

Making the Most of Your Cardio Workouts

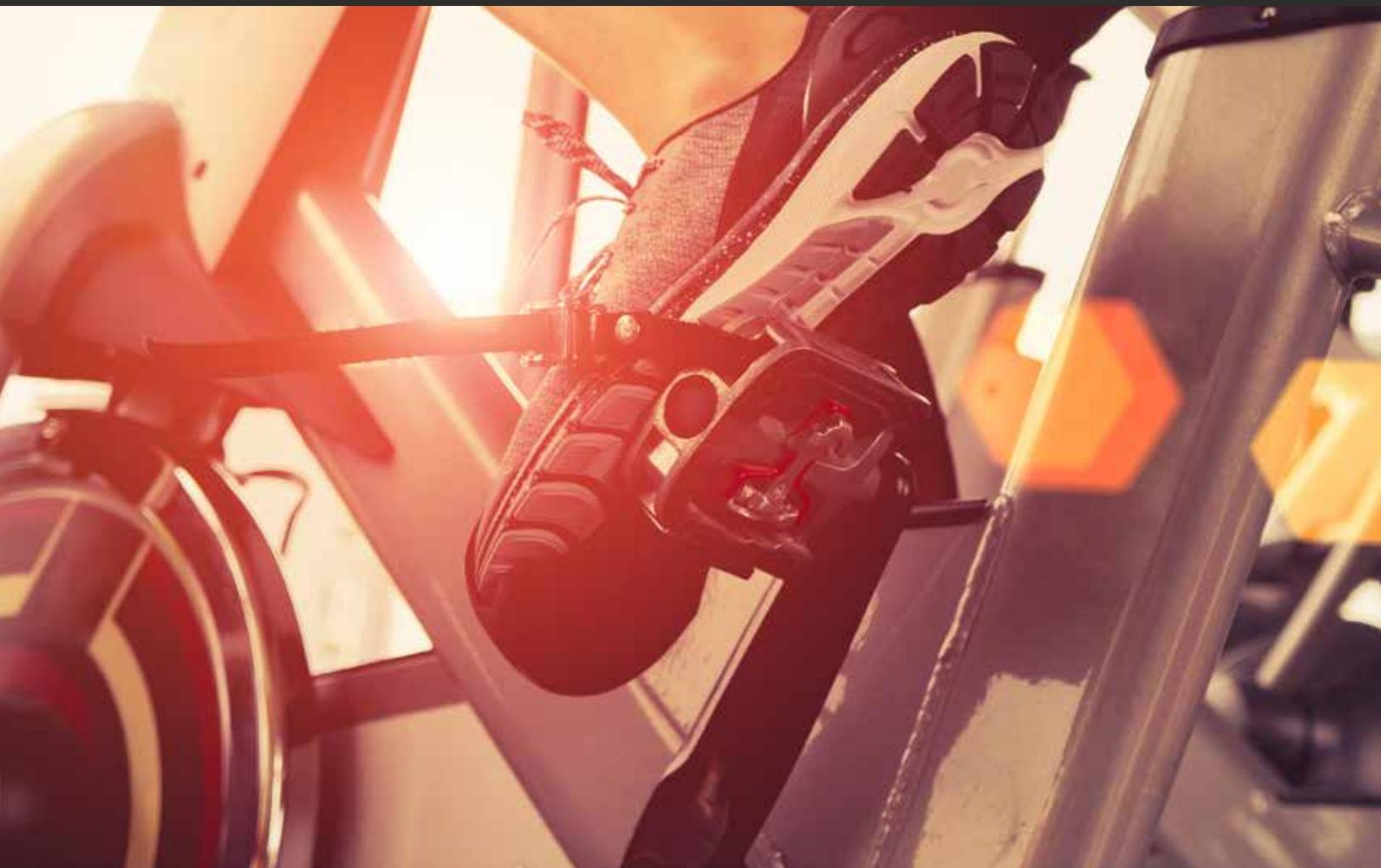


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Cardio Workouts: Fitness We Love to Hate



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Cardio Workouts: Fitness We Love to Hate

Among the complaints heard from people who don't like to do cardio work is that they find it boring. They can't handle the idea of jogging for long periods at a time or doing the equivalent on the treadmill, elliptical machine, or exercise bike.

