

THE AEROBIC MYTH

By Roger Schwab

In the late 1960s and early 1970s, Dallas-based physician Dr. Kenneth Cooper pioneered the premise that aerobic training improves the functioning of the heart and lungs, and in so doing creates a more vibrant individual.

There is truth in that. Aerobic exercise elevates the heart rate to X level for Y period of time with Z results. When practised regularly, it improves cardio-respiratory efficiency. Though a lower resting heart rate doesn't guarantee longer life (although it seemingly might), it does mean that the body has more stamina however long it lasts.

The benefits of aerobics are obvious, and canny marketers have been quick to take advantage of its appeal: movement, music, and a non-threatening way to shape up. But for all of its benefits, aerobics has limitations. It does not completely enhance the structural integrity of the connective tissues, the joints, and the bones themselves. (Indeed, it often tests them to the breaking point.) It does not appreciably strengthen the muscles. It does not and cannot make the body firmer.

Yet the message conveyed by hugely popular videotapes is just that. The suggestion, the implication -- even the claim -- is that the aerobic workout will transform you into a facsimile of the group leader. But aerobics alone will not make you look like Jane or Cindy or Cathy or whomever, no matter how much you step, hop, twist, and sweat.

The image, however, is seductive, and aerobics has become a buzzword for total fitness. Even the American College of Sports Medicine (a professional organization consisting of educators, physicians, and exercise physiologists) has until recently regarded aerobics as virtually a complete exercise program. An entire generation has been reared to the beat, puppets in thrall to the video masters. Exercisers impart strength-building qualities to stationary cycles, cross-country skiing machines, walking with hand weights, steppers, treadmills, and other aerobic equipment, but in reality, strength gains are insignificant.

Society has been bamboozled. The very nature of aerobic exercise makes it impossible to realize the meaningful strength gains necessary for a noticeable improvement in muscle tone. Burn calories, yes; strengthen muscle, no. When you are working aerobically (e.g., brisk walking), your muscles work against minimal or zero resistance and, therefore, can continue to function at the same level for a long period of time. This is not the route to building strength, and only strength creates muscular shape and stronger bones -- the aesthetics that are prized, and the foundation needed for the long haul. Aerobic exercise improves general functioning via a potentially lower heart rate (greater heart-lung efficiency), but it does not strengthen the muscles around the joint (thus enhancing joint stability) and it does not substantially strengthen or firm the body.

What is missing from the equation is serious strength training. Because the truth is you can work your heart/lungs and muscles/bones in the same safe, sound workout. Visualize a muscle as a mass of individual fibres. Aerobic muscle fibres contract over a long period of time. It takes an intense contraction of the muscle to utilize many more of its fibres and stimulate meaningful strength gain. This type of exercise, anaerobic exercise, induces fatigue in the muscle faster than the muscle can compensate. Working against sufficient resistance, the muscle fatigues quickly, and the individual soon is unable to perform the exercise at that level of resistance. This is the principle of working the muscle to the point of momentary muscular "failure" (the inability to complete another repetition in perfect form), and it is the ticket to gaining strength. Such exercise stimulates the overall system to respond. Rest permits that response.

It may sound grim, this whole notion of failure and resistance, as opposed to a high-decibel aerobics class. But is the one true way to strengthen the body.

Still, the allure of aerobics as a supposed full-body, all-purpose workout persists. After all, the arms and the legs are in motion, sweat is flying, calories are burning, fat is dissolving, the music is pulsating, and women figure, yes, this is the way to get in shape. And indeed, improved cardiovascular functioning is an important part of being in shape. But less body fat and improved wind do not mean a stronger, harder, more durable body. The only way to get stronger is to be progressive with your exercise. Aerobic exercise -- whether an open floor, a stair-climber, a bicycle, a treadmill, or a track -- does not provide the progressive resistance necessary to develop meaningful strength. It is not designed to work the muscles throughout their full range-of-motion. Yes, a strong heart and efficient lungs are an important part of what the body needs to function at an optimum level and ward off long-range debilitating conditions. However, aerobic exercise is not the whole story.

A woman who is out of shape and takes up aerobics may notice some physiological changes in her body initially, but this will quickly level off because she is not seriously challenging her starting strength level. The

same phenomenon occurs if she begins a weightlifting program and uses extremely light dumbbells. Curling, say, a 2-pound weight 100 times may make her breathe hard, perspire handily, and ache, but it does not stimulate the biceps muscle to get measurably stronger and, thus, firmer. This becomes, essentially, an aerobic exercise.

