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## TECHNICAL TRAINING – COMPONENT OF SPORTS TRAINING IN THE TENNIS GAME AT THE AGE OF 12-14 YEARS

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### Abstract

*Aim.* Tennis is a complex sport, that includes elements and technical procedures that are manifested through executions of great finesse and precision. This sport requires perfect coordination and timing of movements, speed of reaction, execution and movement, precision during the execution of shots, resistance to effort and stress. "The question of the correct shot in tennis has been debated over time by many connoisseurs of this sport. Various theories have led to the birth of the myth that incorrect shots are caused by execution errors. The factors that can cause an ineffective shot are not only of a technical nature, mentioning here the weather, the playing surface, and even the opponent. Thus, each shot is unique, and depends on several variables." (Ciocan, A. (2011) pp. 68)

*Methods.* The experimental research undertaken within the thesis, as a result of consulting a vast specialized bibliography, aims to identify new scientific research approaches - the consolidation and improvement of the model of technical training of attack shots for tennis players at the age of 12-14 by establishing the methodology of action with means and methods included in the development of the modeling process of the tennis game.

*Conclusions.* The bibliographic study will allow the elaboration of the structure and content of the training process, in shaping the technique of attack shots in the game of tennis at the age of 12-14 years.

We can conclude that the offensive tennis game has materialized in results at the highest level, the performance requiring an exceptional genetic material, systematic, periodized training with a well-organized basic structure in which the athlete's evolution is conditioned by the level of development of specific motor capacities, of acquiring the technique of attacking shots at a higher level of preparation, adopting a modern concept of the game.

*Keywords:* technical procedures, attack shots, tennis game, offensive action.

### Introduction

With this article we aim to make a useful and relevant contribution to the existing practice regarding the benefits of attacking play and high precision attacking shots during matches.

The arguments we make for the timeliness, appropriateness and feasibility of the study in tennis were identified following general findings and assessments regarding the role of attack strokes in increasing the quality of play among young players. The experimental research undertaken within the thesis, as a result of consulting a vast specialized bibliography, aims to identify new scientific research approaches - the consolidation and improvement of the model of technical training of attack shots for tennis players at the age of 12-14 by establishing the methodology of action with means and methods included in the development of the modeling process of the tennis game. "In our country, tennis was initially practiced by Romanian students who returned to the country from their studies abroad. The beginnings date back to 1885, the year in which the first clubs were organized in Bucharest, Cluj, Brasov, Ploiesti, etc. The players not being in direct contact, the game actions, attack and defense or waiting, are the result of a succession of shots through which the players try to take the initiative, realized through offensive actions that lead to winning the point. Thus appears a characteristic and a requirement at the same time of the current game, namely the offensive game (permanent attack)." (Moise, D., Antonescu, D. (2002), pp. 70-80) The competitive game of tennis represents a dispute between the level of acquisition of technical elements and technical procedures against the background of the demand for motor and psychological qualities. The current game of tennis is characterized by great dynamism, with the player being put in a position to think and act quickly for the application efficiency of the technical-tactical arsenal, in the diversity of adversity situations. (Bompa, 2002)

### Methods

A modern tennis player directs all his actions toward gaining a position as advanced as possible, before his opponent, which can be explained by the advantages of hitting the ball close to the net.

In the struggle to gain a good position on the net, many possibilities must be established, among which we mention:

- attack on its own service;
- attack on service return;

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- the attack carried out by kicks from the bottom of the field.

For forehands, the emphasis is on striking the ball. Performing movements in the strength room that use the same movements as hitting/serving helps improve strength and coordination on the court.

Because tennis is a dynamic sport, changes in direction will be quick, and players need the strength to do so while staying injury-free. (Doboş, Baci, 2004) Playing a modern game of tennis is equivalent to attacking the net and finishing with volleys or smashes. Apart from the service stroke, there are no other possibilities for approaching the net area except by hitting from the right or left side. Other possible solutions are random and are generated by completely unusual and unforeseen situations.

The shot from the right side executed with a slight lift effect, from the end of the field, from the spot and from the lateral movement, is a shot of regularity, of keeping the ball in play and creating a positional advantage by putting the opponent in difficulty and forcing him to return the ball weaker, shorter, a situation that must be taken advantage of. The way to take advantage is to attack the net.

The preparatory part starts from the waiting position, as soon as the player has senses the trajectory of the ball. It consists of the following actions:

- moving toward the ball (walking or running forward);
- the twisting of the trunk from right to left is done by approx. 120°, starting from the initial position and continuing while moving towards the ball;
- withdrawing the racket, action that occurs simultaneously with twisting the trunk, completing the last movement;
- the racket is retracted, without a half-loop;
- withdrawal of the racket is helped by the left hand, which supports the neck of the racket, with the left elbow slightly away from the body;
- the racket is withdrawn during movement toward the ball;
- at the final moment of withdrawal, the height of the racket's tip is between the shoulder and head, and its plane is semi-open (facing forward and up);
- the end point of withdrawal must be located no more than the extension of the shoulder axis.

