing a prescribed number of exercises or time on each apparatus, keeps pulse rate high and promotes overall fitness, by generally working all muscle groups as well as heart and lungs.

### **Cool Down**

Moderate then light activity, normally followed by stretching.

### **Contraction**

The shortening and lengthening of a muscle that occurs while performing an exercise.

### **DOMS (Delayed Onset Muscle Soreness)**

A condition that is often felt after exercise, especially weight orientated, or excessive running. Caused by the micro tears within your muscles as part of the body

rebuilding phase. Will generally last 24 / 72 hours, with feelings felt normally the day after exercise.

### **Dumbbell**

A one-handed barbell. Dumbbells are shorter and generally of a lighter weight than barbells.

### **Electrolytes**

Capable of conducting electricity in a solution. Used in many body activities, potassium, sodium and chloride are all forms of electrolytes.

### **Essential Fatty Acids**

Required by the body, however only obtainable from food sources, such as flaxseed oil and safflower oil.

### **Free Weights**

These are weights that are not attached to a machine. Dumbbells and barbells are free weights. The “weights” go onto the end of dumbbells and barbells. Machines for weight lifting are different--the weights on a machine travel up and down along a guide or rod.

### **Hypertrophy**

The increase in size of a muscle as a result of high-intensity weight training.

### **Isometric Exercise**

Muscular contraction where muscle maintains a constant length and joints do not move. These exercises are usually performed against a wall or other immovable object.

### **Lean Body Mass**

Everything in the body except for fat, including bone, organs, skin, nails and all body tissue including muscle. Approximately 50-60% of lean body mass is water.

### **Muscle Actions**

There are basically three types of muscle actions you should be aware of when training yourself or others.

1. Concentric: When the weight is lifted, the muscle shortens.
2. Eccentric: When the weight is lowered, the muscle is lengthened in a controlled manner.
3. Isometric: When a muscle is activated and develops force but no movement occurs, an isometric muscle action takes place.

### **Proprioceptive neuromuscular facilitation (PNF) stretching**

A static stretch of a muscle immediately after maximally contracting it.

### **Rep/Repetition**

When an exercise has progressed through one complete range of motion and back to the beginning, one repetition has been completed, i.e., such as lifting a weight up and down once.

**Resistance**

The actual weight against which a muscle is working.

**Set**

This is a series of repetitions done without rest, i.e., such as 10 reps = 1 set.

**Target Heart Rate**

In aerobics, the speed at which you want to maintain your heartbeat during exercise. Find your target heart rate by multiplying your maximum heart rate by .6 (for 60 percent), by .7 (for 70 percent) and by .8 (for 80 percent). Your heart rate should stay between 60 and 80 percent of your maximum heart rate for at least 20 minutes.

**Training to Failure**

Continuing a set until your muscles cannot complete another repetition of an exercise.

**Weight Training**

A form of exercise in which muscles are repeatedly contracted against a weight to reach fatigue. Weight training reshapes the body and builds muscle.