

Unit 10 | Training in Sports

Sports Training

Training means the process of preparation for some task. Sports training is a special process of preparation of sports persons based on scientific principles aimed at improving and maintaining higher performance capacity in different sports activities. It is a particular type of training designed to improve fitness and abilities to perform in a given sports

Talent Identification

1. Talent Identification is to ensure that the appropriate players are being selected.
2. Selection must be done fairly and equitably. This requires a better understanding of player identification and the adoption of a suitable selection policy.
3. Selectors need to ensure that they are assessing the correct qualities and attributes, and to ensure consistency in selection.
4. Talent identification is the process of recognising current players that have the potential to excel. It involves an attempt to predict the future capacity of performance of an individual.
5. Talent identification is based around a number of areas, these being physical attributes, physiological skills, technical skills, psychological skills, cognitive skills and social skills
6. It is important that the talent identification programme has a clear focus that places the emphasis on identifying players with long-term potential rather than current, tournament winning ability.

Sports Training Cycle

1. There is a concept of periodisation in sports which includes three different training cycles.
2. Periodisation is an organised approach to training which involves progressive cycling of various aspects of a training programme during a specific period of time.
3. It can be defined as the purposeful variation of a training programme over time, so that the competitor gets closer his or her optimum adaptive potential just before an important event.

Macrocycles

A macrocycle refers to the entire season or training period as a whole. For an athlete, if the competitive season happens once a year, then the macrocycle will be of a full year. If there will be two competitions within a year, then we say there are two macrocycles. Macrocycles are then further divided into mesocycles.

Mesocycles

The meso cycle represents a specific block of training that is typically made up of 3-4 micro cycles (3-4 weeks) that is designed to accomplish a particular goal. A mesocycle form a number of continuous weeks (micro cycles) where the training programme focuses towards improving the same physical adaptations, for example maximal strength, static strength, maximal speed or Functional Threshold Power (FTP).

Microcycles

Within mesocycle, we have micro- cycles. These are the least unit or block of time within a mesocycle and are normally a week long though it can vary from a few days to a few weeks.

Strength

1. It is the capacity of the whole body d or off any of its path to exert force.
2. Muscular strength is the force that a muscles or a group of muscles can exert against a resistance in one maximum effort
3. It is defined as the amount of force a muscle or group of muscle can exert

Types of Strength

Static

Dynamic

Maximum, Explosive, Strength Endurance

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Static Strength

Static strength is also known as Isometric Strength. It is the ability of muscles to contract against resistance. Static strength can be measured using a Dynamometer. This kind of power cannot be seen directly. Static strength is rarely used in sports, but it is generally used in phases during weightlifting.

Dynamic Strength

Dynamic strength is also known as 'Isotonic Strength', because it is related to the movement. We require dynamic strength to complete pullups and push-ups. Muscles begin to refuse to work after a certain time period due to the tendency of dynamic strength to decline during such workouts. Ex: Push-up & Pull-Up

Types of D.S.

- i) Maximum Strength: It is the ability to work against maximum resistance. Ex- Weightlifting, Shot Put etc.
- ii) Explosive Strength: It is the ability to overcome resistance with high speed. It is the combination of strength & speed abilities.
- iii) Strength Endurance: It is the combination of strength & endurance abilities. Commonly for long distance races, swimming, cycling etc.

Method of Improving Strength

Isometric Exercises

This exercises are those exercises, which are not visible. In fact there are no direct movements, hence they can't be Observed. In these exercises, work is performed but is not seen directly. In these exercises, a group of muscles carry out tension against the other group of muscles. For example, pushing up against a strong wall.

Isotonic Exercises

While doing exercises tension creates in working muscles and there is a change in length. Muscles get shortened and lengthened.

Isotonic exercises tone up the muscle. Muscles become flexible. Activities like Jumping, running, Weight lifting are some examples of isotonic exercises.

Isokinetic Exercises

In these exercises, there is a movement with continuous tension in both flexor and extensor muscles. In this muscles contract throughout the range of movement at a constant speed. Both flexor and extensor muscles contract simultaneously, as a result, both develop, thus it takes less time to build muscle. Activities such as rowing and swimming,

Endurance

1. Endurance is the ability to sustain or continue the activity.
2. In other words, it is the ability to resist fatigue for a longer period.
3. Endurance is required for almost all major sports. It is one of the important components for middle and long-distance races, football, hockey, basketball, handball, etc.

Types of Endurance

Speed Endurance

This is the type of endurance in which the activity is done with high speed and intensity. This endurance is for a shorter duration (from 30 to 60 sec) with 80% to 90% of top speed ability. This type of Endurance is required in medium distance races, swimming, basketball, tennis, badminton, etc.

Strength Endurance

This type of activity is done powerfully and forcefully for a shorter duration. This duration is from 2 to 3 minutes.

Strength endurance is generally performed in absence of oxygen. It is required in wrestling, boxing, Judo, etc.

Long term Endurance

This type of Endurance is required when the activity is done for a longer duration and the intensity or speed is slow. It delays fatigue, it is required for long-distance running, cycling, cross country, marathon, football, etc.

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Method to Improve Endurance

Continuous Training Method

It is one of the best methods for improving endurance. In this method, Athletes perform running for long periods without taking rest in between.

In this method, speed remains slow because the exercise is done for a longer period. This method develops a very high level of Endurance.

This method has three types:

1. Slow Continuous Training Method: This method is used by long-distance runners. Duration of workout is 1 - 2 hours, distance covered is 10 - 20 km.

