CARDIOVASCULAR GUIDELINES

Aerobic exercise means you are utilizing oxygen pathways to produce energy. It is continuous and the duration is 20-60 minutes in length. Large muscle groups are utilized.

Anaerobic exercise means you are utilizing pathways without oxygen to produce energy. It is of short duration (less than 20 minutes) and is intermittent. Lactic Acid is produced as a bi-product of the energy metabolism without oxygen.

For cardiovascular exercise, start with 15 minutes in the target heart range three times per week. Add 5 minutes per week up to 60 minutes, then add one day per week up to five days per week maximum, depending on your goals.

There are three energy pathways:

1. ATP-PC (Anaerobic uses carbohydrates)
2. Lactic Acid (Anaerobic uses carbohydrates)
3. Oxidative (Aerobic uses fat)

Interval training (alternating periods of all out exertion with rest periods) may be used to work on one of the three specific energy pathways for sports, to burn more calories in a given amount of time, or increase your cardiovascular conditioning. You will want to vary the work to rest ratio to target the different pathways. You should use a 1:15 work to rest ratio to target the ATP-PC system, more of a 1:8 work to rest ratio to target the Lactic Acid system, and a 1:1 work to rest ratio to target the Oxidative System.

BENEFITS

- Increased Energy
- Increased Endurance
- Increased Circulation
- Increased Metabolism
- Stronger Skeletal and Muscular Systems
- Better Sleep Patterns
- Decreased Body Fat
- Decreased Blood Pressure
- Decreased Resting Heart Rate

INTENSITY: TARGET HEART RANGE

The intensity is based on your maximum heart rate, or for a more accurate estimate, the Karvonen formula. Almost any activity will work for your goal. It is easier to work into your target heart range with large muscle groups working, such as stair climbing, walking or rowing.

Your target heart range (THR) is a percentage range of your maximum heart rate. THR has a minimum intensity threshold in order to be effective. THR also has an upper limit that when exceeded, leads into anaerobic activity. Two different methods to determine your optimal range are:

1. Maximum Heart Rate: Using the maximum heart rate method, take 220 minus your age and multiply by 60-90% to get you target heart range (the range, in beats per minute, your pulse should stay in during the activity).

2. Karvonen Formula: Using the Karvonen formula, take your maximum heart rate (220 minus your age) and subtract your resting heart rate (best if taken first thing in the morning, before getting out of bed). Multiply this number by 50-85% and add back in your resting heart rate.