To that end, cardio workouts are widely misunderstood. There are enough options available both at home and in the gym to keep you or your clients from being boring. And, when done with a purpose, the benefits of cardiovascular exercise are achievable in as little as 20 minutes.

Just as you can be creative with your strength-training program to keep things fresh and provide variety, the same holds true for cardio training. The benefits of cardio training are many. It promotes heart health, controls cholesterol, and lowers blood pressure. Cardio work also helps to burn fat, boost metabolism, and make it easier to control your weight. People who regularly do cardio work may feel less stress and anxiety and are less likely to have sleep-related issues.

Cardio workouts improve aerobic fitness, which is the ability to transport and use oxygen while training. Over time, your body adapts to the demands placed upon it, which leads to the ability to take on a heavy workload. As with any type of workout, your beginner clients should take things at a slow pace. Get them used to the movements and build up their endurance. Consider their fitness level when doing any type of cardio workout. Use this simple formula to identify your client's maximum heart rate (MHR): Subtract their age from 220 for their MHR.

For beginners, a low-intensity workout would equate to working at 40-50 percent of one's maximum heart rate. A moderate workout would come in at 50-70 percent of the maximum and high-intensity workouts reach 70-85 percent of the max.

Generally, cardio workouts last between 25 and 45 minutes, two to three times per week to benefit. Those who adopt a two-to-three day a week aerobic workout routine usually strive to work at 55-85 percent capacity.



Cardio Workouts: Fitness We Love to Hate

Popular Cardio Workouts in the Gym

Belonging to a full-service gym provides numerous options for creating an effective cardio workout. Treadmills, ellipticals, stationary bikes, and rowing machines are the type of equipment that can be used exclusively or in some combination to strengthen the heart and burn fat.

Most people have a favorite machine for cardio work, but mixing it up helps keep things fresh while also varying the muscle groups you work.

For those looking to lose weight, there's no question that [cardio workouts](#) play an important role in achieving fat loss. Combined with a healthy diet, cardio training can deliver results that are both immediate and long-lasting. High-intensity interval training, or HIIT, is an excellent option. It consists of periods of high-intensity exercising followed by brief recovery. The demands on the body during the intense sessions lead to it asking for more oxygen during recovery, which helps maximize fat and calorie burning.

Tabata training is a popular form of interval training. It involves going all out in an exercise for 20 seconds, such as cycling, followed by 10 seconds of rest. Repeat the sequence for three to four minutes.

Instruct your clients to do the same with three other forms of cardio for a tough and rewarding workout. As the workouts become more intense, it is important to make sure you are [burning fat and not muscle](#).

Cardio Options Outside the Gym

Excellent cardio workouts are attainable without the aid of expensive or elaborate equipment. Jumping rope is an old standby and remains an excellent cardio exercise, with the potential to burn up to 1,000 calories in an hour. An excellent jump rope program begins with jumping rope for 30 seconds, followed by a minute of rest. Repeat for a total of six sets. The goal is to be able to add 10 seconds to each set every week.

Ultimately, getting to the point where each set contains three minutes of jumping rope and 30 seconds of rest will signal a high level of cardio fitness.



Cardio Workouts: Fitness We Love to Hate

Calisthenics, or exercise movements without the use of equipment, have come a long way, too, from the basic trio of jumping jacks, sit-ups, and burpees (although they remain excellent elements of a cardio workout.) The power skip (raising the knees high), running in place with high knees, and plank jacks are three good examples of cardio exercises doable in the tightest of spaces and without any equipment.

As one gains experience and adds strength and balance, the movements can become more complex. The possibilities are endless. That's hardly boring.

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Is Cardio Really the Secret to Fat Loss



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Is Cardio Really the Secret to Fat Loss

One of the most talked about subjects in the fitness industry is this: Cardio and fat loss.

Here's what your clients (and yes, even us trainers too) want to know:

- Is cardio really necessary for fat loss?
- Which type of cardio will optimize fat loss: LISS (low-intensity steady state cardio) or HIIT (high-intensity interval training)?

