

**THIS CONTENT IS A PART OF A FULL BOOK - TENNIS FOR
STUDENTS OF MEDICAL UNIVERSITY - SOFIA**

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Serve

This is a mandatory, complex-coordinated shot from the game's technique. Every rally in the game begins with the serve and according to the rules it can be executed twice if the first one is missed. It is the most powerful stroke in tennis, where speed exceeds 200-240 km/h and more than 20 aces (an untouched ball by the opponent) can be achieved, as its role in winning the point makes the serve one of the most significant aspects of the technique of each player. At the same time, however, there is also the risk of losing points due to a double fault or a winner from the opponent.

The efficiency of the serve is determined by the following indicators:

- 1) Maximum and average speed of the first and second serve.
- 2) Percentage of the successful performances.
- 3) Number of points won directly from serving - aces.
- 4) Number of points won on both serves.
- 5) Double faults, etc.

The serve has a direct and indirect influence on the outcome of the matches. It is the only shot that:

- a) It does not depend on the opponent's previous actions;
- (b) It is carried out from a identical, static starting position;
- c) It is executed according to the rules in terms of time, way and alternation in designated spots on the court;
- (d) The hitting motions are individual, reinforced and recurrent coordinated technical elements of varying power;
- e) Can be trained independently with and without coach or partner;
- d) Can be improved under unfavorable weather conditions, and so on.



Fig. 31. Serve

Preparatory phase: The way of executing the serve depends on a number of individual and complex features - physical and technical qualities of the tennis players, set goals, external factors such as the conditions of the game activity, and others.

Grip for the serve (holding of the racquet) : Depending on the level of the players, the grip varies - eastern for beginners and continental for the advanced.

Starting position: Serve is performed from the middle of the baseline singles games and from the middle between the midpoint in doubles. The left foot is placed 5-8cm from the end line at a 45-60 degrees angle, as in some cases it is parallel. Depending on the method of execution, the right (rear) foot may be: (a) almost in line and parallel to the heel of the front one; (b) approximately one step back; c) two to three steps back parallel to the front foot. The weight of the body is on the back (right) leg.

During preparation, the body is slightly tilted forward and folded into the hip joint. It is turned sideways - with the left turned to the net. The straight line between the shoulders indicates the direction of movement of the ball. The hands holding the racquet and the ball are semi-straight in front of the player's body at the same level or below the waist with a ball touching the racquet's strings. They are stretched out in the elbow and wrist joints and are directed towards the corresponding serving box of the opponent. The head of the racquet is usually often perpendicular to the ground. This starting position is almost the same for performing the serve from the left and right half of the opponent's field.

Execution phase: It starts by lifting both hands at the same time - the left moves forward and upward with tossing of the ball, while the right one takes the racquet backwards according to the individual technique of each player. It can be:

- a) Tossing the ball simultaneously with the arm and racquet going up;
- b) Matching the toss of the ball with a wide circular motion of the hand and racquet - lower and upper loop to the starting position;
- c) Tossing the ball with simultaneously moving the racquet to the side, up and back.

Ball Toss: The motion and accuracy of this technique's element is the basis for a good serve. Its components are:

- a) correct holding of the ball - the hand is turned upside down as the ball is held) at the base of the three fingers: the index finger, the middle finger, and the thumb on top;
- b) the hand is almost horizontal to the ground or slightly deviated downward. It is stretched out in the elbow and tight in the wrist. This provides the same power and direction of upward movement of the ball – a result of the degree of automation of the motor habit as well.

The upward hand movement technique is individual. It is taken back:

- (a) perpendicularly upward, "elevated", and is released at the highest point as late as possible – at 20-30cm above the height of impact; the arm is in a vertical position, almost straight in the forearm;
- (b) backward or forward, depending on the technique and purpose of the serve.

The elevated arm is kept in this position and thus, prevents the body from being tilted before the point of impact.

Hand and racquet takeback - the toss is combined with the impact movement:

- 1) In case of a low toss, the hand with the racquet is concurrently taken upwards, as the elbow stops under the right shoulder for a stroke, almost touching the body.

2) With a high toss:

- Simultaneously with the ball toss, the shoulder is turned in the same direction, together with the hand and racquet, which are taken sideways, backwards and upwards and stop in a topmost position. The hand is folded or half-expanded in the elbow. The striking motion is of greater concentration, strength and purpose, but starts from zero, i.e. the inertial forces of the swing are not used.

