

# WHY IS PROPER EXERCISE AN ABSOLUTE REQUIREMENT FOR LIFE?

*Fitness Issues*

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Many of us may not initially notice the resulting severe decline in our functional ability due to the lack of proper exercise. Properly performed, strength training is the only form of exercise that your body requires. Therefore, this article defines proper exercise as “properly prescribed strength training”. It is easy to overlook the necessity of strength training, because it may take a long time for a decrease in muscle tissue to show up as a decline in our ability to function. For example, it is immediately obvious that oxygen is essential for life. Within hours, it is obvious that water is also a requirement for life. It may take several days or weeks, but there is no question that food is also essential for life. However, it may take years before one begins to experience the loss in quality of life that follows a loss in muscle tissue.

Unknown to most people, one of the most debilitating health problems that plague each and every adult is the loss of skeletal muscle tissue. According to Ellington Darden, Ph.D., former Director of Research for Nautilus Sports/Medical Industries, the loss of muscle tissue is our number-one fitness problem. After your body’s growing processes have halted (approximately age 25), we lose one half to one pound of skeletal muscle tissue each year. Surprisingly, being physically active does little to slow muscle loss and absolutely nothing to halt or reverse it. Believe it or not, in extremely active people such as marathon runners and triathletes, muscle loss is expedited. Wayne Westcott Ph.D., one of the foremost exercise physiologists in the country, cites a 10 year study in the Nautilus Forerunner newsletter showing that America’s best Masters distance runners (age – mid 40’s to mid 50’s) lost the same amount of muscle tissue as sedentary individuals! Furthermore, because they are so active, they experience many more physical ailments and injuries.

When skeletal muscle tissue is lost, it is physically impossible for most of the other fitness components to be improved. For example, if one loses muscle tissue, he/she will experience reduced cardiovascular efficiency, fat gains, and loss of bone density, flexibility and mobility. Let’s take a closer look at these variables.

## **Cardiovascular Efficiency**

Many factors determine the actual health and strength of a person’s cardiovascular system – and most are genetic and non-changeable. A person can be exceptionally fit while still having coronary heart disease. On the other hand, one may have an extremely strong heart and still be very unfit – having low levels of muscle mass, strength, endurance and flexibility. Many cardiologists agree that almost all improvements in physical performance occur because of changes in the muscles and muscle cells.



Strength training has an indirect, but tremendous effect on the work of the cardiovascular system since the heart and lungs are forced to meet the increased demands from the muscles for blood, oxygen, nutrients and the removal of waste products. Both the quantity of muscle tissue and the quality (the ability of the muscle cells to effectively extract oxygen from the blood and transform chemical energy into mechanical energy) are improved as muscles strengthen. Improved circulation creates a better “work environment” for the heart, while the more effective functioning of the muscle cells reduces the “work load” of the heart. The result is not a change in the cardiovascular system itself, but more efficient cardiovascular performance. If one loses muscle tissue (and therefore strength), he/she will experience a reduction in the efficiency of the cardiovascular system.

## **Fat Loss**

Many people exercise with the mistaken belief that exercise burns a significant number of extra calories. Exercise in and of itself is not a major player in weight loss. When you add up the results of hundreds of studies on the effect of exercise on weight loss, the pounds lost on treadmills, bicycles, and basic pavement pounding barely register on a scale.

One pound of human fat contains approximately 3500 calories. This is enough to support the energy demands of running 35-45 miles. This would require the average man to run for six to eight hours. Even if a person had the time, ability and injury resistance to go that far, not all of the calories burned would come from fat stores. Significant breakdown of muscle tissue also occurs during steady-state activities in order to meet energy requirements.

If you want to burn calories, build muscle! Muscle is the most metabolically active tissue in your body (second to nervous tissue). It is estimated that every pound of muscle added to your body increases basal metabolic rate by approximately 50-100 calories per day. Using a conservative example, if you add five pounds of muscle to your frame, your body would automatically burn an additional 250 calories a day while at rest. ( $5 \times 50 = 250$ ). Does this sound better than trying to spend hours of your precious time trying to “burn off” extra calories? Again, building muscle through proper strength training is the only safe and efficient form of exercise to shed off those unwanted calories. Therefore, it is not the number of calories that your body burns from exercise; it is the number of calories that your body burns as a result of exercise. (However, those who want the best fat loss program will follow a moderately-reduced calorie nutritional plan along with a proper strength training program.)

## **Bone Density**

Many people know that osteoporosis is a disease characterized by low bone mass and structural deterioration of bone tissue. This can lead to bone fragility and an increased susceptibility to fractures of the hip, spine and wrist. When hearing of older people who have broken their hip, we usually assume the break was the result of a fall. Often, the opposite occurred: the fall resulted when the hip broke.

Prevention and treatment of osteoporosis involves such things as calcium-rich foods, calcium supplements, hormone therapy and exercise. The same strength training that increases muscle tissue also increases bone tissue along with its mineral content to enhance bone mass. By far the most safe and productive form of

exercise for increasing bone density is low-force, high-intensity strength training. Some studies have shown increases in bone density as high as one percent per week with high-intensity strength training.

## **Flexibility**

The mobility of any joint is determined by several factors, but flexibility is primarily determined by muscular strength. Without muscles, we would not move at all. For most people, it is not necessary to perform stretches to increase flexibility for daily activities, exercise or health reasons. (Exceptions are procedures administered by physicians or physical therapists to return a joint to normal range of motion, or those who participate in activities or sports such as martial arts, ballet, gymnastics, etc.) In fact, forcing joints into uncomfortable positions can permanently increase the length of the ligaments, causing joint instability and increased risk of injury. Sports medicine professionals currently overrate the importance of flexibility and no research study has ever concluded or even supports the widespread belief that stretching programs reduce injury rates.

The safest and most effective way to obtain enhanced flexibility, without causing joint instability, is through strength training exercises that work each joint throughout a full, pain-free range of motion. Contrary to popular belief, strong muscles are not tight muscles. As muscles become stronger, they experience superior blood flow making them more pliable, more elastic – more conducive to allowing the joints to flex and extend throughout a normal range of motion. Stronger muscles possess better tone and contribute greater stability at rest and during activity.

## **Mobility**

The most common cause of death noted on death certificates in the United States is cardiovascular insufficiency. This is especially prevalent among age-related deaths. However, this misleads us, because in many cases cardiovascular insufficiency is the “end-result”, not the actual cause of death. Quite often the real cause of death among the elderly is immobility. Immobility refers to the inability to move. It does not necessarily refer to inactivity. Once the bones, joints, and muscles are so debilitated that movement becomes impossible, eventual cardiovascular insufficiency leads to death. However, many strength training studies in recent years performed on eighty and ninety year olds have shown that significant increases in strength and muscle mass are possible at an advanced age. Individuals who once depended upon canes, walkers and wheel chairs to help them perform daily activities no longer required these devices.

We have just learned from the preceding paragraphs that if your body does not receive the necessary stimulus triggering it to maintain muscle mass and strength, a continuous process of muscle loss will begin. This loss of muscle tissue directly and indirectly causes nearly all of the so-called age related declines in physical capacity. This is why your body requires a proper strength training program in order to prevent the above variables from occurring. Surprising to most, the amount of training time necessary to dramatically improve your muscle building process is far less than what most people are led to believe. At the most, one hour per week, and in some cases considerably less than that, provided that you are willing to put forth the necessary effort. The facts are simple. Only strength training can halt and reverse muscle loss. There are no drugs, no health foods and no physical recreational activities that can help. However, (Words of Warning!) not all strength training techniques are productive or safe.