

<u>Improving Muscular Strength, Endurance, and Flexibility</u> Anaerobic Exercise <p>Without oxygen. Exercise at an intensity that does not allow the cardiovascular system to supply enough oxygen to the muscles, creating an oxygen deficit. Intense bursts of activity for 20 – 30 seconds. Ex. Weight training, sprinting, and calisthenics</p> <p>Types of resistance training</p> <p><i>Isometric training</i> - A force exerted by a muscle that results in no seen movement.</p> <p><i>Isotonic training</i> - A muscle generating a force against a resistance.</p> <p><i>Isokinetic training</i> - A muscle generates a force against constant resistance and movement results. This requires special equipment.</p> <p><u>**Refer to the notes below to know how to specifically improve muscular strength and muscular endurance.**</u></p>	<u>Improving Cardiorespiratory Endurance</u> Aerobic Exercise <p>With oxygen. Exercise at an intensity that uses oxygen to metabolize fuel. 20 – 30 minutes of vigorous exercise. Heart rate increases during exercise. Ex. Jogging, swimming, dancing, cycling, and brisk walking</p>	<u>Improving Body Composition</u> Anaerobic and Aerobic Exercise <p>Endurance activity combined with resistance training. Usually longer duration and higher frequency of aerobics.</p>
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BASIC COMPONENTS OF FITNESS

Body composition is ratio of body fat to lean body tissue, including muscle, bone, water, and connective tissue such as ligaments, cartilage, and tendons. Appearance is probably one of the biggest reasons people exercise and watch what they eat. Types of body composition measurements include skinfold or pinch test (calipers used to measure thickness of skin) and underwater weighing (not mentioned in the book, most accurate). Males with 25 or more percent body fat and females with 30 or more percent body fat are at risk of developing cardiovascular problems. A healthy range for males is anywhere between 5-15% body fat. A healthy range for females is anywhere between 15-25% body fat. Why is it that females have a higher healthy range of percent body fat than males? Carrying too much weight also puts added stress on the skeletal system. In order to improve upon body composition one must use an endurance activity combined with resistance training, usually longer duration and higher frequency of aerobics.

Flexibility is the ability to move a body part through a full range of motion. Flexibility is important because it helps reduce muscle strains and lower back problems. In order to improve on flexibility one must use slow, static (non-bouncing) stretches, held 30-60 seconds, without pain. The sit and reach is a technique used to measure flexibility. We will be using a chart to compare what time of flexibility we have in comparison with others.

Muscular strength is the amount of force a muscle can exert. Muscular strength is vital to activities that involve lifting, pushing, or jumping. When you have good muscular strength, you are able to perform daily tasks more efficiently. In order to improve upon muscular strength one must do high weight, low repetitions, and multiple sets of weight training. We will be doing a vertical jump to measure our muscular strength.

Muscular endurance is the ability of the muscles to do different physical tasks over a period of time without causing fatigue. People with good muscular endurance generally have better posture and fewer back problems. They are also better able to resist fatigue. In order to improve upon muscular endurance one must do low weight, high repetitions, and multiple sets of weight training. We will be measuring our muscular endurance through a one-minute step test.

Cardiorespiratory endurance is the ability of the heart, lungs, and blood vessels to send fuel and oxygen to the body's tissues during long periods of activity. One way to measure cardiorespiratory endurance is to find pulse recovery rate. We will also talk about resting heart rate, which is your heart rate after waking up in the morning. A person of average fitness has a resting heart rate of between 72-84 beats a minute. After only four weeks of an exercise program, the rate can decrease by five to ten beats per minute. In order to improve upon cardiorespiratory endurance one must exercise with frequency of 3-5 times weekly, intensity of 60-85% maximum heart rate, and time of 20-60 minutes. A resting heart rate below 72 beats a minute indicates a good fitness level. A teen at the top of his or her form may have a resting rate as low as 40 beats per minute. We will get an understanding of maximum heart rate, which is $220 - \text{age}$. You should never exceed your maximum heart rate. A type of measurement for cardiorespiratory endurance is the 3-minute step test. We will be measuring recovering heart rate; we will use a chart of our heart rate at a predetermined time as we complete the 3-minute step test.