The good news is that there is clear research that can answer these questions. First, let's look at what cardio is and what the different types do for your body.

Aerobic vs. Anaerobic Training

There are two basic types of physical training: aerobic and anaerobic. To understand how our bodies lose fat during training, and to be better able to explain it to your clients, you need to know what these terms really mean, technically and practically.

- **Aerobic activity.** Aerobic training requires the presence of oxygen. It is the type of activity that primarily works type I muscle fibers. This helps to increase muscle endurance and capillary size and generally helps the heart muscle pump blood more efficiently. Aerobic activity is done at a pace you can sustain for an extended period; think 50 to 70 percent of VO_2 max and a heart rate between 120 and 150 BPM: lower intensity jogging, swimming, or biking, for example.
- **Anaerobic activity.** This is just the opposite of aerobic activity. Anaerobic training is exercise that does not require the presence of oxygen. It works the type II muscle fibers, which leads to greater size and strength of muscles. Sprinting until you gas out or resistance training with heavy weights is anaerobic. When you work at 90 to well over 100 percent of your VO_2 max performing anaerobic activity, oxygen builds up, lactic acid builds up, and you start to feel the burn.¹ You can't sustain this kind of activity for extended time periods like you can with aerobic exercise.

LISS is aerobic activity, while HIIT is anaerobic. Before we answer the question of which is better, why do cardio at all?



Is Cardio Really the Secret to Fat Loss

Do You Really Need to Do Cardio to Lose Fat?

The quick answer is no. You do not need to do cardio exercise to lose fat. You can lose fat by restricting caloric intake, by doing resistance training, or by a combination of both.

The main factor in losing body fat is taking in fewer calories than you expend. Cardio can help you expend more calories but is not necessary.

Restricting caloric intake is an obvious solution to fat loss. If you consume fewer calories, you will burn and lose more fat. But, what about resistance training? How does that help with fat loss?

[Resistance training](#) is one of the best ways to get lean because it builds muscle.² When you add muscle, you raise your resting energy expenditure (the number of calories you burn when you're just sitting still).

Muscle tissue requires more calories to function, even at rest, than fat tissue. The more muscle mass you have, the more calories you burn per day.

Which Type of Cardio Maximizes Fat Loss?

Just because cardio isn't necessary for fat loss doesn't mean you shouldn't do it. [Cardio has other benefits](#), especially for health, and can contribute to your calorie deficit. So, which is better, aerobic LISS or anaerobic HIIT?

A traditional outlook on cardio and fat loss is that a good, long, low-intensity workout on an empty stomach will lead to the greatest fat loss. A long, slow run first thing in the morning is the go-to daily workout for a lot of people.

Views on this are changing, though, with research to back it up. What the current research tells us is that HIIT is a powerful way to lose fat, as compared to LISS training. Lower intensity aerobic cardio leads to less fat loss and may even hinder muscle growth when compared to HIIT workouts.³



Is Cardio Really the Secret to Fat Loss

For example, one study found that fat oxidation, the use of fat molecules for energy, was significantly higher after six weeks of interval training.⁴ Carbohydrate oxidation, the use of sugar for energy, was lower. In other words, HIIT caused the body to target fat stores for energy, which means greater fat loss.

In another study, researchers compared individuals doing LISS for several weeks to those doing HIIT over the same period. Fat loss in the HIIT group was up to nine times greater than in the LISS group.¹

One reason that may help explain the greater fat loss experienced with HIIT is that this type of exercise may increase EPOC, excess post-exercise oxygen consumption.¹ After a HIIT session, you continue to oxidize fat, more so than after a LISS workout.

Researchers have also found that HIIT workouts can increase the levels of growth hormone in the body, which also may contribute to fat loss.⁵

The Bottom Line

There is a time and a place for all types of exercise and both types of cardio. Both aerobic and anaerobic training provide a lot of benefits. The definitive answer, for now, is that [HIIT is the front-runner](#) when it comes to burning fat.

So, if your client's number one goal is to lose weight, focus on HIIT, but don't leave out other types of training. Also, remember that if your client is a beginner, HIIT may not be the right method of training right out of the gate. They may need time to work up to a fitness level where they feel comfortable enough to start performing interval workouts. Resistance training builds muscle and leads to higher resting energy expenditure.

