

## Aerobic and Conditioning II General Review

**Maximum Heart Rate:** 220- age

**Target Heart Rate:** Max Heart Rate x 60 to 85%

**Resting Heart Rate:** Heart Rate at rest when you first wake up.

**5K:** 5,000 meters or 3.1 miles

**10K:** 10,000 meters or 6.2 miles

**FITT:** **Frequency:** The number of workouts per day or week

**Intensity:** The effort of exercise; easy, normal or hard

**Time:** The amount of time walking or running.

**Type:** The activity that you are doing in your exercise session

**Interval:** This workout varies the duration and intensity. Example 2 minutes easy, 2 minutes hard, four times

**Date Pace:** When you are Aerobic running or walking it is pace that you can sustain at this time for your goal distance.

**Goal Pace:** The running or walking pace that you hope to attain in the near future.

**Aerobic:** The body uses oxygen for energy processes, easy or normal walking or running. The body has enough oxygen.

**Anaerobic:** The body uses lactic acid for energy and lacks enough oxygen to remain aerobic.

**Over-Distance:** Run or walk farther than your event or race distance.

**Steady State:** A 20minute run or 2mile run/walk at you best effort to date.

**Hill Repeats:** A workout that consists of running up a hill, then a jog or walk down 2 a more consecutive times.

**Jump Rope:** A 10 min jump rope work out will have the same cardiovascular benefits as a 30min running workout.

**Combining the following workouts will help you to see improvement:**

Long intervals

Short intervals

Resistance Work or Hills

Steady state or over distance

Rest

**Concentric:** the backside of your legs work to propel you along

**Eccentric:** the front side of your legs work to allow you to land smoothly.

**Running can cause:** the back of your body to gain strength faster than the front and then you get imbalances at the hips, knees and lower leg. To stay balanced, you need to:

Stretch

Lift weights

Do technique drills

Sprint work

**Warm up:** You should always do a cardiovascular warm up before you stretch. Never stretch cold muscles.

**Cool down:** After you finish your workout you should sit down and spend ten to fifteen minutes stretching out you muscles. This should be very relaxed and without pain.

**When to Eat -** You want to run on an empty stomach because your body can only use what is already digested and stored in your muscles, liver and blood. Food in your stomach during a workout will compete for blood for digestion and leave you feeling horrible. You may become dead legged, light headed, with a side ache and sick to our stomach. Try and avoid eating with in 2-3 hours of exercise.

**Hydration** Your goals should be to stay hydrated all day long. Drink all day long so when you begin your workout you wont have to tank up. Re-hydrate immediately after your workout.

**Drills that will Strength the running muscles and help prevent injuries.**

**Drill #1: Lateral Slides (down and back once)**

Lateral slides get you on your toes and work your adductor and abductor muscles. Keep toes pointed slightly inward.

**Drill #2: Over and Under (down and back once)**

Over and under add lower back rotation to your lateral slides. Keep your toes pointed slightly inward.

**Drill #3: Butt kicks (down and back once)**

Butt kicks work the hamstrings, calf muscles and powerful toe off. A good butt kick motion reduces the drag by shortening the pendulum and increase efficiency.

**Drill#4: Skips (down and back once)**

Skips work the hip flexors and the coordination of the lift element of running

**Drill #5: High Knees (down and under once)**

High Knees work the hip flexors and power phase of running

**Drill#6: Backwards Running (down and back once)**

Backwards running is the key to strong quadriceps. When you run forward, the quads are working eccentrically (lengthening slowly to set you down smoothly). The hamstrings are working concentrically (shortening to create lift). Concentric contractions build strength and flexibility at a different rate. To keep the balance, backwards running reverses the roles. This has been known to help knees. The stronger the quads, the less stress the knee takes

**Drill#7: Strides (down and under once)**

Strides are intro to faster running. This is not sprinting. It is fluid running. I like to call it “movie star running”. Run as if you are the star of the show, you are on a run, and want to look perfect but authentic.

## **PILATES PRINCIPLES**

Pilates is an exercise program that coordinates mind and body to support each other on the path to overall fitness: “sane mind in a sound body” is its goal. Joseph Hubertus Pilates, who was a frail and unhealthy child, developed it in Germany in the late 1800’s. Determined to overcome his physical weakness, he developed a specialized technique of muscle control and movement to increase circulation and cardiovascular strength and rid the body of toxins. He taught this technique, now known as “matwork,” to fellow inmates in a work camp, to help stave off the influenza epidemic of 1918. They were the only group at the camp to survive intact. While serving as a hospital orderly during World War I, Pilates attached bedsprings to the headboards of the non-ambulatory patients and began working them out using the springs as a support system. Doctors noticed that these patients improved more quickly than other, and thus Joseph began the development of his program, now known the world over.

In the mid-1920’s Joseph Pilates immigrated to New York City, where he set up his first studio. Slowly, Pilates built the studio to fame, and eventually opened up shop in the famous Bendel’s department store. The Pilates exercise program has become known as a favorite for dancers, performers, actors, celebrities, and socialites-but its true goal is to strengthen any “body.” Joseph Pilates’ wish was that his system would be incorporated into our physical education system and thus become a part of daily life.

There are six principles that help to define the purpose of the Pilates Method:

**Concentration** -The mind wills the body to perform. It is said that without mental focus during a workout, essentially only half a workout is being done. Visualization assists the individual in using the correct muscles.

**Control** - Pilates exercises require absolute muscle control to both guard against injury and to achieve full functional benefit from each movement.

**Center** - The abdomen, lower back, hips and buttocks comprise our ‘centre’, the region which Joseph referred to as our ‘powerhouse’-all energy for movement begins here, then continues to the extremities.

**Fluidity** - It is intended that the exercises be executed with optimal flow and grace. There are not static or isolated movements, and maneuvers are never rushed.

**Precision** - Each movement has purpose and each repetition of an exercise is of high quality, so favorable muscles patterning will become second nature.

**Breath** - Breathing with intention assists with muscle control. Inhaling and exhaling fully promotes purification and oxygenation of the lungs and bloodstream, which energizes the system and gives a feeling of well-being.

## **Aerobic Exercise**

Aerobic exercise conditions the cardiovascular system and improves performance in sports that require endurance, such as running and jogging, by conditioning the cardiovascular system; aerobics contributes to overall health and enhances the ability to use oxygen. Exercise designed strictly to improve strength will not do much to improve your endurance. On the other hand, if you train for endurance alone (for example, by doing only long-distance running), you will not improve your strength significantly.

### **How Aerobic Training Works**

Depending on whether you are training for endurance and aerobic benefits or for strength, you will work different types of muscle fibers. Muscles are made up chiefly of two types of fibers: (1) slow-twitch red fibers and (2) fast-twitch white fibers. The red fibers contract more slowly than the white fibers, but demand a greater amount of oxygen to do their work. White fibers contract faster than the reds, but demand less oxygen.

**Aerobic exercise** is a type of endurance training, and chiefly works the red muscle fibers, thus increasing the demand for oxygen. As the oxygen demand is increased, the cardiovascular system (the heart and lungs) is forced to work harder. In normal persons who have no cardiovascular disease, aerobic exercise increases muscular endurance and improves the ability of the cardiovascular system to meet greater oxygen demands.