

Fitness, Aerobics & Gym Operations

Physical Fitness is a dynamic state of energy and vitality that enables one not only to carry out daily tasks, active leisure time pursuits, and to meet unforeseen emergencies without undue fatigue, but also to avoid hypokinetic diseases, while functioning at an optimum level of intellectual capacity and experiencing the joys of life.

BENEFITS OF BEING PHYSICALLY FIT

1. Strengthens and improves the functioning of the heart and lungs.
2. Reducing risk of heart and vascular diseases by increasing the HDL in the blood.
3. Lowering the plasma triglyceride levels.
4. Improving the function of heart by promoting beneficial changes in the structure and function of the coronary arteries.
5. Improving blood pressure control, reducing the risk of diabetes.
6. Strengthening the muscles, ligaments, tendons, joints and bones.
7. Alleviating muscle pain and improving walking capabilities in people who suffer from peripheral arterial disease.
8. Making the joints more flexible in people suffering from arthritis>
9. Preventing osteoporosis by strengthening and slowing down the loss of calcium in the bones.
10. Improving the functioning of immune system and thereby reducing the incidents of illness.
11. Improving temperature regulation at rest and during exercise in different environments.
12. Improving digestion.
13. Normalizing hormone levels, helping to alleviate premenstrual and menopausal symptoms.
14. Improving metabolism.
15. Assisting in weight control mainly by burning calories and thereby reducing fat.
16. Allowing body to use fats and sugars more efficiently.
17. Reducing the symptoms of aging.

18. Reducing stress and combating depression.
19. Raising self-esteem and physical awareness.
20. Finally, promoting a healthy lifestyle.

COMPONENTS OF FITNESS

Health-Related Fitness

- Muscle Strength
- Muscle Endurance
- Flexibility
- Body Composition
- Cardio-respiratory
- Endurance

Skill-Related Fitness

- Agility
- Balance
- Coordination
- Power
- Reaction Time
- Speed
- Skill-Related Fitness

Match the Components of Fitness with their definitions

Incorrect One's

Cardiovascular Fitness	Refers to the range of movement at a joint.
Coordination	Refers to the proportions of lean body mass and body fat.
Muscular Endurance	The mixing of different abilities into the smooth execution of task.
Speed	The ability to maintain the equilibrium of the body.
Balance	The ability to produce strength performances quickly.
Agility	The ability to respond to a given stimulus.
Flexibility	The ability to change direction accurately and quickly.
Power	The quickness with which one is able to move the body from one point to another.
Reaction Time	The ability of a muscle or muscle group to apply force and overcome resistance.
Strength	Refers to the capacity of the muscle or group of muscles to work continuously.

Body Composition	The ability to exercise the whole body for prolonged periods of time.
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TECHNIQUES OF TRAINING

A **warm-up** is usually performed before participating in (technical) sports or exercising. A warm up generally consists of a gradual increase in intensity in physical activity. For example, before running or playing an intense sport one might slowly jog to warm muscles and increase heart rate. It is important that warm ups should be specific to the exercise that will follow, which means that exercises should prepare the muscles to be used and to activate the energy systems that are required for that particular activity. Warming up prepares your body mentally & physically.

To build great strength, **overloading** of muscles is necessary. The overload technique involves lifting weights that are heavier than those normally lifted. The overload also involves exercising for a longer period of time than we normally exercise. Doing a greater number of exercises than normal is overload.

The technique of gradually increasing the amount of weight lifted, the time spent exercising, or the exercises done at one workout is known as **progressive training**. Progressive training is a part of almost all types of training.

The **interval training** technique uses alternating periods of vigorous exercise and rest. Each time we workout in interval training, we should exercise a little harder or a little longer so our body can build up its capacity for exercise. Interval training can be used with any kind of exercise.

A training programme can be designed to develop the particular physical skills athletes need. This technique is called specificity training and involves exercises that match the muscle movements used in the sport itself.

The threshold of training is the amount of exercise we need to do in order to improve our fitness. The three parts that make up the threshold of training are intensity, frequency and duration.

Threshold of Training

- Intensity
- Frequency
- Duration

Intensity refers to the 'load' of an exercise bout and deals with how hard we must exercise to improve our physical fitness.

Frequency deals with how often we should exercise in order to improve our fitness. For exercise to be beneficial it must be done at least 3 times a week.

Duration refers to the length of an exercise bout and deals with how long we need to exercise in order to improve our fitness.

Cooling down is the term used to describe an easy, full-body exercise that will allow the body to slowly transition from an exercise mode to a non-exercise mode. Depending on the intensity of the exercise, cooling down can involve a slow jog or walk, or with lower intensities, stretching can be used. Cooling down helps release lactic acid in the muscles, reduces the chance of sore muscles and allows the heart rate to return to its resting rate. A cool down will also allow the person to mentally transition to a non-exercise state.

EFFECTS OF EXERCISE ON THE SKELETAL SYSTEM

1. Exercise imposes strain on bones, cartilage or ligaments which can be tolerated within limits but if it exceeds the physical capacity of an individual, it may lead to bone fracture, malfunctioning or deformity of joints & injury to cartilage and ligaments.
2. Systematic exercise for a considerable time has an effect on the length and shape of bones of children.
3. Children doing regular exercise often become taller in comparison to those who don't because their bones and ligaments become strong.
4. Regular exercise helps in maintaining the flexibility of our joints and correct posture of our body.
5. Postural defects can be eliminated by regular exercise.

