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## ○ **CARDIO FOR THE AGES**

by Brett Osborn, DO, FAANS, CSCS, & Jay Campbell

Endurance training can quickly become too much of a good thing.

We've seen the story a million times. A mature guy wants to get back in shape, so he starts running. Pretty soon he does a 5K, then a 10K, then a half marathon. Powered by a legion of well-wishers on his Facebook page, he signs up for a marathon. He may have lost some weight, so he thinks he has discovered the fountain of youth, but he has also lost muscle, cut his testosterone production, and most likely suppressed his immune system and his libido.

We're often asked the following question: How much "cardio" should an over-40 strength trainee perform? The answer is a function of one's fitness goals, in particular, those related to performance and physical appearance. Sure, endurance capacity is an important barometer of

fitness (the better your cells extract oxygen in peripheral tissues, the less work your heart has to do), but is it necessary to spin your wheels on an exercise bike day after day to attain a healthy level of cardiovascular fitness? Absolutely not.

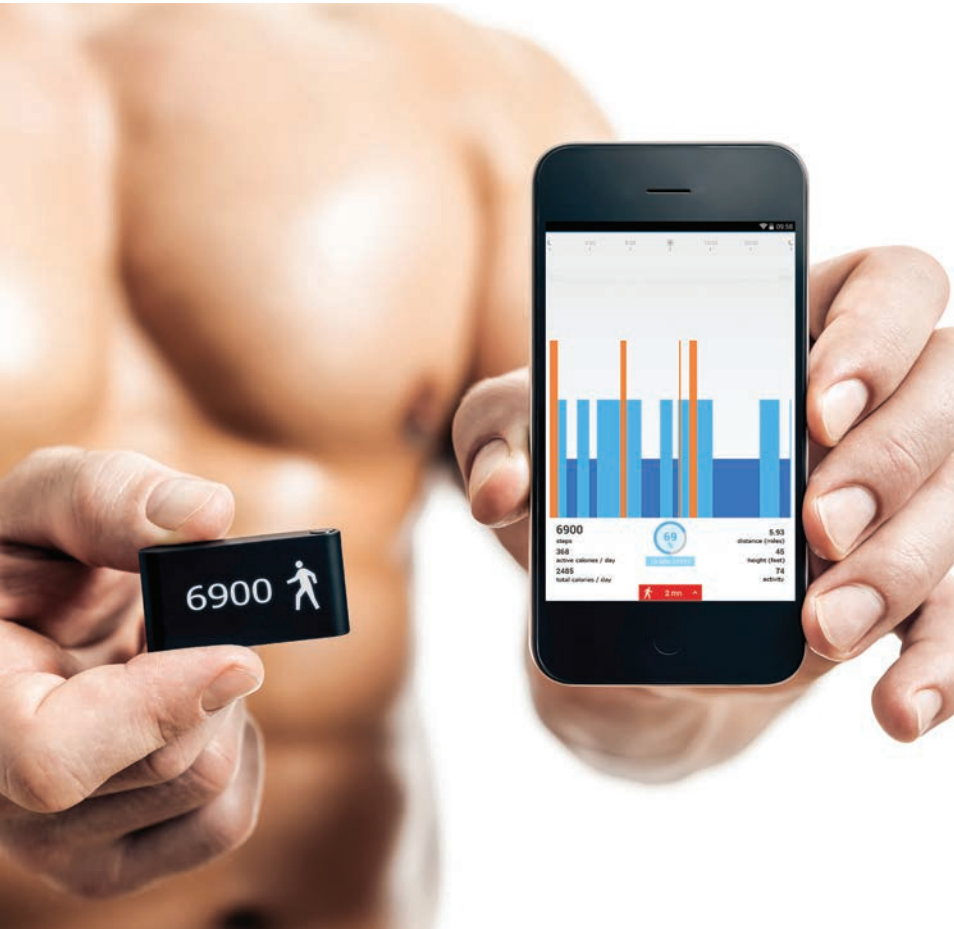
A properly designed strength-training program (incorporating short-duration rest intervals into a high-rep scheme, for example) will dramatically improve one's endurance level by augmenting the oxygen-carrying capacity of blood, enhancing cellular oxygen utilization, and in the context of the latter, allow you to more readily burn fat as fuel (both during and after your training sessions). In essence, you become a more efficient fat-burning machine as evidenced by an improved VO<sub>2</sub> max. And yes, contrary to popular belief,

this can occur while adding muscle to your frame.

