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## COMPONENTS OF PHYSICAL FITNESS

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### ABSTRACT:

Physical fitness has various components and various sports activities as well as other physical activities develop varying amounts of each components. For example, sports that include constant movements such as swimming and running, improve heart and lungs' efficiency whereas, gymnastics improves flexibility. The various components of physical fitness are being described below:

**KEYWORDS:** Physical fitness , various components and various sports activities.



### INTRODUCTION

#### 1.Strength

Strength is the ability of the muscles to overcome resistance. Strength is a major components of physical fitness. Strength can also be defined as the amount of force a muscle or muscles group can exert. Strength of the body can be measured in pounds or dynes. A certain level of strength is also essential for a common man whereas, for a sportsman it is most essential to have strength.

Some avocations or sports may require less amount of strength while other avocations or sports may require much strength. In the same way some sports or

avocations require different type of strength, while some sports require other type of strength. For a better understanding, strength can be divided into two parts- (a) Dynamic (b) static strength.

#### a) Dynamic Strength.

Dynamic Strength can called isotonic Strength because it is related to the movements. In pull-ups and push-ups we require dynamic strength. In performing such workout, there is a diminishing tendency in dynamic Strength and as a result, after sometime, muscles refuse to do work. At this juncture, man is not able to do even one extra pull-up or push-up. Movements are clearly visible when someone movements, Strength appears in a different form. Generally, dynamic

strength can be divided into three parts-(i) Maximum Strength (ii) Explosive Strength (iii) Strength Endurance.

**i. Maximum Strength.** It is the ability to act against maximum resistance. Maximum Strength is not usually used in majority of sports. It is usually used in those sports in which very heavy resistance have to be tackled, e.g., weight lifting, shot-put, Hammer throw, Discus throw, and Javelin throw. In other sports maximum Strength is required for a short period, e.g., cross position in Roman rings in gymnastics, starting and accelerating phases in sprinting events and take off in Long jump, High jump, Triple jump and in pole-vault. In such sports maximum Strength is really very important.

**ii. Explosive Strength.** Explosive Strength can be defined as the ability to overcome resistance with high speed. In fact, it is a combination of Strength is generally used in sprint. Explosive Strength is generally used in starts, weightlifting, shot-put, hammer throw, javelin throw, discus throw, long jump, high jump, triple jump and pole-vault. Up to some extent it is also used in endurance events, specifically in the start and spurt phases. In above, mentioned sports, this force is applied just like explosion, that's why it is called explosive power.

**iii. Strength endurance.** It is the combination of Strength and endurance abilities. Strength endurance can be defined as the ability to overcome resistance or to act against resistance under conditions of fatigue. It can be a form of static or dynamic Strength depending on the fact whether the movement is static or dynamic. Strength endurance is commonly used in long distance races, swimming, road cycling, pole-vault and combative sports. So it can be alluded that Strength endurance is usually applied in most of the sports.

**b. Static Strength.** Static Strength is also called isometric Strength. It is the ability of muscles to act against resistance. Static Strength can be measured by dynamometer. This type of Strength is not seen directly. Static Strength is not usually applied in sports but in weightlifting it is applied in phases.

## 2. Speed

Speed may be defined as the ability capacity of the individual to perform a movement of the same pattern at faster rate. In fact, speed is the ability to move the body as fast as possible, especially in running. However, different sports skills require different types of fast movements and quick reactions. Speed of movements is much more than just running speed; it includes the speed of body parts, such as the explosive spring of the shot-putter's body across the throwing circle or the speed of a gymnast's in-hand spring. Most of the sports require speed over short distances such as running between wickets in cricket. Most probably, speed depend on heredity factor, specifically on the type of muscle fibres. There are two types of muscle fibres – Fast twitch and slow twitch. Fast twitch fibres are able to contract rapidly and produce maximum force, whereas, slow twitch fibres contract slowly and produce less force. Along this, fast twitch fibres fatigue quickly, whereas, slow twitch fibres fatigue slowly. Now it can be decided easily whether an individual is suited to speedy events, or for events which are related to endurance because percentage of these fibres in an individual can be measured. So it can be alluded that speed is inherited, it is difficult to improve speed significantly. But up to some extent, training can enhance the speed slightly by reducing the reaction time of an individual. Most probably, speed is used in every sports except endurance related sports.

