

# Concepts of Health and Fitness

## Physical Education Final Exam Review

### Benefits of Exercise

1. Lowers resting heart rate
2. Releases daily stress
3. Reduces risk of heart disease
4. Improves circulation and respiration
5. Maintains healthy weight



### Cardiovascular Endurance

**Cardiovascular Endurance** is the ability to perform prolonged, large-muscle, dynamic exercise at moderate to high levels of intensity. Examples of cardiovascular activities include walking, jogging, cycling, swimming and aerobics.

Major organs in the body that are directly affected by cardiovascular exercise include the heart and lungs.

### Heart Rate and Exercise

**Target Heart Rate Zone (THRZ)** is the range of heart rates that should be reached and maintained during cardiovascular endurance to obtain training effects.

THRZ: 140 – 180 Beats Per Minute (BPM)

**Maximum and Minimum Heart Rate** is the top and bottom number of your target heart rate range. Max and Min HR levels are used to determine the intensity of your workout.

THRZ Formula:  $220 - \text{age} \times .60 = \text{Minimum Heart Rate}$

$220 - \text{age} \times .90 = \text{Maximum Heart Rate}$

**Resting Heart Rate** is the number of beats per minute while your body is at rest. Your resting heart rate can be used to determine your current level of cardiovascular fitness. The lower your resting heart rate the higher your fitness level.

Average Resting Heart Rate: 60 – 70 BPM

### Elements That Raise Resting Heart Rate

1. Caffeine
2. Nicotine
3. Asthma inhalers
4. Stress and anxiety
5. Stimulants

**Recovery Heart Rate** is the average amount of time it takes your pulse to go from its target heart rate zone back down to your resting heart rate zone at the end of exercise.

Healthy Recovery Heart Rate Time: 3 to 5 minutes



## **Principles of an Exercise Program (F.I.T.T Principle)**

- a. **Frequency:** How often you exercise. Recommended 3 to 5 days a week.
- b. **Intensity:** How hard you exercise. Recommended intensity is between 60 – 90% of your THRZ.
- c. **Time:** How long you exercise. Recommended exercise bout is from 20 – 60 minutes
- d. **Type:** Mode of exercise. Activities that involve aerobic or anaerobic systems; jogging, weight training, jump roping...etc.

**Aerobic exercise** is activity that is steady enough to allow the heart to supply all the oxygen your muscles need. The term aerobic means “with oxygen.” Aerobic activity is especially beneficial to building high levels of cardiovascular fitness and help in controlling body fatness.

**Anaerobic exercise** is activity done in short bursts. The term Anaerobic means “without oxygen.” When you do anaerobic activity, your body cannot supply blood and oxygen to the muscles as fast as the body needs it.

## **Anatomy of a Workout (Stages of a total fitness workout)**

**Warm-up--** 5 to 10 minutes (work muscles at a moderate pace to generate blood flow through the body before stretching)

**Stretch--** 15 – 20 minutes (use dynamic or static stretching)

**Activity--** 20 to 40 minutes (Exercise at a pace that keeps your heart rate in your target heart rate zone)

**Cool Down--** 5 to 10 minutes (work muscles at a moderate pace to properly and gradually bring body back down after exercise)

**Stretch--** 15 to 20 minutes (use dynamic or static stretches to reduce the chances of injury and rid the muscles of lactic acid)

## Health Components

- **Cardiovascular Endurance** is the ability to perform prolonged, large-muscle, dynamic exercise at moderate to high levels of intensity. Cardiovascular fitness requires a strong heart, healthy lungs and clear blood vessels to supply the cells in your body with the oxygen they need.
  - Increasing cardiovascular endurance decreases chances of heart disease
  - Allows body systems to work more efficiently with less effort
  
- **Muscular Strength** is the ability of a muscle or group of muscles to exert a maximal force against a resistance. Strength is often measured by how much weight you can lift. People with good strength can perform daily tasks efficiently—that is, with the least amount of effort.
  - Requires muscle to work against resistance
  - Amount of weight you can lift one time; 1RM (1 rep max)
  