However, if the same woman trains progressively and reaches a point where she can curl 50 pounds 10 times, she has been working deeper into her starting strength level and has given a wakeup call to all those muscle fibres that were lying dormant. She has gained strength, and the shape of her body will show it. Please be assured that our goal is not to heave heavy weights, and the results are not bulging muscles -- results that are beyond the reach of almost all women, anyway. Our goal is to develop a lean, strong, healthy, toned body. Building muscle size is extremely difficult for most men who have the potential to do so, let alone women who don't want them in the first place.

Now that you understand what aerobic exercise can and cannot accomplish, consider a potential problem that may arise for the enthusiastic runner, jogger, or aerobic dancer. When performed over a strength of an individual's lifetime, repetitive pounding movements may have a telling cost. Joint stress, you see, accumulates silently.

When I was younger, I competed in cross-country races and covered many rocky, hilly miles on a weekly basis. When I turned 40, though I had not done any serious running for years, I started experiencing pain in my lower back and down my legs. I did not equate that pain with running my heart out as a kid, yet it was the direct, if delayed, result of my excessive running 20 years earlier along with my serious misuse of a barbell.

Doctors call this the "overuse" syndrome, and it can take you by surprise. One day you get sudden aches and pains -- not traceable to what you did yesterday, but can be triggered the sins of your past. (Of course, the same symptoms can be triggered by a recent trauma and may, or may not, be linked to old habits.) What has occurred here is that the cumulative effect of impact force has exceeded the structural integrity of bone, muscle, and connective tissue. The certain result: injury. High impact exercises take their toll on vulnerable bones, joints and tissue. Pounding on hard surfaces and repetitive movement creates such an impact -- which problem is accelerated when there is not strong muscle surrounding the joints.

One lesson learned from all this is that, instead of a tremendous amount of exercise, we should seek the least amount to stimulate the maximum result. I have constantly searched for ways to shorten exercise periods -- without compromising the results -- in order to avoid overusing the muscles, exhausting the system, and overtaxing the joints. When the route to high cardiovascular fitness entails pounding the pavement for 10, 15, 20 miles a week, the risk of muscular injury, bone and joint damage, and strained tendons and ligaments rises. The most susceptible areas are the knee, foot, ankle, lower back, hip and cervical spine. Is this high level of conditioning worth the cost? When you find yourself on the shelf, you may not think so. Furthermore, your fine-tuned condition will slip as you sit on the sidelines for long extended periods, or during recurrent episodes of nagging injuries.

This fate can be avoided and top condition still attained via high-intensity circuit-type strength training, for this kind of program should involve no orthopaedic cost, no damage to the skeleton.

Proper exercise should strengthen the muscles, connective tissues and bones. It should never damage the skeleton. Improving your cardiovascular condition at a high orthopaedic risk does not make sense for most people. There is a safer, more sensible way to go about the quest for well-rounded fitness, a short direct route to improving your cardiovascular condition and strengthening your muscles and bones at the same time while minimizing the risk of injury.

Sometimes, aerobic enthusiasts who are fanatical about their workouts will eventually run right into problems. Some can't seem to get enough of the so-called "runners high" -- that feeling of well-being that arises when compounds known as endorphins are released in the body and interact with the brain. But in the quest of great mileage and realizing ultimate aerobic benefit -- it may be at an orthopaedic cost.

I don't believe there is such a thing as super health. I do believe, however, in good health, and there is no question that efficient cardiovascular functioning promotes vitality. If for example, you like to run, fine -- not overdone, it can be good exercise. Just know why you are doing it, and don't overdo it, because the excessive pounding carries major joint injury. And realize that neither excessive running nor other popular forms of aerobic exercise will safely strengthen your muscles, safely strengthen your bones, or shape your body.

*** **

The preceding was an excerpt from Roger Schwab's book Strength of a Woman. For ordering information, or to obtain the video, call toll free 1-888-97WOMAN. Roger Schwab, born in Philadelphia on April 6, 1945, resides in Bryn Mawr, the heart of Philadelphia's Main Line. An author, poet, teacher of sports/medicine, Schwab's many interest focus primarily on political science, music, and health and fitness related issues. A product of the

60s, Schwab's major influences include the writings of Gore Vidal, David Halberstam and Norman Mailer. His musical tastes are defined by the lyrics and music of Bob Dylan, Leonard Cohen, Joan Baez and the late Phil Ochs and Buddy Holly. Schwab's passionate involvement with meaningful exercise was cultivated to foundation through the writing and acquaintance of Arthur Jones.