EFFECTS OF EXERCISE ON THE MUSCULAR SYSTEM

1. Muscle becomes strong as a result of systematic exercise.
2. Prolonged exercise stimulates growth of muscle fibres causing them to thicken and increase in size.
3. Tissue that binds the muscle together increase in amount and tensile strength.
4. Muscles gain the ability of withstanding stress of a prolonged activity, i.e. endurance develops.
5. Color of the muscle improves due to increase in capillaries.
6. Muscles remain in a state of partial contraction, i.e. exercise makes them more efficient and acts as a safety measure.
7. Muscles gain speed with which an activity can be performed.
8. Foods are stored and are available in larger quantities

EFFECTS OF EXERCISE ON THE CIRCULATORY SYSTEM

Blood circulation plays a very important role during exercise.

1. During exercise, the increased oxygen and energy requirement of the contracting muscle is met by an increased flow of blood.
2. As a consequence of this, the heart rate increases in order to increase the rate of blood flow with each muscle contraction.
3. Because of the increased supply of blood in the Aorta, during exercise, the blood pressure increases.
4. This increase results in an increased circulation of blood through the systematic and pulmonary systems.
5. Increased demand of oxygen speeds up the functioning of lungs.
6. The body temperature increases and the blood tries to maintain body temperature by distributing the heat generated.

EFFECTS OF EXERCISE ON THE CIRCULATORY SYSTEM

Because of regular exercise, the heart is indirectly exercised.

1. Heart muscles become strong and thus its Stroke Volume rises.
2. The increase in pulse rate is lowered as a result of exercise.
3. Normal heart rate is slightly lowered as a result of exercise.
4. New capillaries are formed within the muscle fibres.
5. As a result of exercise, the blood composition is changed.
6. Cholesterol level in blood lowers, which prevents deposits along inner walls of arteries.
7. Studies show that blood clots less rapidly in trained individuals.
8. An individual can withstand higher concentration of lactic acid in blood. This delays fatigue and exhaustion.

EFFECTS OF EXERCISE ON THE RESPIRATORY SYSTEM

1. The efficiency with which the respiratory system operates is increased as a result of participation in regular exercise.
2. As a result of exercise, tidal air capacity of athletes increase.
3. The larger oxygen debt incurred by an untrained person results in greater delay in the post exercise return of breathing to the normal level.
4. Because of increased efficiency in the exchange of gases, the demand for oxygen decreases resulting in steadier breathing.
5. The maximum respiratory minute volume that can be achieved during strenuous exercise increases.
6. Regular exercise may result in an increase in the vital capacity in adolescent children and young adults.
7. The intercostal muscles engaged in respiration become strong.

AEROBICS

Aerobics is a form of exercise that comprises rhythmic aerobic exercise with stretching and strength training components in order to improve all elements of fitness (flexibility, muscle strength, and cardio-vascular fitness). It is typically performed to music in a group setting with a leader, although it can be practiced solo and without musical accompaniment. Physical illness being targeted, practitioners go through variable routines comprising a number of different exercises. Proponents of aerobics cite staving off boredom and working out the whole body as two of the advantages of aerobics over other types of exercise. The reputedly higher safety factor inherent in a fitness routine led and overseen by a trained professional is another.

FORMS OF AEROBIC EXERCISES FLOOR AEROBICS

There are different kinds of aerobics performed on the floor like low impact aerobics & high impact aerobics.

Low Impact Aerobics has aerobic movements (movements involving large muscle groups used in continuous rhythmic activity) in which at least one foot contacts the ground at all times. This type of exercise is ideal for elders, pregnant women and overweight individuals.

High Impact Aerobics is aerobic dance in which there are moments when the body moves through space and both feet lose contact with the ground. This type of exercise utilizes

aerobic movements such as jumping and hopping. It also provides cardiovascular efficiency along with good metabolic benefits.

FORMS OF AEROBIC EXERCISES STEP AEROBICS

Step aerobics is stepping up and down from a platform and it can offer a moderate to high intensity cardiovascular workout with low impact stresses. The intensity of the exercise for the participant can be individualized by changing the platform height and use of propulsion. It is distinguished from other forms of aerobic exercise by its use of an elevated platform (the step), which enables a more vigorous workout than can be achieved with "regular" aerobics.

FORMS OF AEROBIC EXERCISES WEIGHT AEROBICS

Weight aerobics is a set of aerobic exercises performed with light weights. Strength training not only increases bone density but also the thickness of tendons and ligaments. Strength training can prevent muscle atrophy through the aging process. Using weights in aerobic exercises raises the basal metabolic rate. Safety measures regarding use of weights should be followed strictly.

FORMS OF AEROBIC EXERCISES AQUA AEROBICS

Aqua aerobics is the performance of aerobic exercise in shallow water such as a swimming pool. In some areas it is known as aqua-fit or water aerobics. There are many benefits of performing aerobics in the water. Water-related exercise increases cardiovascular fitness, as well as improving overall strength. Also, as the water provides support for the body, the risk of muscle or joint injury is greatly reduced, if not completely eliminated. A great advantage in aqua aerobics is, because it is performed in chest-deep water, both swimmers and non-swimmers can participate. Aqua aerobics trainers usually wear swimsuits in the water.

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