

# Why and How to Do Aerobic Training, Including High-intensity Interval Training

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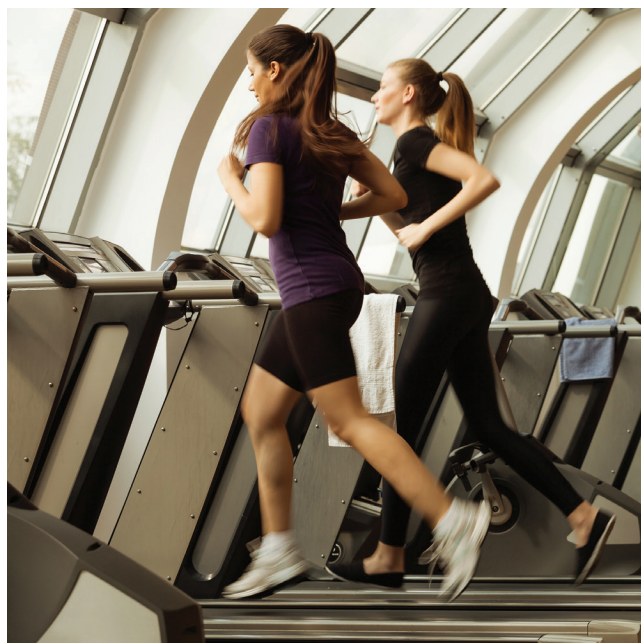
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Most of us know that getting enough exercise in our lives is important to our health; however, we may not know exactly how to get started or what kind of exercise is recommended. There are different forms of exercise, and each has its own unique benefits to our health

and our quality of life. The primary types of exercise are aerobic, strength, and flexibility training. They each have their own benefits, and they are all important when it comes to staying healthy for as long as possible.

This article will focus on aerobic training and go into greater detail on high-intensity interval training (HIIT). Some people think aerobic training is only for young people or people trying to lose weight, or that daily activities—like taking the stairs instead of the elevator or parking far away—can count as aerobic training. This guide will address many of these misconceptions.

All people can benefit from aerobic training at any age and at any fitness level, but aerobic training is different than everyday activities, such as being active with your job or kids. This guide will help you understand what aerobic training is and why aerobic training is important and beneficial. It will also present the advantages of HIIT as a particular form of aerobic training. This guide will outline the basic guidelines on what to do to implement the type of aerobic training you decide is best for you, and provide ideas on how to make it practical in your everyday life.



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## DEFINITION OF AEROBIC TRAINING

Aerobic training is a type of physical activity in which the large muscles of the body move in a rhythmic way for a sustained period of time. Aerobic training may also be called endurance or cardio training. Activities that may count as aerobic include brisk walking, running, bicycling, swimming, rowing, dancing, and hiking, just to name a few. Remember, it is important that the activity be sustained for a certain period of time (usually a minimum of 10 minutes straight) in order to count as aerobic training. For example, walking two blocks to the mailbox would not count as aerobic training, but would instead count toward daily physical activity, which is also important!



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## HOW PEOPLE CAN BENEFIT FROM AEROBIC TRAINING

There are several benefits that aerobic training can provide in our lives. Here are some of the most important ones:

- **Cardiorespiratory fitness and health.** This refers to the health of the heart, lungs, and blood vessels. People who do moderate- or vigorous-intensity aerobic exercise have better levels of cardiorespiratory fitness and health.
- **Mobility.** Aerobic training can improve movement and mobility and decrease pain in people who are suffering from diseases that impair the ability to move the body, such as arthritis and fibromyalgia.
- **Lower disease risk.** Aerobic training can reduce the risk of various diseases, including heart disease, stroke, high blood pressure, high cholesterol, diabetes, metabolic syndrome, and certain types of cancer.
- **Overweight/obesity.** Aerobic training can help to lower body fat levels or improve body composition.
- **Blood sugar.** Aerobic training can improve blood sugars and improve the use of insulin in the body.

- **Psychological stress.** Aerobic training on a regular basis may reduce the symptoms associated with depression, improve mood, and enhance mental well-being.
- **Brain.** Aerobic training can improve memory and thinking skills as well as protect against cognitive decline in the aging process.

## BENEFITS OF HIIT

HIIT may have additional benefits beyond those derived from typical aerobic training. They may include:

- Greater reductions in insulin resistance.
- Greater improvements in blood sugar control in type 2 diabetics.
- Additional decreases in body fat and abdominal fat.
- Better and faster increases in aerobic fitness capacity.
- Improvements in heart structure and function.
- Reductions of fat in the liver.
- Greater improvements in blood pressure.

