

Lesson 11 *The Biggest Loser*

Benefits of Physical Activity

Physical activity is anything that gets your body moving. According to the *2008 Physical Activity Guidelines for Americans*, you need to do two types of physical activity each week to improve your health— aerobic and muscle-strengthening. Each type of exercise has its own advantages and disadvantages.

Choosing the right exercise is a matter of finding an activity that helps you achieve your fitness goals; and is safe, sustainable and enjoyable. Exercise should offer some degree of challenge to reap any benefits. In addition to any structured exercise routines, it is beneficial to incorporate more activity into your daily life, like walking or biking to work, taking stairs instead of elevators, etc.

Aerobic Exercise requires more than the usual amount of oxygen to get to the muscles. The heart and lungs are forced to work harder and grow stronger. These exercises include walking, running, biking, swimming, skating, and using aerobic exercise machines (such as treadmill, stair-climbing, and elliptical training machines). These exercises expend a great deal of calories and improve cardiac function. Too much weight-bearing aerobic exercise may cause excessive wear on the joints and surrounding tissues.

Examples of moderate activity include brisk walking, cycling, swimming, or doing home repairs or yard work. If you can't get in 30 minutes all at once, aim for shorter periods of activity - at least 10 minutes - that add up to a half hour or more per day. People who have not exercised in a long time should start with shorter sessions of 5 to 10 minutes and build gradually from there.



Strength Training involves forceful muscular contraction against resistance. Strength training is usually done with free or machine weights, but can also be done with resistance bands or tubes. These exercises develop muscle strength, size, endurance, and flexibility, and have some benefits to the heart and lungs. Increased muscle mass helps a person become leaner and lose weight, because muscle uses more calories, even at rest, than do other types of tissues, particularly fat. More muscle mass also means more functional ability into later years to help people remain independent as they age.

The *2008 Physical Activity Guidelines for Americans* states adults need muscle-strengthening activities on 2 or more days a week that work all major muscle groups (legs, hips, back, abdomen, chest, shoulders, and arms). Maximum benefit is obtained by exercising at a relatively high workload. Exercises are done in sets – 8 to 12 repetitions in a relatively slow and controlled manner, without heaving, throwing or dropping the weight – and resting briefly between sets. Controlled breathing prevents dizziness. Exhale while lifting a weight and inhale when lowering a weight. Frequency of strength training is a critical factor. The body needs about 48 hours for muscles to repair from the microscopic tearing and bleeding that occurs as a result of the strength training. Muscles start to break down when exercised at sufficient workloads more often than every other day. If you exercise with weights daily, alternate the muscle groups being used – upper body one day and lower body the next.



Stretching and Flexibility – Stretching reduces stiffness of muscles and tendons, and thereby improves flexibility and comfort of physical activities. Stretching can increase the area over which the muscle contracts, which allows muscle force to be exerted more effectively and with less risk of injury. Thus, it may help you jump higher, lift heavier weights, run faster and throw farther. Flexibility exercises involve slowly and steadily stretching groups of muscles without jerking, bouncing, or causing excess pain. These exercises can be done before or after other training, or as a program itself, such as yoga and Pilates.

General warming-up (jogging in place or calisthenics) appears to be more effective than stretching for facilitating safe exercise. Stretching after exercise is preferred because tissues stretch more effectively when warmed.

Workload and Variation – In general, if the intensity of an exercise increases, then duration, frequency, or both may need to decrease and vice versa. For most people in weight training, the amount of weight lifted should continue to increase as they get stronger, whereas duration and frequency typically remain constant once a certain level is reached. Too light of a workload provides few benefits; and too high a workload increases risk of injury because of improper technique.

Different exercises work different muscle groups and have different benefits. Running works primarily the lower leg muscles – landing on the heels and rising on the toes exerts the greatest force on the ankle. Bicycling works primarily the upper leg muscles – the front thigh muscles (quadriceps) and hips. Rowing and swimming work mostly the upper body and the back.



People should vary the way they train their muscles over time. The body adapts to routine, so that doing the same exercises in the same way over time becomes less effective in building strength, muscle, and cardiovascular fitness. Therefore, people who engage in resistance exercises should alter their routines every few weeks, and aerobic exercisers should alternate among the different forms of aerobic exercise available.

Eat and Drink!! Whatever you do, make sure you always have plenty of liquids before and during any activity. Water is the best liquid to drink because it hydrates the muscles so you can keep going. It also helps cool your internal organs from the heat you produce during activity. If walking in the early morning or at lunch, you should eat and drink something before you begin. You need some food with carbohydrates that can metabolize into glucose. Glucose is what provides the energy needed for your body to move.

Resources:

American Council on Exercise has a library of article on various exercise topics at:

<http://www.acefitness.org/exerciselibrary/default.aspx>

Sources include: “Physical Activity for a Healthy Weight”, Centers for Disease Control and Prevention, 2009, http://www.cdc.gov/healthyweight/physical_activity/index.html

“Exercise and Physical Activity: Getting Fit for Life, National Institutes of Health, 2009, <http://www.nia.nih.gov/HealthInformation/Publications/exercise.htm>

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