- **Muscular Endurance** the ability to use your muscles many times without tiring. People with good muscular endurance are likely to have better posture and fewer back problems. They are also better able to resist fatigue.
  - Requires muscle to sustain effort over long periods of time
  - Increasing muscular strength will in turn increase muscular endurance
  
- **Flexibility** is the ability to use your joints fully through a wide range of motion. You are flexible when your muscles are able to freely and comfortably move through a full range of motion without difficulty.
  - Reduces the chances of injury (sprains and strains)
  - Prevents post exercise pain and relieves muscle tension
  
- **Body Composition** is the percentage of body weight that is made up of fat when compared to other body tissue, such as bone and muscle. For example, a person that weighs 100 pounds, of which 20 pounds is fat, is said to have a body fat % of 20 percent. People that are in a healthy range of body fatness are more likely to avoid illness and even have lower death rates than those outside the healthy range. The extreme ranges are the most dangerous; too little body fat, like too much, can cause health problem.
  - High body fat percentage increases chances of heart disease, diabetes and cancer)
  - Fat is necessary for storing nutrients and providing insulation for the body and its internal organs

## **Skill Components**

**Agility** is the ability to change directions and levels quickly and efficiently. An example exercise involving agility is the shuttle run.

**Coordination** is the ability to move two different body parts simultaneously with purpose and direction. An example exercise involving coordination is jump roping.

**Balance** is the ability to hold a position and remain stable over ones center of gravity. An example exercise involving balance is a “V” sit.

**Power** is the ability to generate a large amount of force quickly; to explode. An example exercise involving power is the standing long jump.

**Reaction Time** is the ability to react or respond quickly to what you hear, see or feel.

**Speed** is the ability to move swiftly from one point to another

**Progressive overload** In order for the body to make a physiological adaptation or produce a training effect, exercise should be performed at a level progressively above that at which the individual usually performs.

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## Concepts of Health and Fitness Review Worksheet

Directions: Use the Final Exam Study guide to answer the following

- | I. <u>Benefits of Exercise</u> | <u>Elements that raise your Resting H.R</u> |
|--------------------------------|---|
| 1.                             | 1.  |
| 2.                             | 2.  |
| 3.                             | 3.  |
| 4.                             | 4.  |
| 5.                             | 5.  |

II. **TARGET HEART RATE:** Calculate the following equations.

$$220 - \text{age} \times 60\% \text{ intensity} = \text{MINIMUM HEART RATE}$$

$$220 - \frac{\quad}{(\text{age})} = \frac{\quad}{(\#1)}$$

$$\frac{\quad}{(\#1)} \times .60 = \frac{\quad}{(\text{Minimum Heart Rate})}$$

$$220 - \text{age} \times 90\% \text{ intensity} = \text{MAXIMUM HEART RATE}$$

$$\frac{\quad}{(\#1)} \times .90 = \frac{\quad}{(\text{Maximum Heart Rate})}$$

What are your minimum and maximum heart rate numbers?

Minimum Heart Rate : \_\_\_\_\_ (BPM) Maximum Heart Rate: \_\_\_\_\_ (BPM)

Task #2 : Record the following (Use the pulse sticks to get your Resting HR)

Resting Heart Rate: \_\_\_\_\_ (BPM)

III. Using the **F.I.T.T Principle**, fill in the blanks in the space below

F= Frequency    How often you exercise    Recommended 3 -5 days per wk

I= \_\_\_\_\_

T= \_\_\_\_\_

T= \_\_\_\_\_

IV. Health and Skill Components: For each Health and Skill Component listed below, include one example exercise that you can do to work that component. See the example below for help.

COMPONENT	EXERCISE
A) <u>Cardiovascular Endurance</u>	<u>Aerobic Steps for 20 min in THRZ</u>
B) <u>Muscular Endurance</u>	_____
C) <u>Muscular Strength</u>	_____
D) <u>Power</u>	_____
E) <u>Agility</u>	_____
F) <u>Coordination</u>	_____