## AEROBIC TRAINING METHODS

There are many ways to accomplish aerobic training. Aerobic training can be weight-bearing (walking, running, hiking, dancing, elliptical machine) or non-weight-bearing (recumbent cycling, swimming). What you choose to do is up to you depending on your goals, preferences, physical limitations,



or availability. You might decide to do cross-training, in which you do different types of aerobic training exercises in the same workout (swim, then bike, then run). There are different types of aerobic training methods that can be considered:

- **Continuous training:** After a period of warm-up, a specific speed or intensity is chosen and followed for the duration of the workout until the cool-down period.
- **Interval training:** After a period of warm-up, periods of higher-intensity exercise are separated by periods of lower-intensity exercise.

The length and intensity of each of the higher- and lower-intensity periods can vary (usually from 30 seconds to 5 minutes in length). The session concludes with a cool-down period.

- **High-intensity interval training:** After a period of warm-up, periods of highly vigorous exercise are separated with periods of recovery (lower-intensity exercise). The length of each of the vigorous intensity and recovery periods varies (vigorous is typically 30 seconds to 2 minutes in length, while recovery may be 1 to 3 minutes in length). Some intervals may go beyond vigorous intensity into “all-out” or “near-exhaustion” intensity.

There is no one right way to do aerobic training. The most important principle is to take the time to do it. You do not have to stick with only one method of aerobic training. You can mix up the methods you use each time you work out or even mix up the methods within one particular workout. You have as many options as you would like. The type of method(s) you decide on for aerobic training may depend on personal preference, access and availability, convenience, or comfort level with the different methods. It is important to choose methods that are safe and practical for you. Moderate-intensity exercise is generally safer for beginners than vigorous intensity. As fitness levels improve, you can add periods of more vigorous exercise to see how you feel and how your body responds.



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## RECOMMENDATIONS FOR GENERAL AEROBIC TRAINING

The focus in this article is for adults who want general aerobic training recommendations to improve their overall cardiorespiratory fitness. The recommendations provided here are not for advanced aerobic training regimens, nor for sport-specific training routines.

It is important to note that aerobic exercise improves fitness in individuals with some disabilities, including people who have lost the use of one or both legs and people with multiple sclerosis, stroke, spinal cord injury, or cognitive disabilities. Moderate-intensity aerobic exercise is also safe for healthy women during pregnancy because it increases fitness levels without increasing the risk of pregnancy loss, pre-term delivery, or low-birth-weight babies. Always speak with your doctor before beginning any new exercise routines.

### Intensity of Exercise

Quantity and quality are important to achieve maximum benefits from aerobic training. The recommendation is that aerobic training should be moderate to vigorous in intensity. In fact, without reaching sufficient intensity, you may not see any differences in fat loss, fitness levels, or blood work measures.

So how do you know if the training you are doing reaches these levels of intensity? One way to estimate the intensity of your exercise session is

to understand what heart rate zone you should be training in. This usually requires working with a certified exercise professional who can guide you in determining the heart rate zone that is specifically best for you; you would then regulate your aerobic training sessions using a heart rate monitor. If you are not able to go this route, there are other ways to assess your aerobic training intensity without consultations or high-tech equipment.

**1. Rating of Perceived Exertion (RPE) Scale**

The RPE scale is one way to measure physical activity intensity level. Perceived exertion is based on how hard you feel your body is working during the exercise. Exertion is judged by the sensations you experience during exercise, including your heart rate, breathing rate, sweating, and fatigue. It is based on how you feel on a scale from 6 to 20, where 6 is feeling no exertion and 20 is maximal exertion. Exercising between a 12 and 14 represents moderate exertion. Vigorous-intensity exercise reaches levels of 15 and 16. During HIIT, you can reach levels of 17 to 19 during vigorous intervals. Most people have difficulty reaching vigorous levels of exercise intensity without a trainer pushing them to reach those levels. Although HIIT is an effective and efficient training method, you have to be very motivated to push yourself to those levels of intensity.

Borg's Rating of Perceived Exertion (RPE) Scale	
Perceived Exertion Rating	Description of Exertion
6	No exertion; sitting and resting
7	Extremely light
8	
9	Very light
10	
11	Light
12	
13	Somewhat hard
14	
15	Hard
16	
17	Very hard
18	
19	Extremely hard
20	Maximal exertion

**2. The Talk Test**

The Talk Test can also be used to assess aerobic exercise intensity. If you are doing moderate exertion during exercise, you should be able to talk easily, but not be able to sing a song during exercise due to the level of exercise intensity. During vigorous exertion, you should be able to talk in short phrases or respond to questions, but not in complete sentences and certainly not able to hold a conversation. During HIIT, you might be able to grunt or utter a word during an interval, but speaking several words in succession would be difficult.

