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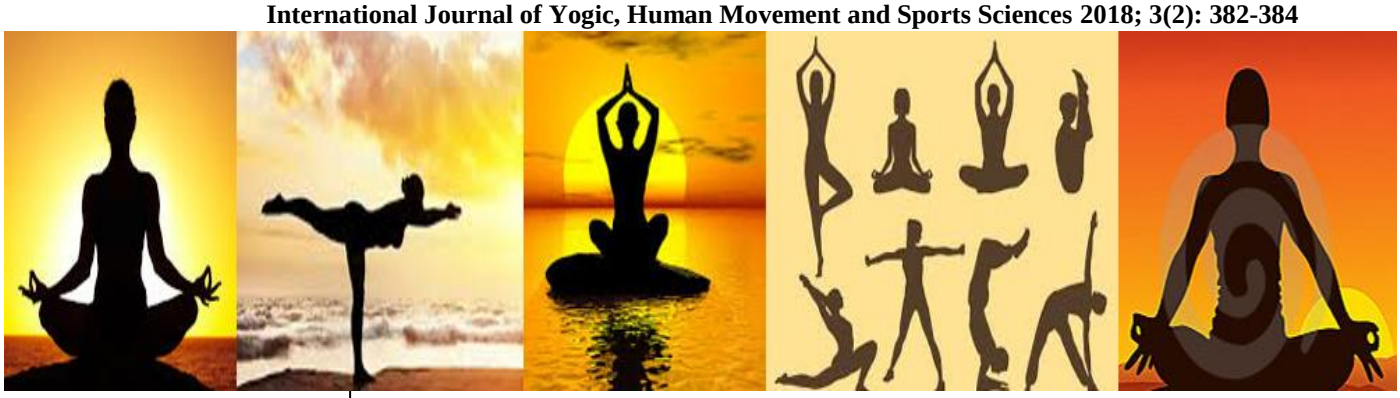

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Role of complex training to enchance the playing ability of tennis players

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Abstract
Complex training integrates Plyometrics, Strength training and also specific sport movement exercises. It activates the nervous system and also the fast twitch muscle fibers, strength exercise also activates the explosive power. The plyometric movement helps the muscle fibers to activate by the strength training movement during this process of activated state the muscles have a tremendous ability to adapt even slow twitch muscle fibers to perform like fast twitch fibers in the form of intense training. Competitive tennis player requires a combination of the major physiological variables; however, the specifics of these variables have yet to be determined appropriately. Complex training have been suggested as being beneficial for performance and injury prevention, competitive tennis players need a mixture of fitness qualities such as speed, agility, repeated sprint ability, and power, combined with a well-developed aerobic fitness to achieve high levels of performance. Tennis players must be able to react as fast as possible to actions performed by the opponent. Initial acceleration and agility are various explosive actions that are crucial when the player is involved in fast game play. Speed is the ability to achieve high velocity, and it is a manifestation of strength applied to a specific tennis technique. Consequently, the optimal design and implementation of complex training strategies that enhance these specific fitness qualities are of significant interest to tennis coaches and physical trainers.

Keywords: Training, fitness, tennis, competitive

Introduction

Training

Training is a set of exercises designed to Enchance the performance of the skills and to increase the capacities of a player for the game. Process of training may be conducted to a period of days, months and even years. Training it is mostly used in the area of sports, the sports training is basically doing a physical exercises and also improvement of sports performance. Sports training have different dimensions they are (i) It is a planned and controlled process for achieving a goal, (ii) It is an organized process through planned and systematic. Training will influence the development of a player by day to day practice of the skills.

Sports Training

The very purpose of the training program is in the development of acceptable levels of health related physical fitness and promote the acquisition of basic movement skills. To achieve these things, training should have some basic principles. Of these the most basic principle of training is overload. Training often systematically exposes selected physiologic systems to intensities of work or function that exceed those to which the system is already adapted. The required frequency of training however depends on the season, type of player, activity and the specific component of fitness. There is no substitute for consistency in a training program. The player might participate in endurance training six times a week and resistance training three times a week. Performing the work progression is the successful training program plan for a steady rate of progression over a long period. The player has to improve over several years of participation; to progress further that the appropriate physiological systems continue to be overloaded. However, too rapid an increase of the training stress may lead to exhaustion and impaired performance. Individuality means factors such as age, sex, maturity, current fitness

level, years of training, body size, soma to type and psychological characteristics should be considered by the coach in designing each player's training regimen.

Complex training

Complex training integrates Plyometrics, Strength training and also specific sport movement exercises. It activates the nervous system and also the fast twitch muscle fibers, strength exercise also activates the explosive power. The plyometric movement helps the muscle fibers to activate by the strength training movement during this process of activated state the muscles have a tremendous ability to adapt even slow twitch muscle fibers to perform like fast twitch fibers in the form of intense training.

Tennis

In the 12th century in France hitting a ball with bare hand and with a glove and later in 16th century it developed to a racquet and the rules were framed, In the 1880s the British army and civilian officers brought the game to India. Real tennis was reaching its popularity throughout royalty in Europe. In 1913 with twelve national tennis associations together agree to started the International Lawn Tennis Federation (ILTF) which was renamed in the year 1977 as International Tennis Federation (ITF).

General Tennis ability

The game of tennis involves a lot of physical activities. It needs speed, agility, endurance, balance hand-eye-coordination and flexibility which are important to be a player, and also tennis skills and techniques are required needed to be a successful player. (i) Player has to run speed for a ball as quick as possible (ii) agility and alertness to anticipate the opponent's shot, (iii) Muscles and tendons needs to be more flexible to hit a ball which is difficult to reach, (iv) The player should have more endurance to play long hours during the matches.

