Fitness Study Guide: Junior/Senior

The Five Components of Physical Fitness

The 5 components of physical fitness are used in schools, gyms and health clubs to measure your level of physical fitness. Total fitness is defined by how well your body performs in each of 5 categories. These 5 components measure your body's ability to use oxygen as fuel, your muscular strength and endurance, the flexibility of your joints and your total body fat. The five components of physical fitness are:

- Cardiovascular Endurance
- Muscle strength
- Muscle endurance
- Flexibility
- Body composition

Cardiovascular Endurance

Cardiovascular endurance refers to the ability of your heart and lungs to work together to fuel your body with oxygen. Aerobic conditioning, like jogging, swimming and cycling, can help improve cardiovascular endurance.

Muscle Strength

Muscle strength refers to the amount of force a muscle can exert, in a single effort. Exercises like the bench press, leg press or bicep curl might be used to measure muscle strength.

Muscle Endurance

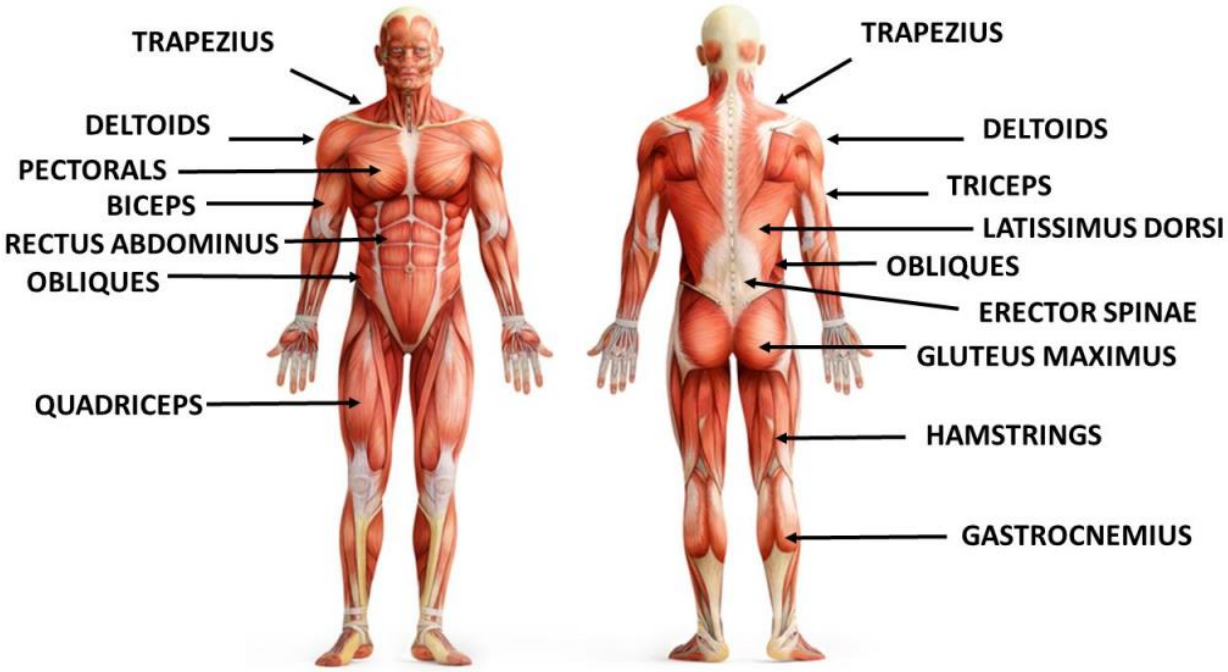
Muscle endurance refers to the ability of a muscle to perform a continuous effort without fatiguing. Cycling, step machines and sit up tests are often used to measure muscular endurance.

Flexibility

Flexibility refers to the ability of each joint to express its full range of motion. Flexibility can be tested by stretching individual muscles or by performing exercises such as the lunge or the sit and reach.

Body Composition

Body composition refers to the amount of body fat you have, versus the amount of lean muscles, bones and organs. There are several tests that can be used to measure body composition. The most reliable is underwater weighing, but due to the size and expense of the equipment, this type of test isn't common. Many doctors, gyms and health clubs use a pinch test instead.