At the end of the racquet pullback, the weight of the body is on the left leg, which is obliquely forward and to the left, firmly planted on the ground and with the knee slightly bent. The right leg is at the side, bent at the knee and supported on the toe. (Ciocan, 2011)

The volley is an increasingly used shot in modern tennis. The volley is an offensive (attacking) stroke: the tennis player comes forward with the goal of completing the point. There are situations in which the tennis player executes the volley not because he intended to do so, but because he was forced by the opponent to place a shot near the net (short shot). As a result, the tennis player must have an offensive attitude, without which the game at the net is doomed to failure. The offensive stance is characterized by four main components: increased attention, a position that allows him to start quickly in any direction, intercepting the ball as close to the net as possible, and taking care to return the feet under the center of gravity as quickly as possible after the execution of the shot, to an appropriate placement on the field in the eventuality of the point being continued.

The smash is very similar to the service stroke, but it also has some characteristic elements. Smach is a shot that is executed on a ball sent by the opponent, from a long distance, with different effects, heights and trajectories, never in the same conditions and in the same place. This shot always requires changing the position depending on how the opponent sends the balls. The efficiency of the dunk lies in the hitting force and the placement of the ball, the printed effect being less important. The smash is usually executed from the court, generally from the service line, allowing the ball to be sent on a shorter trajectory, with more force and in directions more varied, which gives it extra effectiveness.

Strength training for tennis players is extremely important. Any advanced tennis player must be strong, fast, have good coordination of movements and have high endurance. (Mihăilescu, L., Mihăilescu, N., 2002) Specific exercises for the development of strength in the game of tennis contribute to perfecting movement on the court, by reducing the contact time of the foot with the playing surface, to faster and more efficient movement on the court. Movement speed is important for advancing to the net, attacking the ball and finishing the game. Strengthening the lumbar muscles is also important, for increasing the range of motion and developing the force applied to serves and shots executed above the head. The abdomen is required in all movements specific to the game of tennis. Also, the strength of the upper limbs plays a very important role for advanced players. The muscles of the forearm are used to absorb the impact following contact with the ball. All the rotational movements made during the match put the body through an extremely rigorous workout. Shoulder exercises improve overhead shots and will protect the athlete from injuries. (Bruce, Machar, Miguel, 2003)

"Strengthening the lumbar muscles is also important, for increasing the amplitude in movement and developing the force applied to serves and shots executed above the head. The abdomen is required in all movements specific to the game of tennis. In addition, the strength of the upper limbs plays a crucial role in advanced players. The muscles of the forearm absorb the impact the following contact with the ball. All the rotational movements made during the match put the body through an extremely rigorous training. Shoulder exercises improve overhead shots and protect the athlete from injuries." (Bruce E., Machar R., Miguel C. 2003)

Repetitive movements such as serve, forehand and backhand can increase the risk of injury if the athlete is not trained correctly. Specific strength training exercises will help prevent injuries. Shoulder and elbow injuries are the most common injuries in high-performance players. Elbow (and forearm) exercises include wrist flexion and extension using light dumbbells or a wrist roller.

In addition, due to the lateral nature of the game with rapid changes of direction, ankle sprains are common. Training ankle mobility during warm-ups with exercises such as ankle mobilization and strengthening with lateral walks also helps prevent ankle sprains.

Among the benefits of strength training we mention:

- improving the power of hitting the ball;
- improving speed and changing direction;
- prevention of injuries.

For attack shots, the emphasis is on striking the ball. Performing movements in the strength room that use the same movements as hitting/serving helps improve strength and coordination on the court. Because tennis is a dynamic sport, changes in direction will be fast, and players need the strength to do it quickly while staying injury-free.

The game of tennis is based on a set of technical procedures and tactical game actions that are achieved by hitting the ball with the tennis racket, with easily noticeable repeatability. At this stage, the following parts can be easily separated, which define the content area of each lesson:

- respecting the theoretical-methodological aspects of the lesson subject;
- technical-tactical details specific to the themes;
- specific means from the practice school;
- methodical rules – necessary for the effective realization of the content of the training assignments;
- singles or doubles games.

Practicing the game requires perfecting specific technique and tactics, requiring the tennis player to make considerable physical and mental efforts. For advanced players attacking the ball and completing the point is an important moment for strengthening the technique and tactics of the game. During the practice of lesson assignments for attacking shots, exercises and assignments specific to the offensive game are carried out, which are necessary for the player's progress both in training and in competitions. The entire joint system, as well as the position of the body segments, must be under permanent control, in the sense of correct development in ball actions. To be hit correctly, the ball must be as far in front of the body as possible, and at the moment of racket-ball impact, the fist joint must be controlled or blocked. During the practice of the ball attack procedure, the gaze must play a decisive role in the whole mechanism, of synchronizing the body segments, related to the moment of racket-ball impact.

