Aerobic Endurance

Aerobic Endurance is the body's ability to exercise whole muscle groups over an extended period of time (more than 20 minutes is usually considered adequate for training). Typically, this exercise is performed at a moderate to high intensity and uses aerobic energy. Your aerobic system uses oxygen to break down carbohydrates and converts them into long lasting energy. In fact, you get more energy from breaking down carbohydrates when oxygen is present than when it is not present. After 30 – 90 minutes of prolonged exercise, carbohydrate stores are usually depleted and the body must switch to fats and proteins for additional energy, if activity continues. This is why aerobic activities are ideal for weight loss. Aerobic exercise also increases heart rate, strengthening the heart's ability to contract. Stronger contractions mean an improved, stronger blood flow, and results in a body that is better equipped for all forms of exercise.

Tips for Building Aerobic Endurance

- **Time.** Maintain your workout for at least 15 – 30 minutes at your target heart rate.
- **Try Intervals.** If you are having trouble maintaining 30 minute workouts, try staggering three 10 minute workouts throughout the day.
- **Frequency.** Workout at least 3 – 5 times a week for lasting effects.
- **Gradual Progression.** Slowly increase your aerobic activities over a period of time to improve performance. The more aerobic demands you make on your body, the stronger it gets, but gradual progression is needed to avoid injury.
- **Rest and recovery.** The body needs time to recover and grow. Alternating days and staggering intensity of workout can aid in your overall development and prevent injury. Paying attention to your body's messages -- soreness, tension, aches -- can help you figure out when to work and when to rest.
- **Variety.** Using a variety of exercises such as walking, jogging, swimming, hiking, or fitness class will develop different muscles and create better muscle and cardiovascular adaption.

Interval Training

Cardiovascular or aerobic exercise refers to the body's ability to continue movement that stresses the respiratory and circulatory system over an extended period of time. Stressing the cardiovascular-respiratory system on a regular basis will lead to a system that is stronger and more efficient.

Interval training, where repeated bouts of activities that are short in duration but high in intensity, has been shown to be as effective as longer, less intense training. For example, training using multiple, high-intensity 400 metre runs can be as effective as training using a slow, low-intensity 5 km run. However, high intensity workouts, such as interval training, require a good aerobic base and for that reason they are not recommended for beginners, as it may over-stress the body.
Measuring Aerobic Intensity

Heart Rate
Aerobic intensity is measured using heart rate. Heart rate should be monitored throughout activity and should fall within the target heart rate zone. To achieve a cardiovascular training effect, ensure you are in your target heart rate zone. Everyone is different and the best way to measure intensity for an individual is to measure heart rate. Take your pulse for ten seconds and multiply by 6.

Talk Test
Always make sure you can talk during exercise. Talking during exercise is a good indicator of exercise intensity. If you can talk in 2 or 3 word phrases, your exercise is at a pretty good intensity. If you can barely say anything, slow down.

Calculating Target Heart Rate
Target Heart Rate is the range of heart beats one should be within while performing an activity in order to help improve their aerobic fitness. Generally, this is 60 – 80% of your maximum heart rate. Maximum heart rate is calculated by taking the number 220 and subtracting your age.

Lower Limit: 0.6 × (220 – age) = __________  Upper Limit: 0.8 × (220 – age) = __________

Normal ranges for your resting heart rate are dependant on your age and fitness level. Anywhere from 55 – 75 is considered in the average range and anything more than 80 is considered as poor health.
AEROBIC ENDURANCE

1. What is aerobic endurance?

2. What does the aerobic system use to breakdown carbohydrates, fats and protein?

3. How long does it take to deplete carbohydrate stores?

4. What benefit does the heart receive from aerobic exercise and how does this affect our body?

5. What could you do instead of a 30 minute workout?

6. Why should we use slow gradations when starting aerobic exercise?

7. What is interval training? Describe it using an example that is not in the reading.

6. Measure and record your resting heart rate. Does this fall in the 55 - 75 beats/min zone?

7. Calculate your target heart rate zone and list it below.

8. What is the talk test?