Muscular Strength & Muscular Endurance

Muscular Strength: The ability of a muscle, or a group of muscles, to exert force for a single maximum effort.

- My Goal is to Build Muscular Strength (bulking up):
    - Basic Principle is to use heavy weights and low repetitions
        - 3 sets on each muscular group
        - 2 - 6 reps in each set
        - Heavy weights (85-90 % of 1 rep max)

Muscular Endurance: The ability of a muscle, or a group of muscles, to sustain repeated contractions over longer period of time.

- My Goal is to Build Muscular Endurance (Toning)
    - Basic Principle is to use light weight and high repetitions
        - 3 sets on each muscle group (possibly more)
        - 12-15 repetitions for each set
        - Lighter weight (70% or less of 1 rep max)
- My Goal is to Build Both Muscular Strength & Endurance:
    - Basic Principle is to use moderate weight and moderate repetitions
        - 3 sets on each muscular group
        - Between 8-12 reps for each set
        - Moderate weight (70 - 85% of 1rep max)

One-Rep Max

One-repetition maximum (one rep maximum or 1RM) in weight training is the maximum amount of force that can be generated in one maximal contraction.

Defining Sets and Repetitions:

- 1 set is made up of a number of repetitions (how many times moving the weight)
    - Example 1 set of 8-10 repetitions

Rest time between workouts of muscular groups should be at least 48 hours for the muscle group you're working on.

Principles to improve your overall strength or endurance:

Overload:
Putting more of a workload on muscles than they are accustomed to during normal activity.

Progression:
The way in which the individual should increase the load. (more sets, reps, weight, or times per week).

Specificity:
The Specificity Principle states that exercising a certain body part or component of the body primarily develops that part. The Principle of Specificity implies that, to become better at a particular exercise or activity, you must perform that exercise or skill. The principle of specificity is especially important if you are exercising to achieve a particular goal such as increased strength, improved aerobic fitness or increased flexibility.

Overload Principle:
A basic sports fitness training concept. It means that in order to improve, athletes must continually work harder as they their bodies adjust to existing workouts. The principle of overload states that a greater than normal stress or load on the body is required for training adaptation to take place. The body will adapt to this stimulus. Once the body has adapted then a different stimulus is required to continue the change. In order for a muscle (including the heart) to increase strength, it must be gradually stressed by working against a load greater than it is used to.

Health Related Fitness

Cardiorespiratory Endurance:

The ability of the cardiovascular system (heart, blood and blood vessels) and the respiratory system (lungs and air passages) to deliver oxygen and other nutrients to the working muscles and to remove wastes.

Taking your Pulse:

- Use your index and middle finger (Never the thumb- it has its' own pulse)
- Can take your pulse in 2 spots
    - Neck
    - Wrist
- Use a 6 second count and add a 0 (x 10) to your count

Maximum Heart Rate:

The maximum heart rate is the highest heart rate achieved during maximal exercise

- The formula for figuring Maximum Heart Rate:

220 – age = Maximum Heart Rate

Target Heart Rate:

This is when your exercise heart rate (pulse) is 60-80% of your maximum heart rate.

- Calculating your target heart rate:

    - Figure out your Maximum Heart Rate (220 – age = Max Heart Rate)
    - (your max) X .6 (60%) through (your max) X .8 (80%)

Example: 220 – 14 = 206 X .6 = 123.6 (round up to 124)

220 – 17 = 203 X .8 = 162.4 (round down to 162)

Resting Heart Rate:

A normal resting heart rate for adults ranges from 60 to 100 beats a minute. Generally, a lower heart rate at rest implies more efficient heart function and better cardiovascular fitness.

- Example, a well-trained athlete might have a normal resting heart rate closer to 40 beats a minute.
- Best to take it right after you wake up/well rested

Recovery Heart Rate:

Refers to the heart's ability to return to normal levels after physical activity.

- The first minute of recovery is the most crucial. After exercise, your heart rate experiences an abrupt drop during the first minute. This recovery period can indicate fitness level and give an early warning of potential heart problems.
- The heart rate two minutes after exercise is referred to as the recovery heart rate. This is the most common measurement in determining cardiovascular fitness.

Stretching:

- Dynamic: Actively moving the joint through the range of motion. These should be done before a workout.
- Static: Holding a stretch with no movement for a period of time. These should be done after a workout.