

Defining Aerobic Exercise

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To benefit from aerobic exercise, you must get your heart beating within your aerobic training heart-rate zone. This zone is between 60-85% of your maximum attainable heart rate. Your maximum attainable heart rate is how fast your heart would beat if you were to exercise all-out to the point of complete exhaustion. Fortunately, you don't actually have to reach this point. You can estimate your maximum attainable heart rate by subtracting your present age from 220:

Maximum attainable heart rate = 220 minus your age

Low end of aerobic heart-rate zone = maximum heart rate x 0.6

High end of aerobic heart-rate zone = maximum heart rate x 0.85

Let's look at an example. If you are 40 years old, your maximum attainable heart rate is 180 beats per minute (220-40). Your aerobic heart-rate zone ranges from 108 beats per minute (180x0.6) to 153 beats per minute (180x0.85), so you can attain the benefits of aerobic exercise by keeping your heart beating between 108 and 153 beats per minute for 20 to 45 minutes, at least three times per week.

Exercising at 60 percent of your maximum attainable rate is so comfortable that you could maintain a conversation without getting winded. Unknowingly, most people jog at a pace that puts their heart rate between 70-75 percent of their maximum attainable rate. If you are just starting with aerobic exercise, you should aim for about 65% of your maximum attainable rate. If you are already in good shape, aim for about 75%. There is really no reason to push yourself any harder than this unless you are training for competition.

For many people it is better to slow down your aerobic exercise and cover a longer distance (or spend a longer time doing it), than to push yourself too hard and finish sooner. In terms of weight loss, you burn more fat working at 60-70 percent of your maximum attainable heart rate than you do by working at a more intense rate. Your body requires oxygen to burn fat. When you are working at a higher intensity, your body cannot deliver enough oxygen to satisfy your muscles completely. Therefore, your muscles generate proportionately more energy from burning carbohydrates than fat. So if you are trying to burn extra body fat, slowdown and spend a little more time exercising. Aim for 45 minutes per exercise session.

You will be amazed at how quickly your body adapts, once you initiate an aerobic program. We have seen a great many people who were extremely overweight or out of shape achieve fantastic results in short periods of time. We have seen first-time joggers,

who originally required an average ten or eleven minutes to complete a mile, improve their times to eight, seven or even an elite six minutes per mile.

This improvement results from an increase in the muscles' oxygen consumption and the number of sites within the body that can generate energy. With more available energy, the muscles can do more work, enabling you to run faster (or row harder or whatever). Your overall exercise performance will gradually improve as a result of regular participation. You don't have to overexert yourself. Your speed, endurance, and strength will improve as a natural response to the aerobic exercise itself. Studies show that in six to eight weeks you can improve the oxygen intake capacity of your muscles by approximately 15%.

Types of Aerobic Exercise

Any activity that keeps your heart beating within your aerobic training heart-rate zone is good aerobic exercise. It doesn't matter what you do – jogging, cycling, rowing, running up and down the stairs – anything that keeps your heart pumping fast. When the weather is bad, and you can't go out for your run, there are many popular alternatives. Stationary bikes, rowing machines, cross-country machines, treadmills, mini-trampolines, stair climbers, and swimming pools are available all year round.

In terms of calories burned, four miles of outdoor biking is equivalent to one mile of walking or jogging. This exercise is only aerobic, however, if your legs are in constant motion. The minute you start coasting, your heart rate will drop below the aerobic training zone. Keeping up this pace on city streets is usually impossible.

Aerobic classes, ironically, are not always an effective form of aerobic exercise. Many classes do not maintain your heart rate within the aerobic heart-rate zone for more than 20 minutes. Many are aimed primarily at muscle toning and flexibility. They are great as an overall conditioner, but you should still jog at least two miles after each class or get at least 20 minutes of aerobic exercise during the class.

To begin, commit yourself to an aerobic program for just eight weeks. You'll probably find that you like it.

If you have not exercised for a long time, consult your doctor before embarking on an ambitious program. Begin with 20-minute exercise sessions and gradually work up to 45 minutes. A 45-minute session maximizes the amount of fat you will continue to burn after exercising.

To cash in on the major aerobic benefits of jogging, you should cover at least 15 miles (24 km) per week. If you jog more than 25 miles (40 km) per week, however, you may develop shin splints, ankle problems, or knee problems. Jogging these long distances causes excessive wear and tear on your joints. As in most things, moderation is the key to long-term success.

Measure other forms of aerobic exercise, such as swimming and working out on stationary bikes, rowing machines, cross-country machines, treadmills, min-trampolines, and stair climbers, by the length of time you spend on them, not by the "distance" you cover in the beginning. All that matters is the length of time that your heart rate stays within your aerobic training heart-rate zone.

If you are training three days a week, these days should not be consecutive. You need to train every second day to sustain the training effect.

Don't push yourself to exhaustion. Make exercise something you enjoy. This precaution doesn't mean, however, that you shouldn't give yourself a bit of a challenge. Pushing yourself a little will add exhilaration to your exercise pattern and more quickly enable you to reduce your body fat and develop better cardiovascular health.

References:

Exercise Physiology. McArdle, Katch and Katch, 1986, Lea and Febiger, Philadelphia