

Resistance Training vs. Cardio for Weight Management

By Chris White

The aim of this article is to objectively detail which training style is most effective for weight management: resistance training or cardiovascular training.

The basis for much of this data is purely observational, the result of years of seeing what works and what doesn't. I worked at a commercial gym for almost ten years from 1996 to 2006. Over the course of my time there I would consistently observe hundreds of "overweight" people pedaling away on the same Stairmaster, elliptical machine, or recumbent bike four to five times a week yet never managing to change their body shape.

What gives? Without taking other factors into consideration, like food quality, overall stress levels, sleep, hydration, and blood sugar management, it's hard to make stern statements about why certain methods do or don't work, but there *are* clear physiological differences between resistance training and cardio that are worth mentioning in regards to weight loss.



Anabolic Rebound

The first and perhaps least obvious difference is the hormonal responses of resistance training and cardiovascular training. All training, irrespective of its nature, results in cortisol, a catabolic (tissue destructive), stress hormone. There are two very important points here. One, the total time spent under stress doing resistance training (based on a 16 sets workout, with an average time under tension of approximately 30s per set) is only about 8 minutes. Compare that to a thirty-minute cardio session and it's clear that resistance training is far less stressful from a hormonal perspective than

cardiovascular training. Chronic elevation of cortisol can deplete the adrenal glands, slow down the thyroid, and decrease basal metabolic rate. A decreased metabolic rate means less energy expenditure throughout the day and potentially less “burning” of body fat.

Conversely, all resistance-training results in what is called an anabolic rebound. In other words, after the initial catabolic surge, a tissue repair phase inevitably follows. This tissue repair phase produces anabolic hormones like testosterone, human growth hormones, and estrogen. These hormones, unlike cortisol, are more conducive to muscle growth. Higher percentages of lean muscle mass increase basal metabolic rate and overall energy expenditure for up to 48 hours post-training.

Calorie Inefficiency

The biggest reason people don’t change their body doing cardiovascular training alone is because they have invariably adapted to their program. For instance, let’s say the first time you walk on a treadmill for thirty minutes you burn approximately 300 calories. The next time you step foot on that treadmill that same thirty minutes results in only 280 calories burned. The next day 260 calories are burned. In other words, the body becomes more efficient. It adapts to the cardiovascular stimulus and requires less energy to do the same amount of work. Furthermore, there is no anabolic rebound or post-training elevation of energy expenditure.

Resistance training allows for much more variety, thwarting energy efficiency. By varying exercise selection, sets, reps, rest periods, and tempos the stimulus is constantly changing forcing a less efficient use of energy and less chance of accommodation.

Improved Function

Of the hundreds of people I’ve worked with most possess some form of biomechanical dysfunction. Below is a list of the most common biomechanical issues I see in the gym on a fairly regular basis:

Over Pronation

Under Pronation

Medial Knee Instability

Trendelenburg / Lateral Pelvic Instability

Lack of Frontal Plane Pelvic Mobility

Lower Abdominal Weakness

Hypo mobile Lumbar and Thoracic Spines

Hyper mobile Lumbar Spine

Upper Cervical Subluxation

The point I'm trying to make is most of clients present with one or more biomechanical dysfunctions. This is important considering what is required from a biomechanical standpoint to just walk. Every time we take a step we absorb 4x bodyweight. If the pace increases that load multiplies to approximately 10x bodyweight. If the biomechanics of the lower extremities, pelvis and spine are dysfunctional load cannot and will not be effectively disseminated. Inability to load and unload with biomechanical efficiency can result in a numerous injuries (i.e. Achilles tendonitis, patella femoral syndrome, shin splints, low back pain, etc.). Few people are actually biomechanically sound enough to participate in repetitive activities like running or cycling, which are the modes of exercise most weight loss enthusiasts migrate towards first. This invariably results in injury and stoppage of exercise.

Roughly speaking it takes 2000 steps to jog a mile. Imagine the potential damage 2000 steps at 10x bodyweight can have on a foot, ankle, knee, or hip that doesn't function soundly.

Resistance training programs, when designed accordingly, can assist in correcting faulty patterns and instabilities, can reverse sport-specific imbalances and improve overall performance without the negative influence of repetitive overload.

Summary

When it comes to weight loss/management, resistance training reigns supreme. The overall stress response is much less, there is an anabolic rebound that extends to 48 hours post-training, and it keeps the energy expending systems of the body guessing (calorie *inefficiency*). Additionally, while pure cardiovascular conditioning (running, cycling, rowing, stair-stepping etc.) can potentially exacerbate existing imbalances and

dysfunctions through repetitive overload, resistance training programs, when designed in accordance with the individual's specific orthopedic needs, can improve overall function and simultaneously build lean tissue. If your objective is a reduction in body fat consider inverting your current training mix to include more time spent lifting weights and less doing pure cardiovascular training. When you do decide to hit the treadmill or stair-stepper, mix it up a bit. Throw in some intervals, play with intensities, and don't spend too much time on one piece of equipment. Make it fun, impart variety, and keep your body guessing.

Train Smart!