Ambidexterity, as well as the use of a rich arsenal of movements, unusual concerning the handling of the racket and ways of hitting the ball, will contribute to the enrichment of specific motor baggage.

Motor characteristics:

- due to the plasticity of the cerebral cortex and the mobility of higher nervous processes: excitation and inhibition; it is possible to develop/educate motor skills:
  - a speed at 12 years – girls, at 13 years for boys.
- due to the development of the locomotor apparatus, skill also develops - puberty being the age of skill;
- at the age of 12-13, the sense of orientation in space approaches that of an adult;
- at 12-13 years (girls) and 13-14 years (boys), the level of mobility decreases;
- by improving the quality of the muscles, the strength in the speed regime also increases (detention, strength) - the capacity for static effort also increases - moderately in boys;
- the resistance capacity is low and measures must be taken to improve it; it will act on the resistance in the force regime and the resistance in the speed regime;
  - at this age, boys prefer strength exercises, and girls prefer expressive exercises performed to music;
  - from the point of view of motor skills: running, most often used, its volume decreasing with age; throwing, more accessible to boys, especially throwing, girls using pushing; the jump has a strong beat, but little flight;
  - this stage is favorable for learning most of the motor skills specific to sports branches and events, and for optimizing motor quality indices.

The role of biomechanics in attacking shots for training advanced players is of particular importance. To play tennis with maximum effectiveness, tennis players must execute these shots correctly in all situations that the game requires. Training based on a well-planned game helps players better understand the tactical challenges of tennis and encourages them to develop their techniques in the tactical context of the game. (Bruce, Machar, Miguel, 2003)

In performance tennis the ability to control the speed of the racket is a very important factor and for this we will list some key elements that contribute to increasing the speed and the ball:

- Use of elastic energy;
- Coordinated movement;
- Link between linear and angular motion;
- The need for strength and muscular endurance;
- Impact weight.

In order to model technical training in strengthening attack shots in the game of tennis at the age of 12-14, we present some examples of exercises that can be used in training:

1. Speeding up the game

The execution of the exercise: The tennis players stay always inside the court.

The objective of the exercise: Accelerates the game by hitting the ball at its maximum height.

2. Attacking the net(Pascu, 2010)

Execution of the exercise: with the basket of balls, player B advances on a short ball sent by the coach and aimed at the targets; Player A tries to pass it and the point is played (then the roles are reversed). The goal of the exercise: Improving the net attack and passing shot.

3. Attack game

How to play: With the basket in half court, player B advances with each shot toward the net and player A defends and holds.

The objective of the exercise: Improving the connection between the bottom of the field and the net. (Ene-Voiculescu, Gidu, 2017)

Physical effort in the game of tennis is of particular importance, determined by numerous conditions, including technical-tactical characteristics, regulatory provisions, competition materials, the type and level of adversity, and the climatic conditions in which the official matches occur concretely, the effort made during the game consists of repeated short runs, lunges, bends, turns and jumps, to which is added the work of the arms, especially of the racket.(Balyi, Hamilton, 2003). The technical procedure is how the technical element is executed, in our case the attacking shots. It represents a complex and common system of motor acts structured as judiciously as possible, applied in a sequence within the game.(Dragnea, Mate-Teodorescu , 2002)

The technique is a means of demonstrating the tennis player's ability to perform the phases of the game, which must also be followed by the motor and mental qualities of the player in accordance with the game criteria.

The technique is influenced by the player's personality, playing style, and materials used (racquets, balls). (Ene-Voiculescu, 2020) The model of a tennis champion aims for overall efficiency in all situations in the game. Offensive play and advancing to the net to attack the ball can represent an aggressive attitude of play which can be beneficial in most point games.(Teodorescu, 2009)

Quick decision making is crucial and relies on reading the ball quickly and efficiently. In addition to these weapons, the most effective feature is the strong concentration that must be maintained constantly throughout the game. The high efficiency of the game is the opportunity to complete the point through different attacking shots.(Rizescu, 2012) The three most important fitness characteristics of future tennis champion are:

- Acceleration (quick and short sprint, from any starting position);
- Agility (quick change of direction both when sprinting and jumping);
- Athletics (running school).

### Conclusions

The bibliographic study will allow the elaboration of the structure and content of the training process, in shaping the technique of attack shots in the game of tennis at the age of 12-14 years.

Modern tennis has lately been filled with superior players, and they have determined the evolution of attack shots, thus making the game of tennis much more dynamic.

It is important in the game of tennis, which of the players takes the initiative to attack, an aspect that will tilt the balance of winning the point on the side of the one with an attacking game based on the completion of the point, the level of expression in the execution being decisive, the biomechanics and the hitting speed being main factors.

We can conclude that the offensive tennis game has materialized in results at the highest level, the performance requiring an exceptional genetic material, systematic, periodized training with a well-organized basic structure in which the athlete's evolution is conditioned by the level of development of specific motor capacities , of acquiring the technique of attacking shots at a higher level of preparation, adopting a modern concept of the game.

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