American Dance

Education Support

Fitness for the Dancer

By Debbie Byrd

Dance: is a performance art. It is also physical education. When a student attends dance classes, both of these subjects are addressed. Dance classes definitely play a role in attaining fitness. The term fitness is broadly used and often vaguely defined. Many people perceive health and fitness as one and the same, yet there is a definite distinction between the two concepts. Health reflects a person's state of being; it is typically viewed as the presence or absence of disease.

Fitness, however, is the ability to do physical activity or to perform physical work. There are three components of fitness: strength, flexibility, and endurance. It is the combination of these three components that leads to the achievement of fitness. Knowing the fitness values and principles that apply to dance class can provide motivation for working hard, working safely, and setting goals. Dance goes beyond the demands of exercise. Dance is an art form that is mentally emotionally challenging. For the dancer, fitness is a worthwhile by-product of the pursuit of perfection.

Strength: is the ability of a muscle or a group of muscles to exert a force against a resistance in one all-out effort. The body needs muscular strength for several reasons. First, strong muscles increase joint stability, which makes the joints less susceptible to injury. Second, improved muscle tone helps prevent common postural problems. For example, strong abdominal muscles can help alleviate postural problems associated with the back. Third, the body needs muscular strength because it contributes to agility, helps control the weight of the body motion, and helps the body maneuver quickly. For muscular strength to be increased, the muscles must be contracted against a heavy resistance. As the muscles become stronger, the resistance applied must be increased if muscular strength is to continue to increase.

Strength Development Through Dance: Most dance classes develop strength through isometric, or static, contraction. In an isometric contraction, tension is developed in the muscle, but the muscle does not shorten and there is no joint movement. A simple example of an isometric contraction is tightening the abdominal muscles (lifting and engaging the abdominal wall). In a dance class, a dancer continually

contracts isometric by maintaining correct alignment. Dance classes also develop strength through isotonic training. In an isotonic contraction, the muscle shortens and joint movement occurs. Push-ups, leg lifts, and plies are examples of isotonic exercises. The resistance used is your own body weight.

Flexibility: Although flexibility is generally associated with the elasticity of muscles, the total concept of flexibility is denoted by the range of motion of a certain joint and its corresponding muscle groups. Flexibility is influenced by the structure of the joint's bones and ligaments, the amount of bulk that surrounds the joint, and the elasticity of the muscles whose tendons cross the joint. To increase flexibility, the muscles must be stretched about 10 percent beyond their normal range of motion. As flexibility increases, the range of the stretch must also increase for flexibility to continue increasing.

Flexibility Development: Dance requires a tremendous amount of flexibility. During the warm-up section of the class, the muscles are warmed and then put through a lengthy routine of stretching, or flexibility-enhancing, exercises. The hip joint receives a great deal of attention during the stretching routine. Hip-joint flexibility aids the dancer achieving high leg lifts. The Achilles tendon needs flexibility for high jumps and smooth landings. The back must be flexible, as well as the ankles and the shoulder joint, so that body can achieve a myriad of positions. Since flexibility is so essential to the dancer, every dance class focuses on exercises to achieve it.

Endurance: is the ability of a muscle or group of muscles to perform work for a long time. With endurance, a muscle is able to resist fatigue when a movement is repeated over and over or when a muscle is held in a static contraction. There are two types of endurance: muscular and cardiovascular.

Muscular Endurance: is the ability of skeletal muscles to work strenuously for progressively longer periods of time without fatigue. Muscular endurance is attained by applying maximum resistance to the muscles, whether by adding weight or by increasing repetitions. Note that muscle endurance is highly specific; it is attained only by the specific muscles exercised.

Cardiovascular Endurance: (also called cardiorespiratory endurance) is the ability of the cardiovascular system (heart and blood vessels) and the respiratory system (lungs and air passages) to function efficiently during sustained, vigorous activity. Such activities include walking, jogging, swimming, and cycling. To function efficiently the cardiorespiratory system must be able to increase both the amount of carbon dioxide and waste products that it carries away. For cardiovascular endurance to be developed, a person must regularly engage in aerobic activities that involve using the large muscle groups. The activities must be continuous.

Endurance Training: In a dance class, during the floor-warm -up, muscular endurance can be developed in the abdominals through the repetition of sit-ups. Push-ups develop triceps and pectoral muscles. The repetition of plies, releves, and battement increase the muscular endurance of the leg muscles. In a dance class when a more continuous warm-up is led and the warm-up is vigorous enough to maintain a heart rate of at least 130 to 170 beats per minute, then you are developing your cardiovascular endurance. The type of exercise is aerobic exercise. Aerobic means "with

oxygen", which means you are able to provide oxygen to the working muscles so they are able to contract without accumulating fatiguing waste products. In a beginning dance class or any dance class it is necessary to stop at different times throughout the warm-up for corrections and explanations. Due to stopping, your heart rate may not reach 130 beats per minute, then you are not significantly taxing your cardiovascular system; cardiovascular endurance will not improve. Aerobic exercise must be sustained for at least 20 minutes for improvement to occur. The best exercises to achieve cardiovascular endurance are walking, jogging, swimming, biking, and aerobic dance.

Anaerobic Exercise: Dancers must also perform anaerobic exercise which occurs when the body works at a very high intensity and cannot deliver enough oxygen to prevent the buildup of lactic acid. The lactic acid makes the muscles feel fatigued very quickly, so anaerobic exercise can be sustained for only short bursts of 1 to 2 minutes. By continually stressing the anaerobic response, the body can increase its tolerance of lactic acid. As a result, the body can prolong anaerobic bursts of energy. Dance stresses the anaerobic response with across the floor locomotor combinations containing jumps, leaps, turns, and fast footwork. Dance combinations provide anaerobic exercise and improve anaerobic metabolism.

Overload Principle: Dance can be a way to achieve fitness. But like any means of fitness, for improvement to occur the overload principle must be applied. This means elected parts of the body must be subjected to loads greater than those to which they are accustomed. The principle can be summed up in this simple rule: Do more today than you did yesterday, and do more tomorrow than you did today. The overload principle affects the development of strength, flexibility, and endurance. For muscular strength to increase, muscles must work against a greater than normal load. For flexibility to increase, muscles must be stretched beyond their current length. For endurance to improve, muscles must be exposed to increasingly more sustained work. For cardiovascular endurance to improve, there must be an increased demand on the heart and lungs.