INTRODUCTION
Management of sports training is a highly complex process requiring continuous monitoring of the achieved level of tennis players motor skills and habits development and constant searching for methods and tools for its optimization (Dimov & Zaharieva, 2005).

The results of the Steinhofel & Beachus (1999); Weinberg (1988) suggest that early childhood best enhances the implementation and realization of the spatial characteristics of movements, temporal strength and optimal interaction between different factors providing sustainable utilization and development of the movement. All factors thus depend on the individual psychomotor performance of the children. It requires purposeful work for adequate adaptation of the training for every single child during the training process.

According to Dimov, 2000, the aim of the tennis sports training is to prepare highly qualified players. He describes the specific tasks as follows:
- Building of high moral and volitional qualities;  
- Comprehensive physical development enhancing the health. It includes a wide range of physical qualities necessary to improve the specialized motor skills; 
- Learning of the technique, tactics and strategy in order to meet the latest trends in contemporary tennis competitions; 
- Educating in a wide range of psychological qualities necessary for successful training and participation in competitions;

- Acquiring thorough knowledge and skills needed for scientific construction, management and implementation of sports training including cooperation of the coaches, researchers and doctors.

In the process of training these tasks acquire clarity and specificity and should always be discussed and integrated.

Sports training for 12 year old players is based on the indicators for consistency and accuracy. Persistence is associated with a stable learning technique to perform strokes. Accuracy is the control of the forehand and backhand hits completed in the opponent’s field (Afework, 2012).

The purpose of this study is to analyze the ball speed during the implementation of major strikes in tennis (forehand and backhand) and to obtain information on the level of utilization of both impact and efficiency of 12 years old players after one year education and training work.

METHODS
Participants in the study were 15 boys and 15 girls, aged 12. At the beginning and in the end of macro cycle (1 year) each competitor was measured for speed and the accuracy of the hits for forehand and backhand was determined. Every athlete played 25 balls for each of the two strokes. Speed radar was used to measure speed of hits.
The speed of the accurate shots was measured in kilometers per hour (km/h).

**RESULTS**

Velocity is a quantitative measure, depending on the phases and proper implementation of the shot, proper body staging, the swing of the racquet and the right hit of the ball. Top players achieve average ball speeds of about 130 km/h. The highest speed measured so far is 199 km/h reached by Andy Murray in 2011 of the US Open (Willis, 2011). Mean rates of the individuals achieved in our study varied between 85 to 110 km/h and were found relatively good for their age.

Minimum values in boys (76 and 82 km/h) and the girls (75 and 78 km/h) can be ignored and considered random because they are single and could be associated with false hits. Lower speeds direct the coach to the wrong completion of the technique.

Research and testing of the ball speed flying over the net is an important task in the training process. Higher speed shortens the time and the opportunities of the opponent to make return and contribute to the opponents’ mistakes.

Table 1 shows the results obtained during the testing.

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<tr>
<th>Number of testing persons</th>
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</table>
The table shows mean values of the speed of all shots for every tested person.

The table shows that the average growth rate between the first and the second study are not very big - from 7 to 12 km / h. To obtain more information on this test, the results will be illustrated by presenting special graphics.

Graphics show clearly the growth of each tested person between the two testing. At the same time we can compare the improvement of the execution of the two beats (Chart 1 to 4).

The total growth of the boys performing forehand was 12 km / h and it gives information about the overall state of the group (Chart 1).

Players № 1, 3, 6, 10, 13 and 15 are considerably higher than the total growth, while others are with average or with small personal growth.

The return stroke has total increase of 7 km/h, and is significantly different from the other result. The subjects who achieved good results in forehand, show moderate and low growth in backhand (Chart 2). Here we emphasize the results of players № 2, 4, 8 and 12.

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**Average ball speed of boys performing forehand at the start and the end of the experiment.**

![Chart 1](chart1)

**Average ball speed of boys performing backhand at the start and the end of the experiment.**

![Chart 2](chart2)
Tennis player № 3, despite lower values recorded at the beginning of the study shows significant growth in both hits in the end.

In girls performing forehand, the total average increase is 10 km/h. They have a larger group with above-average growth. These are players №1, 2, 3, 7,8,9,10,11 and 12 who show ≥ 10 km/h growth (Chart 3).

In the group of girls performing backhand (with average growth of group 7 km / h), one could distinguish tennis players № 2, 5, 6,7,13 and 14. It is also interesting to look at the results of players № 2 and 7. They achieved consistent growth in both analyzed strokes (Chart 4).

CONCLUSION
Proper learning of the two major strokes in tennis (the correct technique of execution) gives significant advantage to each player. Well performed strokes with proper technique are often the key factor in winning
the game. Proper performance of each stroke leads to the increase of its speed. Strokes implemented with the right techniques and high speed can cause error even in the best players. Thus working with 12 years old children requires starting with the correct learning of the technique and afterwards working to for the increase its speed.

When these factors are properly applied, researched two strokes in tennis become the most powerful weapon of each player.

REFERENCES


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