2. Fast Continuous Training Method: This method is used by middle-distance runners. Duration of workout is 15 - 40 minutes, distance covered is 5 - 10 km

3. Variable Continuous Training Method: This method is a combination of fast and slow pace continuous methods. Here the workout is done with a variable speed of 40-100 percent of the best capacity.

Interval Training Method

In this method, the principle of effort and incomplete recovery is followed. It is special endurance training that involves high-intensity workouts followed by incomplete rest. This method is the best method for endurance development. The Interval training method is based upon the scientific principles where the load is controlled through various factors to provide incomplete recovery.

Workout - Rest - Workout - Rest...

Fartlek Training Method

The only thing to keep in mind, that he needs to reach the finishing point in the desired time.

Advantages of Fartlek Training Method

1. It can practice in off season period
2. It develops creativity and gives adventure
3. Natural motivation is there with no boredom
4. Art of self-learning is experienced

Speed

1. Speed is the ability to perform the movement at a faster rate. Speed depends on heredity but can be developed through proper training.
2. It is the capacity of moving a body with the greatest possible velocity.

Types of Speed

- **Reaction Time:** It is the time taken by the body to respond immediately after the stimulus. It is the first reaction to bring our body into action.
- **Acceleration Ability:** It is the time taken by the body to reach maximum speed. This ability depends upon explosive strength, technique, and flexibility.
- **Speed of Movement:** It is the time taken by the body to perform complete action.
- **Locomotor ability:** It is the ability to maintain maximum speed for maximum distance.
- **Speed endurance:** It is the ability to perform movements with high speed under conditions of fatigue.

Method to Improve Speed

1. **Acceleration Run :** In this method, Athletes try to attain top speed as fast as possible. They run for 20 - 30 meter distance with maximum speed. This is repeated 5 to 10 times with a sufficient rest period. The first few strides should be shorter and the frequencies of steps are very fast.

2. **Pace Run Training Method :** Pace races mean running the whole distance of a race at a constant speed. For 800m training athletes can run a distance of 300m or 20% of racing distance at full speed.

Flexibility

1. Flexibility is when the joints can move to their maximum range. It is the ability to execute movement with greater range.
2. It is affected by muscle length, adjoin ligaments, tendons. Flexibility helps in preventing injuries, Improving Posture, making the joint healthy, Improving balance.

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Types of Flexibility

Passive Flexibility: Joints can move in maximum range with external help, e.g. stretching with a partner.

Active Flexibility: It is performed without external help. Active flexibility is further divided into two parts:

✦ **Static Flexibility:** It is the flexibility performed from a stationary position, e.g. Chakrasana, toe touching

✦ **Dynamic Flexibility:** It is the flexibility performed while in motion. This is required for gymnastics, diving, etc.

Coordinative Ability

1. Coordinative Ability is the ability of the body to perform the movement with perfection and efficiency. It is the ability to execute a sequence of movements smoothly and accurately.
2. Coordination is required for qualitative movement. It is the proper combination of strength, speed, endurance, and flexibility during movement

Types of Coordinative Ability

✦ **Adaptive Ability:** Ability to adjust the movement effectively based on changes.

✦ **Balance Ability:** Ability to protect the body in a stable position

✦ **Rhythm Ability:** Ability to observe the rhythm of a movement and to regain balance quickly.

✦ **Reaction Ability:** Ability to react immediately and quickly to a signal.

✦ **Coupling Ability:** Ability to combine the movements of different body parts for performing a perfect sports movement.

Circuit Training

Circuit training is a type of resistance training or body conditioning that involves high-intensity aerobics. It aims to increase physical endurance and strength. In this training technique, specific exercises of varying kinds are carried out with or without equipment at a prescribed dosage.

An exercise "circuit" is a set of all the program's prescribed exercises. Following the completion of one circuit, the first exercise is repeated for the following circuit.

It was developed in 1957 by "Adamson and Morgon."

Method to Improve Flexibility

1. Ballistic Method: In this method, individuals perform various stretching exercises while in motion. In this stretching the muscle with help of swinging the limbs.
2. Static Stretching Method: In this method, various slow stretching exercises are done from a stationary position and hold the final position for sometimes.
3. Passive Flexibility Method: In this method flexibility exercises are done with external help. Such as partner help, stretch ropes, bid role ball, bar stand, etc.
4. Proprioceptive Neuromuscular Facilitation Techniques (PNF): This technique is used by advanced athletes for gaining flexibility. Here you move into a stretch position then your partner holds the limb in this position.

Method to Improve C.A.

1. Target Exercises: Target practice is an important exercise for improving hand-eye coordination. Despite appearances, aiming and throwing something at a target is a very complex and difficult task.
2. Balance Exercises: This exercises must be included in your coordination training. Because of your ability to perform static movements, you can perform a variety of bodily functions such as walking, squatting and pressing overhead.
3. Ball or Balloon Toss: Catch the balloon and bounce it back and forth with your hands, head and other body parts. Because the balloon floats slowly, you can change the angles to make the exercise more unpredictable. When working out with a partner, or a trainer, try standing farther apart or facing different directions.

Benefits of Circuit Training

1. It is a simple and engaging technique.
2. It only takes a brief time.
3. It can be done both inside and outside.
4. It impacts all of the body's organs.
5. The coach can readily keep an eye on it.
6. It creates a captivating environment.

Importance of C.A.

1. It increases stamina and strength. A single circuit can result in maximum muscular function.
2. It relieves all forms of strain.
3. It is an exercise programme that combines resistance training with cardiovascular fitness.