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| Component of physical fitness | Definition | How to improve | How to measure |
| Cardio vascular endurance | The ability for heart and lungs to work together to fuel body with oxygen. | Jogging, swimming, cycling or even sports | Pacer Test  Mile run |
| Muscular strength | The amount of force a muscle can exert in a single effort | Strength training exercises that uses high weight with low reps | Push-ups  Bench or leg press  Bicep curls |
| Muscular Endurance | The ability of a muscle to perform a continuous effort without fatiguing. | Strength training exercises that uses low weight with high reps. | Curl-ups |
| Flexibility | The ability of each joint to express its full range of motion | Daily stretching  Yoga  Pilates | Sit & Reach  Trunk lift |
| Body Composition | The amount of body fat you have versus the amount of lean muscles, bones and organs. | Exercise and healthy diet | Weight to height relationship  Pinch test |

An effective fitness program includes all 5 components of physical fitness. While it is acceptable to emphasize exercises for one or more weaker components, be sure not to neglect the others. Also, any strenuous exercise in one muscle group of fitness component should be followed by 24 to 48 hours rest in that area to allow for recovery.

**Keys to achieving fitness goals:**

**Specificity:** Training must be geared toward specific goals.

**Regularity:** To achieve a training effect, you must exercise often.

**Progression:** The intensity (how hard) and/or duration (how long) of exercisemust gradually increase to improve the level of fitness.

**Overload:** The workload of each exercise session must exceed thenormal demands placed on the body in order to bring abouta training effect.

**Balance:** To be most effective, a program should include activities thataddress all of the fitness components. Also, choosing a variety ofactivities reduces boredom and increases motivation and progress.

**Recovery:** A hard day of training for a given component of fitness shouldbe followed by an easier training day or rest day for thatcomponent to help permit recovery.

The **FITT** Principle describes how to safely apply the principles of overload and progression:

**F**requency

**I**ntensity

**T**ime

**T**ype (specificity)

**Frequency**

Frequency is how often a person performs the targeted health-related physical activity. For each component of health-related fitness, a safe frequency is three to five times a week.

**Intensity**

Intensity is how hard a person exercises during a physical activity period. Intensity can be measured in different ways, depending on the related health-related component. For example, monitoring heart rate is one way to gauge intensity during aerobic endurance activities, but gives no indication of intensity during flexibility activities. If your heart rate isn’t below 120 bpm after 5 minutes of rest, the intensity of the activity is too hard.

**Time**

Time is the length of the physical activity. As with the other aspects of the FITT principle, time varies depending on the health-related fitness component targeted. For example, flexibility or stretching may take 10-30 seconds for each stretch, while the minimum time for performing aerobic activity is 20 minutes of continuous activity.

**Type**

Type or specificity, refers to the specific physical activity chosen to improve a component of health-related fitness. For example, an individual wishing to increase arm strength must exercise the triceps and biceps, while an individual wishing to increase aerobic endurance needs to jog, run, swim or perform some other aerobically challenging activity.

**Target Heart Rate**

Example for someone with a HRmax of 180 (age 40, estimating HRmax  as 220 − age):

60% Intensity: (220 − (age = 40)) × 0.60 → 108 bpm

80% Intensity: (220 − (age = 40)) × 0.80 → 144 bpm

#### This method of calculating your target training zone is based on your maximal heart rate and resting pulse.

Resting heart rate (RHR) – Heart rate first thing in the morning

Maximum heart rate (HRMAX) = 220 – age

Heart rate reserve = (HRR) = HRMAX – RHR

Target heart rate (THR) = HRR x (60% to 80%) + RHR

**Hypertension** (**HTN**) or **high blood pressure**, sometimes called **arterial hypertension**, is a [chronic](http://en.wikipedia.org/wiki/Chronic_(medicine)) [medical condition](http://en.wikipedia.org/wiki/Disease) in which the [blood pressure](http://en.wikipedia.org/wiki/Blood_pressure) in the [arteries](http://en.wikipedia.org/wiki/Artery) is elevated.

**TRUE – FALSE QUESTIONS:**

1. Warm up exercises will help prevent injuries, increase body temperature, and stretch large body muscles to increase elasticity.
2. If starting an exercise program after many years of a sedentary lifestyle, you should start the program with vigorous aerobic activity three times per week.
3. It is important to follow the exact directions when performing fitness tests in order to receive the highest possible score.
4. When setting fitness goals, it is important to have the same goals as your workout partner
5. A benefit of resistance training or weight-bearing aerobic activity is the preventions of osteoporosis in the elderly.
6. It is important for you to know your current level of fitness if you want to set personal goals for yourself.
7. To have the most positive impact on the overall physical performance in terms of dietary practices, one should balance his intake of nutrients.
8. Your resting heart rate is the best indicator to determine improvement of cardiovascular fitness.
9. A resting heart rate should be taken just prior to an exercise session.
10. To increase muscular strength you should perform many repetitions using light weights.
11. Increasing your heart rate during an activity is an example of increasing your frequency.
12. 220 minus your age is a simplified way to determine your target heart rate.
13. One pound of weight is equivalent to burning 3500 calories.
14. Hypertension is defined as having an unstable or persistently low blood pressure below normal.

Answers:

1. T
2. F (Low level activity –walking)
3. F (True measurement of ability)
4. F
5. T
6. T
7. T
8. F (Recovery HR)
9. F (When you wake up)
10. F (Low reps, heavy weights)
11. F (Intensity)
12. F (Maximum HR)
13. T
14. F (High BP)