

# Chapter 12 – Muscular Endurance

**Muscular Endurance** – your muscles ability to work for long periods of time with out tiring.

## Benefits of muscular endurance

1. Improves appearance, fitness, physical & mental health
2. Improved ability to resist fatigue
3. Better posture
4. Stronger bones
5. Less likely to have muscle soreness and muscle injuries
6. Increases your lean body mass and decreases fat.
7. Decreases heart rate which reduces the risk of cardiovascular diseases.

## FIT formula for Muscular Endurance

- Muscular endurance exercises can be done more frequently than strength exercises
- Strength exercises are typically done 2-3 times per week, and muscular endurance exercises can be done on most days of the week.
- Since resistance is lower for muscular endurance exercises compared to strength, multiple sets can be performed.

### Muscular Endurance

FIT Principle	Target Zone
Frequency	Every other day
Intensity	20-55% of 1RM
Time	1-3 sets of 11-25 reps of each exercise

\*once you can perform **3 sets of 25** it is time to increase the weight

### Muscular Strength

FIT Principle	Target Zone
Frequency	2-3 days a week
Intensity	40-80% 1RM
Time	1-3 sets of 8-12 reps with 1-2 minutes between sets. *Adults - 1-3 sets of 3-8 reps

## **Circuit Training**

- Circuit Training involves moving from one exercise to another with short breaks (changing stations)
- Circuit training is very good for developing muscular endurance.

## **Building muscle fitness using inexpensive equipment:**

- **Elastic band exercise** - provide resistance for exercise.
  - Example: Dyna-Bands
- **Homemade weights**
  - Example: cans of food, milk jugs
- **Exercise Ball** – stability ball, help stabilize the body to build good posture.
- **Core Exercises** – exercises that help build the muscles of the trunk and help the body maintain good posture.

## **Methods of building muscle fitness for enhanced performance**

- **Plyometrics** – designed to improve power
  - Hopping drills
  - Jumping on/off plyo boxes
- **Periodization** – method of scheduling progressive resistance exercise to provide variety and to enhance peak performance.
  - 1<sup>st</sup> period you focus on muscular endurance, 2<sup>nd</sup> period focus on strength exercises, 3<sup>rd</sup> period combination of both.
  - Many different schedules exist.
- **Interval Training** – involves short sprints and high intensity exercise followed by rest periods.

## **Ergogenic Aids**

- **Ergogenic aid** – anything that is done to help you generate work or increase your ability to do work.
- **Anabolic Steroids** – synthetic drugs that resemble the male hormone testosterone.
  - Teenagers are at high risk of harm from steroid because your body is still growing, any may cause bones to stop growing.
- **Androstenedione** – (a.k.a – Andro) a food supplement that the body converts to a substance similar to anabolic steroids that can have harmful effects to those of anabolic steroids.
- **Creatine** – a substance stored in the muscles that helps supply energy for muscle contraction and can be taken as a supplement or created by your own body

## **Other Supplements**

- **Human growth Hormone (HGH)** – illegal drug extremely dangerous for teens.
- **Protein supplements** – can come in a pill, powder or protein bars.