CARDIO BEFORE OR AFTER WEIGHTS

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There isn't a magic formula when it comes to doing cardio or weights first.

Like many people, you probably face this constant conundrum when you walk into the gym: Should you do cardio before or after lifting weights?

The short answer is: It largely depends on your goals.

For example, if you're training for a marathon or any long-distance run, I would prioritize your run before strength training so you can focus on that without the distraction of your legs being fatigued. On the other hand, if your goal is to build stronger glutes, you might want to hit the squat rack before the treadmill. There's so much more muscle recruitment needed in strength training, so you would want to save all the energy you can for it.

That said, even if you don't have a super-specific goal and want to train for better overall fitness, it's important to combine cardio and strength wisely so you don't overwork the same muscle groups. According to the American College of Sports Medicine, doing similar endurance and strength training back-to-back doesn't allow for adequate recovery and could lead to fatigue and poor performance (thus increasing your injury risk), so you should carefully consider the type of exercises you're doing.

WHEN TO LIFT WEIGHTS BEFORE CARDIO

If you have a specific strength goal—you're looking to PB on your deadlifts or perfect the Turkish get-up—you want to make the weight room your first stop.

Here's why: Your muscles are like a rubber band—it needs to be taut enough to restrict whatever it's wrapped around. If you take the rubber band and repeatedly pull it, it becomes too loose and unable to hold objects together. Your muscles work the same way. The repetitive movements in cardio reduce your muscles' ability to contract effectively, leaving you disadvantaged if you're doing pure strength training and lifting for maximal effort right afterward.

SCIENCE BACKS UP THE WEIGHTS-BEFORE-CARDIO PLAN.

A 2018 study in the Journal of Strength and Conditioning Research recruited 11 healthy and fit men and examined their strength performance 10 minutes after a vigorous aerobic endurance workout—running on a treadmill at moderately-hard, very hard, or maximal intensity for between 20 and 45 minutes. The resistance exercises included the high pull, squat, bench press, deadlift, and push press. These strength exercises were performed for 3 sets of 6-10 reps at 70 to 80 percent of their one-rep max, with a three-minute rest interval between sets. Results showed that their performance on the strength moves was significantly compromised after the aerobic workouts. Participants performed fewer reps with the squats and power was reduced for the high pull, squat, and bench press after doing most of the aerobic workouts.

Muscle cells store something called glycogen, which fuels muscular contractions. Glycogen is made from carbohydrates that your body breaks down into fuel. When your body converts glycogen into energy it becomes adenosine triphosphate, otherwise known as ATP. This process produces by-products that can be recycled back into ATP and used as energy. Your body uses glycogen as fuel during higher-intensity exercise like lifting weights, and create these by-products which can be used as fuel for lower-intensity activities like steady-state cardio.

WHEN TO DO CARDIO BEFORE WEIGHTS

As mentioned, if you're training for a big endurance event such as a triathlon or marathon, you generally want to use your energy for your cardio efforts and do them first.

Even if you're not focusing on a cardio-specific goal, there are some instances when squeezing in some cardio before strength work can be beneficial—namely, as a warm-up. Doing cardio before strength can be an effective strategy for ensuring the body is properly warmed up and prepared for the challenges of the strength exercises. Doing some light, steady-state cardio—about 10 minutes—before any intense effort or activity prepares the body for exercise or performance.

If you have a specific strength-related goal, like deadlifting a certain amount of weight or learning a specific technique (such as an Olympic lift or kettlebell move), keeping it low-intensity is key. You should steer clear of HIIT and instead opt for steady-state cardio to limit the risk of fatigue affecting the strength workouts. In fact, a 2016 study published in the Journal of Strength and Conditioning Research found that when exercisers did a low-intensity warm-up for 15 minutes, they were able to lift more weight in a one-rep max test on the leg press machine than those who did no warm-up, only warmed up for 5 minutes, or did a moderate-intensity warm-up of any length.

However, if you're just strength training for general fitness, you can go a little harder with your pre-weight lifting cardio. If someone is doing strength training for general fitness—meaning no specific goals—doing steady-state or aerobic intervals for 15 to 25 minutes, or a short HIIT session of five to eight minutes, would be okay before strength training.

WHAT IF YOUR GOAL IS TO LOSE WEIGHT?

When it comes to weight loss, it doesn't really matter which you do first—but strength trumps cardio, in terms of general importance. Most people will focus on doing more cardio when they're trying to lose weight because it burns more calories, but it's far better to do strength training two to three days a week.

Why? Strength training helps you increase or maintain lean body mass, which will burn more calories in the long run. The more muscle mass you have, the higher your resting metabolic rate (the minimum number of calories your body needs to perform normal bodily functions).

When you do heavy weight training with shorter rest intervals, you produce greater excess post-exercise oxygen consumption (aka EPOC), which are the calories you burn long after your workout. That's because it demands more on the anaerobic (oxygen less) energy pathways during exercise, which increases the need for oxygen post-workout.

So, the more intense your lifts are—and the less rest you take between sets—the more EPOC you'll produce.

That said, you shouldn't skip cardio altogether. Ultimately, you use more energy and expend more calories doing aerobic training because you're moving consistently, whereas, with strength training, you may be using two-thirds of your time recovering, so adding some cardio can increase your overall calorie burn.

If you want to lose weight, it's also important to increase your non-exercise activity thermogenesis—aka any movement or physical activity you do outside the gym. Taking more walks, parking your car farther from the entrance and walking up the stairs instead of the elevator are all examples that will increase your calorie burn.

HOW TO EFFECTIVELY COMBINE CARDIO AND STRENGTH

Fun fact: Regardless of whether you do cardio or weights first, there's a handy word to describe a workout that combines both strength and cardio into one session: concurrent training. And, for the general public interested in using exercise to maintain healthy body weight, doing both cardio and strength in the same workout can be effective for expending energy and building muscle without any real risks.

In fact, a July 2016 study in the Journal of Strength and Conditioning Research enlisted 23 inactive female college students to follow an eight-week exercise program, which involved either doing endurance before resistance training or resistance before endurance training. The endurance portion consisted of 30 minutes of aerobic exercise at moderate intensity and the resistance portion involved performing 3 sets of 8-12 reps of five or six different strength exercises. Researchers found significant improvements in performance, strength, and lean body mass, regardless of exercise order.

The bottom line: You want to prioritize your workouts according to your goals. If you're focused on lifting a certain amount of weight or mastering a new exercise, then you should hit the weight room first and supplement it with some steady-state cardio on the treadmill, rower, or bike. On the other hand, if endurance is your goal, you should save your energy to go the distance and couple the stamina-building workouts with low-weight, high-volume strength training.