

Welcome to fall! Even now while the weather is nice, our facility is already preparing for ski performance. A recent article discussion regarding fat loss and cardiovascular training is appropriate to present now as many of you prepare to start, increase, or manage your current training program. The following article discussion is paraphrased from international presenter Alywn Cosgrove who is also the training editor for Men's Health magazine.

A primary focus of the article was a study comparing 20 weeks of steady state endurance training and 15 weeks of interval training. When comparing total calories burned from exercise, researchers found that the endurance training group burned 28,661 calories, while the interval-training group burned 13,614 calories. In other words, the interval-training group burned less than half the calories of the endurance-training group.

However, when the researchers adjusted the results to correct for the expenditure in energy cost, the interval-training group showed a 900% greater loss in subcutaneous fat than the endurance group. In other words, calorie for calorie, interval training was nine times more effective than steady state exercise. Additionally, researchers noted the metabolic adaptations taking place in the skeletal muscle in response to the interval-training program appeared to favor the process of fat oxidation (fat burning by body).

This is of interest because we have long been told it is about the "calories in versus calories out." We assumed that burning more calories in training would result in greater fat loss. However, this study (and several others since) have shown that theory to be incorrect.

The adaptations is in the post workout period, where the body burns fat. There are a few hypothesized guesses as to why this occurs but the bottom line is that perhaps we do not know why. But we do know that it is more effective because of "something" that happens post workout. And that something is beneficial.

Looking at aerobics for fat loss and ignoring the post workout period is shortsighted. If we studied weight training the same way, looking only at what happens during the workout and ignoring the post-workout adaptations, we would have to conclude that weight training destroys muscle tissue, making you smaller and weaker. And we know that's not true. Therefore the workout is the stimulus and the adaptation is the goal.

This brings into a second concept of cardiovascular programming. This becomes obvious when viewing Lance Armstrong's performance in the New York Marathon.

Through schooling most of know that cardiovascular exercise was necessary to improve the cardiovascular system and subsequently aerobic performance. But there seemed to be an inherent flaw in that augment.

For example, if we were to test aerobic fitness through a treadmill test and organize a 16 weeks program. We would develop a five-day per week aerobic training program that involved you running at various heart rates and for various lengths of times. The program would progressively increase in difficult and duration, and the end result was a very significant improvement in your aerobic fitness.

At the end of the 16 period, how much do you expect your swimming times to have improved? Marginally, if at all, correct? If you have one cardiovascular system, why doesn't your cardiovascular system improve across the board regardless of the activity?

More to the point, why didn't Lance Armstrong, with perhaps one of the highest recorded VO2 max in history, win the New York Marathon? Or beat people with lesser aerobic levels than himself?

The seven time winner of the Tour de France, finished the Marathon in 868th place, and described the event as the "hardest physical thing" he had ever done.

The flaw in this thinking was looking solely at VO2 max. It's fair to say that Lance had a "Formula One" engine, but his wheels and chassis were built for a different kind of race. In other words, he just didn't have the structural development for running.

Lance was the cyclist: his body had adapted to the demands of cycling, but not to the specific demands of running. Lance had developed strength, postural endurance, and flexibility in the correct “cycling muscles,” but it didn’t transfer to running the way his VO2 max.

The muscles don’t move because of cardiovascular demand. It’s the reverse. The cardio system is elevated because of muscular demand. We need to program the body based on the movements it’s going to perform, not based on the cardiovascular system.

Basically, if that muscular system can’t handle the stress of performing thousands of repetitions, then we have to condition that muscle system first. And by doing so, we automatically improve cardiovascular conditioning. The only reason there any demand on the cardiovascular system is because the muscular system places that demand: The muscles require oxygen in order to continue to work. In fact, cardiovascular exercise is impossible without moving the muscle first.

We should program muscular activity first in order to create a cardiovascular response. The up coming season training should involve not treadmill training but body weight, weights, bands, medicine ball high intensity training.

The take home message in this is interval training that involves multi-directional movements for strength, power, balance, coordination/agility and flexibility will improve your winter activities. It will prove our mission statement of “you will look better, feel better and perform better”.