

Strengthening exercise is critical for keeping our bones and joints healthy so that we are able to keep moving and avoid the debilitating pain of skeletal problems such as osteoarthritis! In addition maintaining leg strength is the number one thing we can do to avoid a nursing home later in life.

HOW OFTEN SHOULD I EXERCISE?

At least two to three times a week, you should be doing CV exercise, raising your heart rate and holding it in your target zone for a minimum of 20 minutes. It can generally be performed every day since it is less stressful on the body and requires a shorter recovery period than strengthening exercise. Keep in mind that with all exercise, the benefits occur when you are NOT EXERCISING, and your body is recovering! Recovery occurs when you allow for adequate rest and proper nutrition.

HOW DO YOU AVOID INJURY?

Most injuries occur from sudden changes in an exercise routine or overtraining.

How do you know if you are overtraining? The most obvious sign of overtraining is when your exercise session at the end of each week is consistently more difficult than at the beginning of the week. The solution is more rest between exercise sessions or reducing the intensity of some sessions.

“Soft tissue” injuries are injuries to the muscles, tendons or ligaments and are the most common exercise injuries. The most common is tendonitis, which is an inflammation of the tendons. Tendons are the ends of the muscles that taper into flat strap-like cords and attach the ends of the muscles to the bones. Tendonitis results from overloading them.

These types of injuries can be extremely annoying, debilitating, and difficult to get rid of. The best plan is to avoid injuries in the first place by starting an exercise program at an easy level and always making gradual changes to your exercise routine.

IS REST THE BEST WAY TO DEAL WITH AN INJURY?

Our bodies are the result of 200,000 generations of evolution. For most of that period, if we didn't move,

we were dead. As a result, we are designed to heal better *with* movement, continued rest and inactivity often slows the healing process.

Whenever possible, particularly with tendonitis, we should perform whatever exercises or part of an exercise we can do pain free, working around the afflicted area. This pain free activity promotes circulation and healing in the injured area. Once you have permission for exercise from your doctor, one of our trainers can design an exercise program to work around almost any injury.

DON'T YOU BURN MORE FAT WITH LONGER DURATION, LOWER INTENSITY CV EXERCISE?

Research has shown that this is not true. Easier levels of exercise do tend to utilize a slightly higher percentage of calories from fat stores, but higher levels of exercise intensity tend to use many more calories from all sources, including fat.

BUT I DON'T LIKE TO EXERCISE!

This means you are normal! Many people believe that regular exercisers are born loving it and the fact is, most people don't like exercise! Like brushing your teeth, you may not feel like doing it, but it is necessary to keep your body healthy. Even easy, *regular* exercise has been shown to have a very positive effect on health. Find something you can build into your weekly routine that takes your mind off the exercise, such as riding a recumbent bike while reading or watching a movie.

WHAT IS THE BEST CV EXERCISE?

The best CV exercise is the one you prefer, as long as you can do it without joint pain! Your favorite exercise is the one you are most likely to do for the rest of our life.

However, if you love to jog, for example, and your knees hurt afterwards, it is time to consider something with less pounding. The Elliptical trainers or the Precor AMT (adaptive motion trainers) machines provide “no impact” exercise. Fast walking with the treadmill deck on an incline also lowers the impact on the body. These options will definitely elevate the heart rate without pounding the knees and back!

WHAT DOES CV EXERCISE DO FOR YOUR BODY?

Just like your muscles, when your heart, lungs and circulatory system are worked with CV exercise, your CV (aerobic) systems will adapt and become stronger and more efficient.