LISS training also has benefits, including increased muscle mass in the heart, better disposal of metabolic waste, more use of fat as a fuel instead of sugar, and in fact, increased fat oxidation. LISS may not burn as much fat as HIIT, but it does the job and it provides health benefits and a little variety.⁴



Is Cardio Really the Secret to Fat Loss

Now that you have the answers to the most pressing questions about cardio workouts and fat loss, you can better plan a fitness schedule for yourself and your clients.

Ready to add more to your bank of knowledge and skillset for personal training? Sign up for the [ISSA's Strength and Conditioning course!](#)

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Do Cardio and Strength Training Actually Work Against Each Other



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I'll be honest: Early on in my training career, I didn't really know what I was doing. My personal training skills consisted of coaching basic exercise technique, yelling out words encouragement, and making sure that every client I trained worked up a good sweat by the end of the training session. Training with me in my early days was the equivalent to training with a very mediocre (at best!) fitness DVD. While my clients usually received some general body composition and fitness improvements from this technique, I started to feel very inferior and bit like a fraud as a trainer—and rightly so. I could get people “in-shape,” but I didn't know how to improve their performance.

I didn't even realize this until a client asked me “Why?” after an exercise I gave him. If I prescribed a squat for 4 sets of 8 repetitions he would ask, “Why am I doing this instead of a squat for 5 sets of 3 repetitions?” If I prescribed a moderately paced 3-mile jog on a day we weren't training together, he would ask, “Why am I doing this instead of 400-meter intervals?”

I was frustrated with his questions, but what was really bothering me was the fact that I couldn't provide a satisfying answer—for him or me. I would usually ramble off something totally uninformed (and unprofessional) like, “Well, this is how (fill in your favorite athlete, model, bodybuilder, celebrity trainer, etc.) trains, so it clearly works.” Or, “This is what my college strength coach had the football team do.” Or worst of all, “It worked for me, so it will work for you too.”

These were very embarrassing conversations for me to have as a young, inexperienced professional. Even writing or talking about it now is uncomfortable as I recall how poorly prepared I was to give meaningful answers to legitimate questions from a person who trusted me with their physical fitness. However, I share my experience with you so you do not have to go through the same thing.



Do Cardio and Strength Training Actually Work Against Each Other

Be Informed, Not Embarrassed

Know the science—it's your friend! As professional trainers, the initial prescriptions we make should be the result of our own review of scientific data. We don't need to read every piece of published scientific literature; this would be extremely time-consuming and, frankly, really boring. We do need to have a firm understanding of how to apply major pieces of research to achieve specific results. Would you want a doctor to give you a medication because they saw that it works on an infomercial? Of course not! We expect our doctors to have reviewed the medication's clinical trials and know that it will make us healthier in the way they say it will. In this same manner, our clients expect us to have a basic understanding of exercise science research before we give them an exercise program.

Let's apply this to a very common question:

Should we get on the treadmill and lift on the same day?

Or more accurately, should we perform steady-state aerobic training and resistance training in the same training cycle (often referred to as concurrent training)?

Resistance training and steady-state aerobic training both provide fantastic benefits. However, some of the physiological changes caused by resistance training are in direct opposition to those caused by aerobic training and vice-versa. For example, strength training promotes gains in strength, power, and hypertrophy (increase in muscle size) but promotes a decrease in mitochondrial density (a key factor in one's aerobic endurance capacity). On the other hand, steady-state aerobic training increases the oxidative capacity of the muscle (the extent to which muscle can make use of oxygen) but promotes a decrease in maximal power output and a possible decrease in Type II (fast-twitch) muscle fiber size. You can read the research that proves this - or just put a marathon runner and powerlifter next to each other. I'm confident you'll see the differences.



Do Cardio and Strength Training Actually Work Against Each Other

This has led to the popular belief that concurrent training leads to “adaptation interference,” meaning that the benefits of one training mode negate the other when performed in the same training cycle and they prevent the individual from receiving maximal benefits from the training program.