## 3. Endurance

Endurance is another component of physical fitness like speed and endurance. It is the ability to sustain an activity. Here also define endurance as the ability to resist fatigue. In all sports, endurance is directly or indirectly of high importance. It is usually measured by the number of sit-ups an individual can complete in one minute is often used to measure the endurance of the stomach muscles. The type of endurance varies from sports to sport. Basically, there are two types of endurance, i.e., short-term endurance and long-term endurance.

**a) Short-Term Endurance.** Short term endurance is needed in sports where the action or movements is only for short duration and the action or movements is intense, e.g., in hockey, football and wrestling, etc.

**b) Long-Term Endurance.** Long term endurance is needed in sports where the action or movements is longer duration and the action is less intense, e.g., in long distance races, etc. Endurance is not only needed in sports but it is also needed for a common individual in day-to-day life. Endurance can be increased by continuous training method, interval training method and repetition method.

#### 4. Flexibility

For physical fitness flexibility is a necessary component. Flexibility is the range of movements of joints. An individual, who has proper flexibility, can perform his work very easily. Such person seem to be attractive. Usually, they tend to have good personality. Flexibility is not only a significant factor in sports but, it is also equally significant for an individual in daily life.

Range of movement varies significantly from joint to joint but depends on the structure of the surrounding tendons, ligaments and muscle tissues. Flexibility is related to genetic factors as well as physical-activity programmes. Usually, tight joints prevent smooth and efficient movements. Flexibility training prevents muscular injuries. Maintaining flexibility throughout the life, especially in back and leg muscles, may help to prevent back problems. Flexibility is helpful in learning various skills easily such as back stroke in swimming. These skills can be learnt easily if an individual has ample flexibility. Flexibility is of two types-(a) passive flexibility and (b) active flexibility.

**a) Passive Flexibility.** The ability to do movements with greater distance with external help is called passive flexibility, e.g., stretching exercise with the help of partner. Passive flexibility is always more than active flexibility. In fact, passive flexibility is the foundation for active flexibility.

**b) Active Flexibility.** Active flexibility is the ability to do movements for a longer distance without external help, e.g., to do a stretch without the help of partner. Active flexibility can further be divided into two parts-static flexibility and dynamic flexibility.

**Static Flexibility.** Static flexibility is usually required by a sportsperson when he remains in static position, e.g., in diving, sitting, lying and starting position in various sports.

**Dynamic Flexibility.** Dynamic flexibility is needed for doing movements with greater distance when an individual is in motion. Both types of flexibilities are essential for a general individual and for a sportsperson. Flexibility can be achieved by stretching exercises. Before performing stretching exercise one should do gentle jogging or slow running.

#### 5. Coordinative Abilities

Before 1980, speed, strength, flexibility, strength and agility were considered the main components of physical fitness, but after that the term 'agility' changed into coordinative abilities. The term 'agility' was discarded because it was not clearly defined and there was no any unanimity in its meaning. So, nowadays "coordinative abilities" is used in place of agility. Mainly coordinative abilities depend on the central nervous system. The coordinative abilities are those abilities of an individual which enable the individual to do various related activities properly as well as efficiently. Our accuracy, rhythm, flow and constancy depend on our coordinative abilities. These abilities can be of various type such as balance ability, rhythm ability, adaptation ability and reaction ability. Such types of abilities can be enhanced through general or specific exercises. Usually, the beautiful and graceful movements of our body are directly related to our coordinative abilities. Such types of abilities are much helpful in gymnastic and diving. Coordinative abilities can be improved if we perform correct movements. We should avoid incorrect movements while playing any game or sport. If we keep the above-mentioned points into consideration, coordinative abilities can be improved.

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