Speed

Speed is the capacity to travel or move very quickly. Speed is divided into different types (i) Maximal running speed in simple words as faster as possible, (ii) Optimal speed in other words controlled speed it also includes speed of the limb. Speed training involves development of a skill so that the technique is performed at a faster rate. To develop speed the skill must be practiced on a regular basis at a maximum rate of movement.

Maximal running speed: is developed by short distance at maximum effort, The skill of moving at speed should be practiced before the player becomes fatigued, This is the reason recovery between repetitions and sets should be long enough to recover from any fatigue. It is important to include reaction time it is also the time between a stimulus and the first movement by the player, the other factors physiological and psychological influence reaction time to the initiation of movement it also can be improved with practice.

Agility

Agility is the capacity to change and control the direction and position of the body to maintain the momentum.

Endurance

Endurance refers to the components to perform work of a given intensity over a time period, and it is also called stamina. A player is considered to have good endurance when he does not easily fatigue or also continue to perform in a state of fatigue. Endurance should be developed first to all the players in the bio-motor components. Without endurance it is difficult to repeat other types of training components for fitness. There are two types of endurance (i) Aerobic endurance and (ii) Anaerobic endurance.

Aerobic Endurance-Aerobic means with "oxygen" and aerobic endurance means muscular work and movement doing using oxygen to release energy from the muscle fuels. Absorption and travel of oxygen to the muscles is carried out by the cardio-respiratory system. This training leads to both a strong cardio-respiratory system and an increased ability to use oxygen in the muscles. Aerobic endurance developed by continuous or interval running. It is very important for a long duration game and it should be developed before anaerobic endurance.

Anaerobic Endurance-Anaerobic means "without oxygen" and it refers to the energy system which allows muscles to operate using energy already in storage. It allows to tolerate the buildup of lactic acid. There are two important anaerobic endurance they are speed endurance and strength endurance. In speed endurance the player to run at speed despite that build of lactic acid, in strength endurance allows the player to continue to express force despite that build of lactic acid.

Balance

Balance is one of the very important physical tennis skill and techniques a player must have. Balance is vital role to hit well placed and accurate shots. Good balance also minimizes injuries especially in the lower part of the body such as the legs, ankles and knees. Exercises and drills to improve balance can be done both on court and off-court.

Hand-Eye-Coordination

Hand-eye coordination is important so that your hand and the other parts of your body react quickly to the right moves in response to the right direction of the ball were eye see. Hand eye coordination is one of many tennis skills and techniques that are very important especially for advanced tennis where the nature of the game is very quick and fast. Although this skill is believed to be developed through years of playing tennis, drills to develop this skill is still necessary especially for young beginners.

Flexibility

Flexibility is the ability to perform joint actions through a wide range of motion. Natural range of motion of each joint in the body depends upon tendons, ligaments, connective tissue and muscles. Flexibility training can help reduce the risk of injury by gradually increasing a joint's range of motion. Restriction in flexibility is one of the most common causes of poor technique and performance and also hinders speed and endurance since the muscles have to work harder to overcome the resistance to an efficient stride length. The ideal is to start young players on regular stretching programmes to prevent the loss of flexibility that comes with age. Flexibility is a slow in process when compare to other fitness abilities to increase the range of motion of a joint the muscles have to be stretched beyond their normal point of resistance it should be done daily with appropriate flexibility exercise. The main two main types of stretching exercise are (i) Active stretching and (ii) Passive stretching.

Need of Complex Training

Tennis strength training program can make wonders to the

game, It increase power in serves, forehand, backhand, volleys in fact in all type of shots. Training allows greater speed and acceleration around the court allowing the player to move for the shots. When the days coaches believed all forms of strength training were detrimental to finely tuned skills, while the wrong type of weight training can hindrance the player's game. By improved muscular endurance it helps high level of performance during tough rallies at end of the match, Reduce occurrence of injuries over use of muscular imbalance in the body. Players swinging racquets still in their covers or with weights attached, as part of their training, are not uncommon. By combining these simple training techniques with normal stroke play, the players were in effect performing a strength set (swings with resistance) followed by a power set (normal swings) or in other words, complex training. Complex can also be applied to speed/agility training in much the same way as it is to strength and power training. In fact, all forms of over speed/overload or resisted running are essentially ways of complex movement training. The use of running sleds, parachutes, pulley systems, harnesses, weighted vests, etc allow players to perform their "strength sets" and then complete their "power/speed sets" devoid of any additional weight or impedance.

Conclusion

Complex Training plays major role in the improvement of force development in specific muscle group of the legs and lower trunk to increase racquet and movement velocity, Develop power in specific musculature of the arms and trunk to increase racquet velocity.

Some will require gym equipment and space, while others can be undertaken on court. Coaches and players should always seek specialist help to provide for appropriate exercise prescription and technique. In sports like tennis, overuse injuries of the wrist, elbow and rotator cuff muscles are all too common.

Most weight training exercises predominantly target the larger muscles groups. So while they get stronger and stronger, the smaller, more isolated muscles get neglected, That doesn't normally cause a problem until you expose your body to thousands of repetitive movements that incorporate the larger and the smaller muscle groups like a forehand drive for an example. So while you hit harder and harder shots (as the strength in your large muscles groups increases), those finer muscles are placed under a disproportionate amount of stress. The best way to compensate for this is to target and isolate those smaller muscle groups before they become over-worked. By adding a few choice of complex training exercises for the forearm and rotator cuff muscles to your tennis strength training program, you can significantly reduce the occurrence of injuries as well as the playing ability will enhance better. You can do complex training exercises at any time or phase during the entire program.

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