Let's get Science-y

This belief is supported: a study performed in 1980 by RC Hickson demonstrated this idea.¹ Over 10 weeks, three exercise groups followed three different programs: a strength training only group (S) trained 5 days per week, an endurance training only group (E) trained six days per week, and an S and E training group (concurrent training) performed the same daily exercise regimens as both the S and E groups. The results of the study showed that the S-only group had significantly greater strength gains than those in either the S and E (concurrent training) group or the E-only group. Surprisingly, however, the group performing the concurrent training program showed equal improvements in VO₂max (or maximal oxygen uptake, which is a measure of how much oxygen your muscles can suck out of your blood and use. It's really, really important to athletic performance) when compared to those in the E-only group.

Getting to the Point

The relevant question is whether concurrent training always interferes with resistance training adaptations. If my goal is to improve strength and power, do I need to avoid aerobic training at all costs? Is there ever a time when concurrent training will benefit an individual or athlete looking to receive positive adaptations from resistance training? Fortunately, there's more science to answer those questions! An analysis of 21 studies on concurrent training conducted in 2012 by Wilson et al. revealed some very interesting data on this subject.²

- **Power** (the ability to generate force quickly) is the major performance variable that is negatively affected by concurrent training. Strength training alone allowed for *significantly* greater power development when compared to strength training concurrently with aerobic training.
- Strength training alone allowed for significantly greater **strength** and **hypertrophy** gains in the lower body when compared to strength training concurrently with aerobic training. *However, this only occurred when the aerobic exercise modality was running.*



Do Cardio and Strength Training Actually Work Against Each Other

- Cycling concurrently with strength training did not significantly affect lower body **strength** and **hypertrophy** gains when compared to strength training only.
- Regardless of the aerobic training modality choice, **strength** and **hypertrophy** gains of the upper body were unaffected by concurrent training when compared to strength training only.
- The total volume of aerobic training is likely a determining factor in whether concurrent training significantly negates strength, power, and hypertrophy gains. Aerobic training three days per week or more for longer than 20-30 minutes led to more interference with strength, power, and hypertrophy gains than a lower volume of aerobic training.
- Concurrent training led to a significantly greater reduction in body fat percentage when compared to strength training alone or endurance training alone.

One important note, the studies reviewed in this meta-analysis did not investigate the relationship between High-Intensity Interval Training (HIIT) and strength, power, and hypertrophy gains. It is generally acknowledged that HIIT will not negatively affect these resistance training adaptations and may even enhance them. For more information on this topic [check out this terrific article by Mr. Josh Bryant and Dr. Fred Hatfield.](#)

Applying the Science

The analysis above shows us that concurrent training only creates significant adaptation interference under certain conditions. After establishing a base level of fitness, the following guidelines derived from this analysis will help to ensure that you and your clients are able to avoid this interference effect.

- If the client's primary goal is to improve power (e.g. improving sprint speed, vertical jumping, Olympic Lifting, etc.), keep long duration/low-intensity aerobic training to a minimum.
- If the client's primary goal is to improve strength and/or hypertrophy and he/she wishes to train concurrently with aerobic training, it is best to keep the duration of aerobic training to less than 30 minutes and the frequency of aerobic training to fewer than 3 days per week. Furthermore, a low-impact mode of aerobic training such as cycling or rowing appears to be a more appropriate option than running.



Do Cardio and Strength Training Actually Work Against Each Other

- If the client's primary goal is fat loss, encourage concurrent training, as it produces a greater reduction in body fat percentage than either strength training alone or aerobic training alone.
- If the client's primary goal is to improve aerobic performance, concurrent training is advisable as resistance training has not been shown to significantly interfere with aerobic capacity gains.

Go forth and train wisely!

Our responsibility as professional trainers is to make exercise prescriptions that are rooted in scientific research, but the guidelines are not the final word on how to design a program. Rather, they are a starting point to consider, from which adjustments can be made based on progress and individual needs. All bodies are different, and certain individuals will undoubtedly react more negatively to concurrent training than others. However, the interference effect is a variable that we as trainers must be aware of, especially when we start to work with advanced trainees. The name of the program design game is specificity. The more specific we can make our program design to our client's performance objective, the greater our clients' chances of success!



Do Cardio and Strength Training Actually Work Against Each Other

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