



## IMPORTANCE of AEROBIC FITNESS

Aerobic Fitness refers to the ability of the lungs, heart and blood vessels to process oxygen into energy to enable large muscle groups to perform for a sustained period. When you are aerobically fit:

- The heart becomes stronger allowing it to pump more blood with each stroke.
- The veins and arteries grow larger and more supple thus accommodating a greater flow of blood with its energy rich oxygen and other nutrients.
- The lungs become more efficient. They extract more oxygen from the same volume of air and they also become capable of processing a greater total volume of air.
- The amount of hemoglobin increases allowing the blood to transport more oxygen.

These physiological changes lead directly to important health benefits:

- The risk of dying from a heart attack is reduced by 36%. This is based on a study of 17,000 Harvard alumni who were at least moderately active (meaning that they walked for about 30 minutes daily).
- The same study showed that the risk of dying prematurely generally, from all causes, is reduced by 22%.
- Exercise reduces blood pressure in hypertensives by 5 to 10 points - both systolic and diastolic. If your blood pressure is good, it helps you keep it that way.
- It is possible to exercise for a longer period without tiring and one's aerobic threshold is higher. This results in better performance when engaged in sports and recreational activities and generally higher energy levels throughout the day.

There are many secondary benefits as well, and new ones are found almost daily. Some flow directly from the above changes, while others appear to be independent and in many cases were totally unanticipated:

- Exercise causes the release of endorphins and other chemicals in the brain that lead to an increase in one's sense of well being. Feelings of depression and anxiety are reduced.
- Regular exercise can lead to a modest reduction in total cholesterol, but more importantly vigorous exercise leads to a rise in high density lipoprotein (HDL) or "good" cholesterol that collects the harmful low density lipoprotein (LDL) from the arteries and transports it to the liver for removal from the body.
- Exercise reduces the risk of developing adult onset diabetes, and helps control diabetes if you already have it.

- Gastrointestinal transit time is decreased by 56% thus reducing the risk of colon cancer.
- If the exercise is weight bearing, the mineral density of the bones is increased.
- Regular exercise improves the body's handling of excess heat as well as its resistance to cold.
- Because better circulation improves the delivery of oxygen to the brain, mental capacity is improved, particularly as we age.

Aerobic exercise is essential to weight management. Over 90% of successful dieters exercise. Here's why:

- Aerobics burns additional calories directly.
- By increasing your metabolic rate, exercise enables your body to burn more calories even when you are at rest.
- Exercise masks hunger. You will not be hungry while you are exercising.
- Fat deposits release fatty acids more readily when you exercise, and the production of fat burning enzymes is increased.
- When you do lose weight, if you are exercising, a higher percentage of the weight loss will be from fat, not from lean tissue.

Physical activity is a gateway behavior. When people become active, they start eating better, there's a reduction in substance abuse, and they start taking better care of themselves generally. Mental outlook improves. Morale improves. Physical activity is the easiest way to kick off a kind of virtuous cycle that can be initiated in very gradual steps. Now is the time to start.

The Surgeon General said, "Given the numerous health benefits of physical activity, the hazards of being inactive are clear. Physical inactivity is a serious, nationwide problem. Its scope poses a public health challenge for reducing that national burden of unnecessary illness and premature death." If you begin slowly, taking up an exercise program is not "painful", it is a pleasure. The idea is to improve your health and enjoy the process at the same time.

## WHY EVERYONE SHOULD STRENGTH TRAIN!

Aerobic exercise is essential to health and fitness. However, if aerobic exercise is all that you are doing, you are only half way home. It is also essential that you strength train. Most of the research on the benefits of strength training is recent and not as broadly appreciated as the benefits of aerobic training, but the data is quite compelling. Even for weight management, strength training is now considered just as important as aerobic work.

**1. Increases Physical Capacity to Perform Daily Functions** - Nothing helps you lift the groceries, play with the grandchildren, and generally do all the things in life that you want to do, like strength training. The general rule of thumb is that if you have not been strength training, and you apply yourself for three months, you will gain 40 to 50% in strength. After one year, you might easily be twice as strong as when you started. Alex Leif MD, Professor at the Harvard Medical School of Gerontology says, "Regular vigorous exercise is the closest thing we have to an anti-aging pill."