- The ball is tossed in sync with the arm and racquet moving down and sideways: a) Below the level of the waist and continues upwards; or

b) In the subsequent loop-wise upward motion – a bottom loop, the face of the racquet opens and the angle between the under arm and the body is increased. The movement ceases in a topmost

rear position or when the hand and racquet are in the rear at a shoulder-level - most often at a 90-degree angle and less often behind the back.

The preparation for the serve is dependent on:

- a) The individual coordination and technical actions and possibilities for tossing and hitting the ball;
- b) The anthropometric data - height, length of the upper limbs and the ability to use them at impact;
- c) the speed-power capabilities of tennis players.

Execution phase: Performing the striking action starts by turning the body in the direction of impact and with a simultaneous movement - folding and unfolding (reducing and increasing the angle between the under arm and the forearm). At this point, the right shoulder and the arm with the racquet move forward. The arm is lifted up to the level of the head - fig. 31b

The position of the body, hand and racquet cause the powerful muscle groups along the front surface of the shoulder and the body to stretch.

In the subsequent motions of the stroke, the right hand folds into the elbow and together with the shoulder, turns outward (Figure 31c). The racquet moves curved with the edge forward behind the back, describing the so-called "loop".

Ball stroke: It is hit carried out at the highest point, 60-80cm in front of the body and slightly to the right. At this moment, the body is fully unfolded - in a straight line are the hip, shoulder, elbow and wrist joints (Figure 31d), i.e. the support leg, the body and the right hand are almost in one line, slightly bent forward.

The performance of the striking action is also dependent on the accepted/perceived technique of the legs. It can be with:

- a) simultaneous folding and unfolding of both legs in the knee joints;
- b) retraction of the right leg to the left, followed by folding and unfolding both legs in the knee joint;
- c) retrieving the far right leg to the left, which increases the impending impact movement. This is again accompanied by folding and unfolding in the knee and hip joints, while the forward movement of the upper body leads to further acceleration.

Drawing the right shoulder up for the impact often leads to excessive inclination and bringing the left shoulder down - this is avoided by stopping the movement of the left that is close to the body (Figure 31e).

Depending on the stroke's technique and the rotating motion attributed to the ball, the types of serves are:

- a) **Flat serve.** It is used most often as a first serve. It is performed with an eastern grip. In the preparatory phase, the ball is tossed over the player's head, i.e. just slightly forward and to the right of the support foot. The shot is hit above the center of gravity of the ball from the top, forward and downward, perpendicular to the face of the racquet's head and the ball's flight. For this purpose, when the arm unfolds, the racquet pronates. The ball's flight is non-rotating, with a straightforward trajectory forward and does not bounce high when landing. The accuracy of the shot depends on its height - at a higher height it is more accurate. The flight of the ball in relation to that of) other strokes is at the fastest pace.
- b) **Slice serve.** The racquet is held with a continental grip. The ball is tossed above and in front of the right shoulder, a little lower and more to the right in front of the body. The hand and the racquet are placed as far as possible behind the right shoulder, with a raised elbow. The face of the racquet is at an angle to the ball with the edge in led by the edge. When unfolding the arm in the elbow for impact, the racquet's movement is forward - horizontally from left to right, and is hit laterally in the right half of the ball and slightly above its center of gravity, i.e. it is "brushed" from left to right. It is given a swirling motion on the vertical. The flight trajectory of the ball is in an arc form. The degree of rotation is determined by the horizontal velocity - at greater speed the arc is more curved and the stroke is shorter and vice versa. When the ball hits the court, it slides low and bounces to the right, pushing the opponent off the court. This type is generally used more for the second serve.
- c) **Topspin serve.** It is the most frequently used serve in the game, especially as a second serve. Its execution leads to a quick and high rebound, which hinders the opponent, and allows for the players to reach their aimed. The racquet is held with a continental grip. To perform this type of serve, the legs (feet) lie parallel to the baseline. Before the hit, the hand unfolds in the elbow joint. The ball is tossed over the left shoulder and slightly above the head. This movement is accompanied by rotation of both the shoulder and elbow joints. The stroke is executed with a rotational movement of the arm and racquet starting from low to high- on top, on the side of the ball's center of gravity (marked as 1-2pm on the clock); i.e. before the shot is under, and after the hit - over the ball. At this point, the hand is pronated in the elbow joint and to a great extent folded in the wrist. In terms of length, the racquet is at a significant angle or perpendicular to the terrain and its face is directed to the right. The imparted rotating motion leads to:

- an arc-shaped trajectory with a circular movement of the ball near the horizontal axis; during its flight, it first rises, passes high above the net, then quickly descends downward, bouncing high without deviating from the direction of impact;

- an arc trajectory from left to right - when the ball rotates around the axis at an angle of around 45° ; its trajectory is curved from left to right and moves to the left when bouncing.