**Amount of Time or Duration and Number of Days per Week**

It is recommended that adults get at least 150 minutes (2.5 hours) of moderate-intensity exercise per week.

- If the 150 minutes are divided over the week into five exercise sessions, then the duration would be 30 minutes each day of moderate-intensity exercise.
- One continuous session of 30 minutes or multiple shorter sessions of at least 10 minutes each session (for example, three sessions in one day of 10 minutes each) each day are both acceptable.
- By increasing intensity to vigorous levels, three exercise sessions per week of at least 30 minutes, for a total of 90 minutes per week, may be sufficient.

Note that greater amounts of exercise than defined above may result in even further reductions in the risk of cardiovascular disease as well as body fat reductions.

**PREVENTING INJURY**

- **Warm-up.** Always begin any aerobic training session with a warm-up period. This is a period of at least 5 minutes of lower-intensity, active exercise. The warm-up should involve active or dynamic movements of muscles rather than passive stretches in which you find a stretching position of discomfort and hold it. Studies are mixed on whether stretching prior to exercise prevents injury.

- **Gradual progression.** You should begin with lower intensities and durations of aerobic exercise and gradually progress to longer, more intense sessions.
- **Appropriate exercises and equipment.** Choose appropriate forms of aerobic exercise suited to your condition and needs. Be sure to use all equipment properly and ask for help if you are not sure how something works. Wear proper fitness clothing and footwear to prevent injuries.
- **Proper technique.** Be sure to use correct body positioning in your exercises, and consult with a certified trainer if you are not sure how to position your body in whatever exercise you choose. Some examples might be how to properly position yourself when walking or jogging on an inclined treadmill, or how to position your body when using a rowing machine. This will not only help you to prevent injuries but also ensure you get the best results from your exercise.
- **Listen to your body.** Stop if you feel pain or experience anything that does not feel right and consult with your doctor.
- **Stay hydrated.** Be sure to drink plenty of fluids during exercise sessions, especially if you are in hot or dry environments, are at high altitude, sweat excessively, or have any conditions in which fluid intake is important.
- **Cool-down.** Always end every aerobic training session with a cool-down period. This period should be at least 5 minutes of lower-intensity exercise to allow your heart rate to come down to almost pre-exercise levels. Be careful when stopping and getting off of any aerobic training equipment because the transition can cause lightheadedness or loss of balance.
- **Stretch after exercise.** After the cool-down period, you should stretch your muscles by using passive stretching techniques. Find a position



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of slight discomfort in a stretching position and hold the stretch for 10 to 30 seconds each. At a minimum, you should stretch any muscle groups used during exercise.

### TIPS FOR OVERCOMING BARRIERS AND INCORPORATING AEROBIC TRAINING IN YOUR LIFE

- Find a workout partner.
- Attend a group fitness class.
- Make the exercises accessible and fun.
- Choose exercises that are convenient and practical in your environment.
- Break up your workout into segments throughout the day. It does not have to be done all at one time. Remember that at least 10 minutes of moderate- to vigorous-intensity, continuous exercise is the minimum.
- Exercise at home during your favorite shows.
- Schedule your exercise sessions into your day like you would any other important appointment.
- Pack your gym clothes ahead of time and have them ready to go when you start your day.
- Download good workout music or even podcasts of interval training workouts you can follow along to.



## BEFORE GETTING STARTED

Speak with your doctor to ensure you do not have any medical conditions that would limit your ability to engage in aerobic or HIIT training. Although HIIT has been shown to be safe in people with heart disease, diabetes, asthma, or obesity and in older adults, your physician may want to conduct specific testing before approving this level of intensity of exercise. Aerobic exercise may not be recommended if you experience chest pain, lose your balance due to dizziness, or have specific medical conditions. You may also need to modify what type of aerobic training you do if you have a bone or joint problem that could be aggravated or worsened by certain types of exercises. If you are cleared for exercise by your doctor but experience pain or discomfort during exercise, you should stop the exercise and consult with your doctor.

There may be enhanced health benefits when aerobic training is combined with strength training. For more on strength training, see NMSU Extension Guide I-111, *The Benefits of Strength Training and Tips for Getting Started* ([http://aces.nmsu.edu/pubs/\\_i/I111.pdf](http://aces.nmsu.edu/pubs/_i/I111.pdf)).

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