**2. Essential to Weight Management** - Without strength training, adults lose about a half pound of muscle per year after the age of 25. This muscle is typically replaced by fat, and fat burns virtually no calories. This makes weight management increasingly difficult. The way to turn the situation around is to gain muscle thereby increasing metabolic rate. New strength trainers normally lose 4 pounds of fat in three months while at the same time packing on 3 pounds of lean muscle. That 3 pounds of muscle will burn about 300 more calories every day even if you do not perform any exercise at all.

**3. Makes You Look and Feel Better** - Strength training makes you feel stronger because you are stronger. It makes you look better because as your muscles strengthen they gain size and shape giving your body the line, proportion and definition that everyone wants. Since muscle weighs more than fat, even if you don't lose weight, your body proportions will change. You will wear a smaller dress size, your pants will be looser. Within weeks you will feel the difference, and your friends will notice the difference. Only progressive resistance exercise can do this for you.

**4. Improves Athletic Performance** - In the 1950's, even football players were discouraged from lifting weights. Today, every serious athlete strength trains, resulting in dramatic improvements in performance. The last to be converted were golfers, who thought that the delicacy of control their game requires would be disturbed by bigger muscles. Now the PGA's fitness trailers are overflowing. If you want longer drives, more snap in your serve, more lift on your jumper, you've got to strength train. Ask us about exercise programs specially designed for your sport. Especially combined with a stretching program, strength training will also greatly reduce the likelihood of injury.

**5. Protects Against Osteoporosis** - Post menopausal women are especially prone to the loss of bone mineral density. Weight bearing exercise, ideally a balanced strength training workout for the entire body can not only prevent osteoporosis, but increases bone density. One study showed a 13% increase in bone mineral density after only four months of strength training. It is also important to get enough calcium and avoid smoking and excess caffeine and alcohol.

**6. Promotes a Sense of Psychological Well Being** - Science tells us that exercise increases the production of endorphins and other chemicals in the brain that make us feel better, but the effect of exercise must be felt to be truly appreciated. Strength training has the added advantage of increasing blood flow to the muscles in a way that makes us feel "pumped" - both physically and emotionally. There is a palpable sense that we are doing something good for ourselves.

**7. Builds and Maintains Healthy Muscles and Joints** - As your muscles strengthen, the tendons, ligaments and other connective tissue also strengthen. One result of this process is reduced risk of injury while participating in sports or everyday activities. If you participate in a regular strength training program for one year, you are apt to be about twice as strong as when you started. That means that you can do with one hand what previously required two.

**8. Helps Control Diabetes** - Strength training reduces the risk of developing adult onset diabetes, and helps control diabetes if you already have it. A recent NIH study showed that diet and exercise lowers the risk of diabetes by 58% for 10 million Americans on the cusp of developing this common but deadly illness. The American Diabetes Association says that resistance training is critical to improving glucose clearance. After 4 months of strength training, glucose metabolism improves by about 23%.

**9. Controls the Effects of Aging** - Dr. Evans of Tufts University said, "Strength training can make a 95 year old as strong as a 50 year old person, and a 64 year old as physically fit as a healthy 30 year old." Dr. Walter Ettinger M.D., co-author of *Fitness After 50*, says "Exercise is the most powerful thing you can do to ensure an independent, healthy life." After age 20 or so, the body's natural secretion of human growth hormone declines by about 14% each decade. Synthetic forms of HGH may some day be available, you can get many of the age reversing benefits of HGH by stimulating your own hormonal levels naturally through exercise. One study showed that moderate to intensive aerobic exercise can increase growth hormones 150-250%, while high-intensity weight training can increase levels three to four times.

**10. Has a Positive Impact on Virtually Any Medical Condition** - Doctors now recommend exercise for everyone from cancer patients to ten year olds. Strength training reduces lower back pain, reduces arthritis pain, increases gastrointestinal transit time thereby reducing the risk of colon cancer, reduces resting blood pressure, and some studies even show an improvement in lipid profiles.

**MYTH 5.** *Women should train with light weights so they won't bulk up.* Many women feel the way to a great body is to lift very light weights that do not put a strain on the muscles. The fact is, the only way to achieve great muscle tone is to train to momentary muscular failure. If you want to tone up, not bulk up, you have to utilize a high repetition scheme. By performing high reps (15 to 20 per set), you target the endurance muscle fibers and tend to get a leaner, harder physique without adding substantial muscular mass. However, the weight used must be heavy enough so that the last few repetitions are very difficult to complete. If the weight is too light, you will not tax the muscle sufficiently to adequately stimulate results.