

# WEIGHT TRAINING

## What Can Weight Lifting Do For You?

1. Raises metabolism. Muscle burns more calories than fat. The more muscle you have the more calories you burn all day long.
2. Strengthens the bones as well (women are more at risk of osteoporosis.)
3. Makes you stronger and increases muscle endurance.
4. Helps avoid injuries.
5. Increases confidence and self-esteem.
6. Improves coordination and balance.

## Types of Strength Training

1. Resistance Training – free weights, cable weight machines, hydraulic or pneumatic machines, body weight, sleds, parachutes
2. Strength Training – free weights, cable weight machines, hydraulic or pneumatic machines, body weight
3. Weight Training – free weights, cable weight machines

## Major Muscle Groups

- |                                    |                                   |
|------------------------------------|-----------------------------------|
| 1. Biceps                          | 2. Triceps                        |
| 3. Shoulders – deltoids, trapezius | 4. Chest - pectorals              |
| 5. Back – lats                     | 6. Hamstrings/Glutes              |
| 7. Quadriceps                      | 8. Calves – gastrocnemius, soleus |
| 9. Abdominals/Obliques             |                                   |

\*\*Some muscle groups may be worked differently due to multiple parts to that muscle.

Example – pectorals have an upper, middle and lower portion and would be worked differently by performing Incline, Regular and Decline Bench Press to get each portion specifically.

\*\*Think of each muscle group and how it may be worked differently to target all portions of the muscle.

## Things to Consider When Designing a Weight Lifting Program

1. Goals – what do you want to achieve or gain
2. Time – how much time will you have daily or weekly
3. Equipment – what type and how much equipment will you have
4. Lift by body part/muscle group, total body, or upper/lower work days
5. Target your weaknesses and still work your strengths
6. Understand number of repetitions/sets and they relate to your goals
7. Learn the muscle groups AND what exercises work those muscle groups
8. Learn to lift correctly
9. Use time wisely – alternate muscle groups while lifting
10. Log your workouts to check for improvement and to overload correctly

## Training Variables – How To Alter a Weight Lifting Program

1. Choice of Exercises – Primary Exercises (multijoint movements), Assistance Exercises (single joint movements), also consider movements that mimic your competitive movements  
Primary Ex. – Power Clean, Deadlift, Squat, Leg Press, Bench Press, Military Press, Barbell Row, Pull-up  
Assistance Ex. – Knee Ext., Leg Curl, Chest Fly, Deltoid Lateral Raise, Biceps Curl, Triceps Ext., Calf Raise, Ab Crunch
2. Order of Exercises – Primary Exercises work first then Assistance Exercises
3. Number of Sets – one for beginners, build up to 3-6 sets per lift, 3-24 per muscle group, 10-40 per workout
4. Resistance – 1-6 reps at 80-100% of 1RM for strength, 8-12 reps at 70-80% of 1RM for hypertrophy, 12+ reps at less than 70% of 1RM for muscular endurance
5. Rest Between Sets – 3-5 minutes between sets for strength, 1-3 minutes between sets for hypertrophy, less than 1 minute between sets for endurance

## **Types of Muscle Action**

1. Concentric – action when muscle force exceeds the external resistance, muscle shortens  
ex. – upward phase of bicep curl w/30 pound DB  
POSITIVE phase of repetition
2. Eccentric – action when external resistance exceeds force supplied by muscle, muscle lengthens  
ex. – downward phase of bicep curl w/50 pound DB  
NEGATIVE phase of repetition
3. Isometric – muscle contraction without moving, like lifting immovable object, muscle stays same length  
ex. – holding a 40 pound DB in one spot during a bicep curl

## **Fitness Components Worked Through Weight Lifting**

1. Strength – ability of a muscle to produce force. It is measured by the amount of weight you can lift in one repetition. *Power* is a different component. Power = strength + speed.
2. Muscular Endurance – ability of a muscle to produce force repeatedly over a period of time. It is measured by the number of repetitions of the movement or skill.

**\*\*Strength and Muscular Endurance are best improved through strength training.**

3. Cardiovascular Endurance – capacity of the respiratory system (lungs and blood vessels) and the circulatory system (heart, arteries, capillaries, veins) to supply oxygen and nutrients to the muscle cells so an activity can continue for a long period of time.
4. Flexibility – range of motion possible in the joints. This is controlled by the muscles, tendons, and ligaments. Flexibility can be increased through stretching.

**\*\*Cardiovascular endurance can be improved through strength training in a circuit type of workout.**

**\*\*Flexibility can be improved through strength training correctly and performing each exercise through the full range of motion.**

## **OBSERVE OTHER WEIGHT LIFTERS AND USE MIRRORS WHEN POSSIBLE**

1. Observe others to look for correct OR incorrect lifting techniques
2. Be open to giving constructive criticism as well as receiving
3. Always look for new ways to lift, the body becomes stagnant if the routine never changes
4. Mirrors are for helping individuals check their form while lifting (of course others are in love with themselves and like to look at their own body)

## **NUTRITION AND ITS ROLE IN WEIGHT LIFTING**

1. Carbohydrates – main source of energy, must have sufficient storage to finish a quality workout,  
- 55-65% of calorie intake
2. Fats – back-up source of energy, not ideal for weight lifters to use this as energy (converts too slow)  
- 25-35% of calorie intake
3. Proteins – needed after workouts to repair/rebuild muscles/tissues damaged during workout, gets you ready for the next workout (sooner)  
- 10-20% of calorie intake
4. Vitamins – crucial for all body processes
5. Minerals – crucial for all body processes
6. Water – #1 source of fluids, crucial for all body processes, 8+ 8 ounce glasses of water a day