Final phase: After the ball is struck, the body moves forward by inertia, slightly folded in the hip and knee joints. The player makes one or two steps ahead with his/her right foot in the inside the court. The racquet continues its movement forward and downward to the left of the body as well as backwards and finishes down low, in front of the left foot's knee. The left hand is folded and attached to the body, compensating for the body's inclination to the left (Figure 31f).

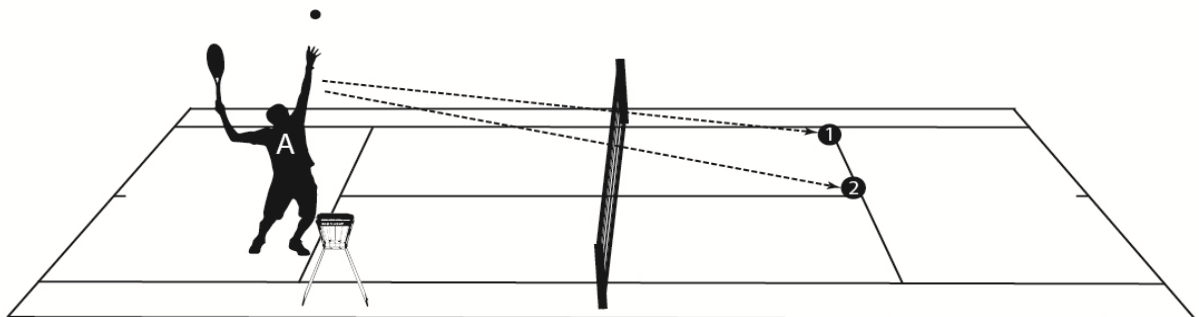
With slice and topspin serves, the ball speed is lower, but the applied rotating motion makes it difficult for the opponent to implement an active or winning counterplay.

The success of the serve is determined by the degree of: automation of the motor habit, consistency in technique and strength of impact – equivalence in height, direction of throwing the ball, and flight; as well as a aiming for high speed and success depending on the opponent's weaknesses.

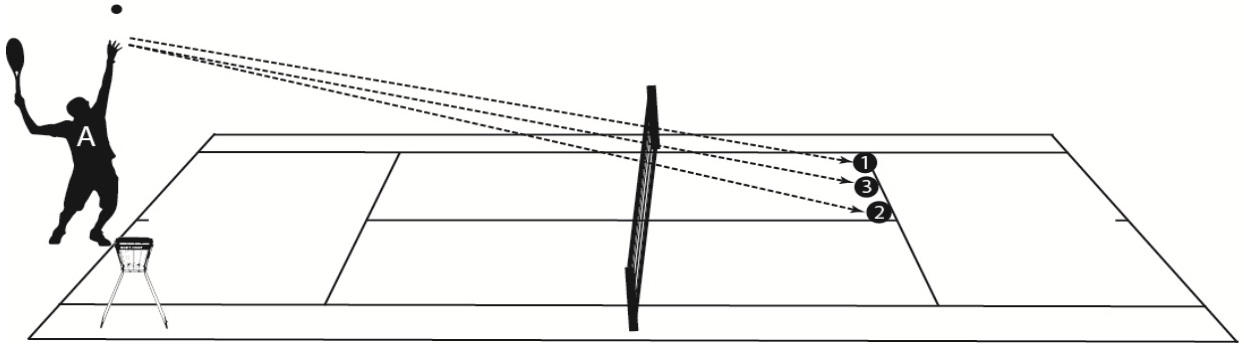
Errors in the training and execution of a serve:

- The impact is performed facing the net.
- The striking movement is performed only with the playing hand, without the help of the other.
- The ball is tossed incorrectly too far backwards or forward and is hit low.

Exercises for studying and improving the serve:



Exercise # 1: Player A performs a first serve from the service line both diagonally and straight. The goal of player A is to strike the ball as high as possible and direct the serve, keeping the elbow and the throwing hand at a maximum height.



Exercise # 2: Player A performs a serve from the baseline into a three-parts-divided service fields . The goal of player A is to aim the ball as precisely as possible can in the three directions: diagonal, straight and center. The exercise can be used for both first and second serve.