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Elements of Fitness

Cardiovascular training

1. The first step in beginning a cardiovascular training program is to determine whether such training places you at a health risk. If you are over 50 years old, or have a personal or family history of heart disease or high blood pressure, consult your medical doctor before beginning a cardiovascular training program
2. Next, determine your resting heart rate and write it down. To do so, sit comfortably in a chair and away from stressors. Place the pads of your index and middle fingers over your radial pulse. Count how many times you feel your pulse and write it down.
3. To determine your target heart rate, visit the following website: www.americanheart.org/presenter.jhtml?identifier=4736. Follow the instructions.
4. Begin exercising slowly and at "conversational pace" (You should be able to carry-on a conversation while exercising.)
5. In the early stages of training, your heart rate may enter the target zone rather quickly. It is important to monitor your heart rate to be sure that your heart rate does not fall outside of the target zone.
6. Begin exercise in the target zone for 10 minutes, three days per week. Add 1 minute per day, per week, until you have reached 30 minutes of exercise, five days per week. (If you think that this is a lot, consider this: The American Heart Association recommends 60 minutes of cardiovascular training, six days per week.)
7. When your daily cardiovascular exercises are completed, and you have warmed down, measure the time required for your heart rate to return to its resting rate. Over time, you will note that two things occur: (1) your resting heart rate becomes slower, and (2) the time to return to baseline becomes quicker...you are getting more cardiovascularly fit!

Flexibility

Who Should Stretch

- Everyone - regardless of age or flexibility

Why Stretch

- Reduce muscle tension and stress
- Increase flexibility and range of motion
- Preparation for other physical activities
- Improve coordination and body awareness
- Reduce the risk of strain from unexpected over-stretch
- Improve circulation

Types of Stretching

- *Static Stretching* - holding a comfortable lengthened position for 15-30 seconds. As the stretch feeling diminishes, the stretch is increased.
- *Ballistic Stretching* - rapid bouncing to force the target muscle to elongate. Unfortunately, this type of stretch may cause the muscle to shorten rather than lengthen due to muscle spasm and injury. Any increases in length may be the result of muscle tearing.
- *Passive Stretching* - done with a partner, this type of stretch can be either passive or ballistic. The partner moves the body part to a position of light resistance, at which time the person being stretched provides a mild resistance for 8-10 seconds. Upon relaxation, the stretch is increased. If performed carelessly, this technique can cause muscle injury. When performed correctly, tissue elongation is cumulative and very effective.

How to Stretch

Warming Up - Always warm up before stretching. In order to increase blood flow to the muscles, walk at a brisk pace or ride a stationary bicycle at a low resistance for a few minutes prior to commencing. Movement of the upper extremities is essential during these activities to warm up the upper body.

How Long / How Much - Stretches should be held for at least 10 seconds per muscle; although 30 seconds to 2 minutes is preferred. Do not strain. The stretch should always be comfortable. Return to neutral slowly. Never change position quickly after a stretch is completed, or muscle spasm may occur. Some post-stretch soreness is normal, but it should not limit your activities. An average stretch routine should require approximately 15 minutes.

Breathing - Do not hold your breath while stretching. Abdominal breathing is best. Exhale as you move into the stretch and continue relaxed, rhythmic breathing for the duration of the stretch.

Frequency - Ideally, you should stretch before and after exercises; at least once per day. When possible, attempt to integrate stretching into your daily routine.

Repetitions - Shorter stretches [30 seconds or less] should be repeated 2-3 times. Longer stretches [1-2 minutes] can be performed once.

Recommended Reading

- Stretching by Bob Anderson. Shelter Publications, Inc.
- Facilitated Stretching by Robert McAtee. Human Kinetics Publishers

Muscle endurance training

Diet

How can you determine whether your body fat content is within a good range? There are sophisticated measurement devices that can be used to get a rather precise measurement, but are not readily available to the public. Rather, you may calculate your "Body Mass Index". By logging on to www.cdc.gov/nccdphp/dnpa/bmi/calc-bmi.htm, you will be brought to the Centers for Disease Control web site. Follow the instructions.

Principles of Perfect Posture

Posture Perfect

Your mother was right when she told you to stand and sit up straight. Not only does proper posture help you appear healthier than a slouching frame, but also promotes better musculoskeletal and organ function. Try this: slouch forward and attempt to take a deep breath. Now, sit up straight and do the same. You will surely find that breathing is easier with a proper posture. If breathing can be so influenced by posture, one can only imagine how other organ functions are affected. Also, improper posture excessively stretches [strains] or compresses joints and can lead to premature degenerative arthritis. The early symptom expression of excessive joint or soft tissue strain includes stiffness and aching pain after an activity or sustained posture, such as working on the computer.

When viewed from behind, the base of the skull, shoulders and hips should be horizontally level and the center of the skull should align with the center of the pelvis. From the side, a vertical line [plumb line] should bisect the ear canal, shoulder, hip, knee and side of the ankle. When seated, the horizontal and upper body plumb line alignments should remain unchanged.

Patterns of Use and Abuse

Neck and back pain sufferers commonly demonstrate predictable patterns of muscle imbalance. Some muscles tend to become excessively tight and overpowering, whereas others become weak and elongated. Subtle muscle imbalances may result in excessive joint and muscle strain, predisposing one to acute or repetitive strain injury [RSI]. Tight/overpowering muscles require stretching, whereas weak/elongated muscles require strengthening. The foundation of spinal health is stable postural control and normal neutral alignment.

Effects of Poor Posture

A straight spine lacks optimal shock absorption and renders the intervertebral discs vulnerable to injury. On the other hand, excessive spinal curves tend to over compress or stretch the more posterior spinal joints, known as facet joints. In either case, the supportive spinal muscles must work excessively to maintain an upright position and may result in muscle fatigue and pain.

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