THE FOLLOWING ARE JUST SOME OF THE BENEFITS CV EXERCISE PRODUCES:

- Increases in heart strength and chamber size allow blood to be pumped more easily.
- The volume of your lungs increases, creating more surface area for gas exchange, resulting in more oxygen being absorbed with each breath.
- Your resting pulse rate decreases because your heart pumps more blood with each stroke.
- Blood vessels throughout your body increase in size and number. The wider they become, the less likely they are to be affected by blockages and the less likely you are to develop high blood pressure.
- Blood vessels increase their ability to widen and shrink (dilate) in response to the exercise demands put on the body.
- Your number of capillaries increases.
- Blood is delivered more easily, lowering your blood pressure.
- Your blood volume increases, along with an increase in red blood cells, which carry the oxygen throughout your body!
- The amount of oxygen delivered to the body (VO₂ max) increases.

This list includes just a few of the benefits! There are many more, and no doubt others yet to be discovered!

Improvements in CV fitness have proven to be the number one thing you can do to prevent premature death from all causes! It results in an immense list of health benefits, including improved cholesterol levels, reduced blood pressure and reduced chance of heart attack (even if there is a family history of heart disease); reduced risk of diabetes, stroke, cancer, depression, and many more!

Mike Arteaga

Owner, founder (1973), health and fitness consultant

7/24/08

CARDIOvascular exercise



MIKE ARTEAGA'S
HEALTH & FITNESS
CENTERS

452-5050

691-6161

www.mikearteaga.com

Cardiovascular Exercise

WHAT IS CARDIOVASCULAR EXERCISE?

Cardiovascular (CV) exercise is any activity performed for an extended period of time that requires an increase in the oxygen delivered to the muscles. For example, walking and jogging are CV exercise, while weightlifting is not. Walking and jogging can be performed for an extended period of time, while weightlifting exhausts the muscles quickly and can only be performed for a very short time.

Whenever you begin an exercise, the muscles call for more oxygen. Since oxygen is delivered in the blood, the nervous system signals the heart to beat faster and pump more blood to the muscles. The harder the exercise, the more oxygen the muscles require, and the faster the heart must beat to supply the increasing demand for oxygen.

The maximum oxygen that your heart and blood vessels can steadily supply to the muscles will determine how hard you are able to exercise. Any activity that requires oxygen amounts at or below this maximum oxygen supply level is CV exercise. At this level the body can supply sufficient oxygen to maintain the activity for an extended period of time.

HOW HARD SHOULD I BE WORKING?

The best way to judge how hard to work is by determining your “target heart rate zone.” This will determine your ideal exercise heart rate (beats per minute; BPM).

To determine your “target heart rate zone” take 220 (theoretical maximum heart rate), deduct your age and multiply by 65% to find the bottom number and 85% to find the top number. If you are just starting or restarting an exercise program, you should be exercising at a 65% to 75% level. If you have been exercising and are reasonably fit you may want to train at the 75% to 85% level.

For example, if you are 40 years old, your zone is 110 to 144 beats per minute. After a five to ten minute warm up, your heart rate should be between 110 and 144 beats per minute (BPM) and continually stay there for most of your CV exercise session ending with at least a 5 minute cool down. You can

check your heart rate (BPM) with the heart rate monitors on the CV machines, with a Polar Heart Rate monitor, or you can hold the artery on the side of your neck. Count the beats for 10 seconds and multiply by six to get your BPM (beats per minute).

The most accurate way to check your heart rate is by using a Polar Heart Rate Monitor. It consists of a small chest strap that goes under your shirt and a wrist watch that displays your pulse rate. Most of the new CV equipment is also Polar Monitor compatible and displays your heart rate on the control panel if you are wearing the chest strap. The Polar Monitor is not only wonderful for tracking your heart rate but it can also keep track of a number of statistics including the total amount of exercise you perform each week. Polar monitors can be purchased at our front desk or in most sporting good stores.

Remember, exercise is a life-long habit that you are developing. If you push too hard and make it torture, the likelihood of keeping it up is very low! You are much better off exercising at an easy level for the rest of your life than pushing very hard for three months and quitting!

ISN'T CV THE MOST IMPORTANT EXERCISE FOR WEIGHT LOSS?