Admittedly, you will not become a competitive endurance athlete through this form of strength training. If you want to become a competitive runner, you're going to have to run. However, you can and should expect improvements in your level of cardiovascular fitness as a side effect of strength training. And if you want a leaner physique and the sexual



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to run a fast half marathon. Conjure up the image of the painfully emaciated senior citizen crossing a teeming intersection. Even assuming he is an “avid runner,” if he becomes ill and is hospitalized, he will more readily succumb to disease than his more muscular counterpart.

Strength training, therefore, must be included in any type of exercise protocol to counter the well-established one percent loss of muscle mass you experience every year after the age of 45. Losing muscle impairs one’s ability to perform daily activities, such as getting off the toilet, opening a bottle, and walking on broken pavement. It stands to reason, then, that the aging individual should focus primarily on intense strength training to build and retain as much muscle as possible.

Cardiovascular training should only be performed as an adjunct. We’ve all witnessed individuals in our “more is better” society who insist on engaging in marathons or long-distance triathlons. Most appear worn out and lacking in muscle mass. And while we understand the competitive draw of such challenges, the big picture must be kept in mind. This is about health after all. As stated, everyone should be capable of running a reasonable distance without much difficulty. After all, what good is having a muscular physique if you can’t walk up a flight

of steps without being winded and red in the face?

of steps without being winded and red in the face?

## Calories Burned?

Ignore the rants promulgating the merits of sessions based on “calories burned.” After all, what long-term benefits are being conferred by those hour-long sessions during which you burn (or at least are led to believe by the treadmill computer) 750 calories? Those metabolic effects are short lived. Even the much-hyped “afterburn” is transient.

What is not transient is the additional muscle you pack on as a result of intense strength training. The primary determinant of our metabolic rate is skeletal muscle mass. Just glance at the equation for basal metabolic rate, the number of calories you burn in a day. One of the variables is lean body mass. Conspicuously absent is any measure of one’s endurance capacity. The two entities are to a great degree unrelated. So how will you best amplify your basal metabolic rate and therefore fat-burning capacity? Add muscle to your body through rigorous strength training to augment your metabolic rate.

That said, one should not neglect cardiovascular training altogether. It certainly has its physiological merits. And quite frankly, any individual, barring a physical handicap or preclusive illness, should be capable of running a mile or so without much difficulty at any time. For pure bang for the buck, however, when it comes to longevity, quality of life, and resistance to disease, your time is better spent developing muscle mass rather than the capability

## The Right Amount

Chronic endurance training, in addition to burdening your body with heavy free-radical loads, also has negative effects on your hormones. Take cortisol, for example. Excessively high cortisol levels on a chronic basis can compromise the immune system and predispose us to several types of disease.

Instead, utilize your time performing foundational multi-joint strength-training movements, such as the squat, bench press, overhead press, and pull-up. These exercises will grant you the shape you desire and optimize your hormones, many of which decline with age. The controlled muscular trauma of a strength-training program stimulates the release of restorative hormones, such as testosterone and growth hormone. Both hormones improve the individual’s ability to tolerate and sustain prolonged high exercise intensities, in essence better preparing you for the next workout and conferring resistance against the disease of aging.

For all of these reasons, we recommend limiting cardiovascular work in your training regimen. Instead, default to resistance training as the primary modality. Incorporate a fast pace and short rest intervals to bolster the endurance-boosting aspects of your workouts. Finally, use pure endurance training on “active rest” days in order to limit soreness from heavy weightlifting sessions and to encourage comprehensive fitness. **IM**