A “weight loss” program is really a misnomer; it should really be called a “fat loss” program. Many people chase the wrong goal and deceive themselves with “diets” that dehydrate the body. The scale may go down in the short term, but little fat loss or permanent effect has occurred, and the weight is soon regained. If the change isn't permanent, the “diet” DID NOT WORK!

Strengthening exercise is the most important part of any fat loss program. CV exercise certainly helps burn more calories and should always be included for health reasons.

The average person burns 100 to 200 calories in a half hour of CV exercise and that's it! CV exercise is, of course, fantastic for your health, but when you consider there are 3,500 calories in a pound of body fat, 100 to 200 calories burned is pretty small. Contrast this with just 15 minutes twice a week of strengthening exercise, that can easily help you add

five pounds of muscle. Five pounds of muscle burns about 250 additional calories EACH DAY! You burn these 250 calories even on the days you don't exercise! That is 1,750 calories a week or 91,000 calories a year without counting any additional calories you burn exercising!

WHY SHOULD I EXERCISE AT ALL?

Cardiovascular (CV) exercise is THE MOST IMPORTANT THING YOU CAN DO for the prevention of heart disease and many other diseases!

“Aerobic exercise keeps us alive, and strengthening exercise makes it worth living”

— Dr. Harry Lodge

Build it into your schedule as a “must do” item that you don't even think about. If you “decide” each day whether you “feel like” exercising you will eventually stop! You don't decide each morning whether to brush your teeth or shower! It's no different with exercise, like brushing your teeth, showering and shaving, it will become a routine task.

Health is your most important asset; just ask anyone who has lost it. You can't help your family or your job if you lose your health. Your most important job is to maintain it!

WILL GOLF, GARDENING OR WORKING AROUND THE HOUSE DO IT?

Sports such as golf or tennis and activities like gardening and working around the house, are great additions, but do not count as a regular CV exercise session. If “ANY” physical activity like these worked, then most pro golfers, construction workers and farmers would be healthy and fit when they reached retirement. Unfortunately this isn't the case!

WHAT IS CV (AEROBIC) “FITNESS”?

Researchers Dr. Bradley J. Willcox, Dr. Craig Willcox, Ph.D., and Dr. Makoto Suzuki, are the authors of the best-selling book, *The Okinawa Program*, which summarizes their 25 year health study. They define CV fitness as:

“the body's energy efficiency; that is how efficiently the body gets oxygen to the

muscles. The stronger and healthier the heart, the more efficient the oxygen transport and the more aerobically fit you are. Here's how it works: Like fire, the body needs oxygen to burn for energy. The oxygen has to be extracted from the blood. When you are aerobically fit, the heart pumps a lot of oxygen carrying blood in one heartbeat. It gets the oxygen to the exercising muscle quickly and efficiently. When we are not aerobically fit, the heart has to pump much more often to get the same amount of oxygen to the muscles. This raises the heart rate as well as produces more wear and tear on the body. The heart and lungs of an aerobically unfit person, in effect, have to work harder for the same amount of oxygen as an aerobically fit person's do. That's why we can use heart rate to test for aerobic fitness: if a person's heart rate increases a lot with minimal effort, he or she is not fit aerobically. His heart is out of shape and needs to be exercised, probably like the rest of his body.”

WHAT IS THE DIFFERENCE BETWEEN CV EXERCISE AND STRENGTHENING EXERCISE?

These are two completely different kinds of exercise! Each has a very different purpose and results! CV exercise primarily improves muscular endurance but does little or nothing for strengthening the muscles (even world class marathon runners often have weak legs). Strengthening exercise improves muscle strength but does very little for endurance. Despite what we are told on television and in the “health and beauty” magazines, there are NO exercises that accomplish both at the same time!

Dr. Henry Lodge in his bestselling book, *Younger Next Year*, says “aerobic exercise keeps us alive, and strengthening exercise makes it worth living!” What does he mean? CV exercise is critical for heart, lung and circulatory system health! Heart failure is the number one cause of death, and CV exercise is the most important thing we can do to prevent heart problems, along with many other diseases!