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# Effects Of Improvement Of Stroke Accuracy In Young Tennis Players Against The Background Of The Effect Of Short-Term Vestibular Load During The Experiment

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**Abstract.** The article presents the results of a study of the effects of improving the accuracy of strikes in young tennis players against the background of the aftereffect of a short-term vestibular load during the experiment. It was found that in young tennis players of the EG, which trained according to the experimental program, the number and accuracy of strikes for 30 seconds were accompanied by a pronounced increase in their level by the end of the 10-month experiment, while in the CG, which trained according to the traditional program, such positive shifts in the sphere of the studied parameters were not noted.
**Key words:** training cycle, quick-strength, training, work ability, component.

**Introduction.** In modern table tennis, for the successful execution of game actions with aimed accuracy, perfect stability of maintaining balance under the impact of various linear and angular accelerations, repeatedly repeated during intense competitive games, is extremely important, which was studied using the example of a number of other sports. For example, A.S. Nazarenko, N.Sh. Khasnutdinov [2016, p. 157-159], studying this issue in football players, believe that statokinetic stability to maintain balance may be higher at "rest", but even with slight irritation of the vestibular analyzer, it acquires a pronounced tendency to decrease and therefore the authors recommend regularly training the function of maintaining body balance. A.S. Nazarenko, A.S. Chin Kin [2011, p. 726-732] showed that in situational sports, fatigue that occurs during intense training or competitive loads is primarily reflected in the functional activity of the vestibular analyzer, which may be followed by a decrease in the level of aiming accuracy of game actions and a misalignment of movement control mechanisms. L.D. Nazarenko [2015, p. 99-101], based on his own research, believes that the range and accuracy of throws in basketball, for example, are determined not only by the indicators of the working muscles, the level of development of the eye, but also largely depend on the stability of the body to maintain the appropriate posture. And according to A.A. Dzhumok, A.A. Pavlova [2018, pp. 45-48], in game sports it is very important to improve the stability of maintaining body balance both in the open and closed eye mode, which turns out to be very important for "honing" the accuracy of differentiating muscle efforts when performing targeted game techniques.

The aim of this study was to investigate the effects of improving the accuracy of strokes in 7-8 year old table tennis athletes with and without vestibular analyzer stimulation under experimental conditions.

Methodology and organization of the study. Two groups of young athletes aged 7-8 years (12 people each) involved in table tennis at the initial training stage were involved in the study, conducted within the framework of a 10-month pedagogical experiment, one of which participated in this process as a control group, and the other as an experimental one. In the control group (CG), training sessions were conducted according to the traditional program. And in the experimental group (EG), children daily in the morning during morning exercises performed the following exercises: circular head movements in sitting and standing positions to the right and left, head tilts forward and backward, right and left, turns right and left, body rotations left and right in a pose of bending the body forward by 90 °; The same exercises were used during the preparatory part of each training session, and in the final part of the sessions the children performed the maximum number of shots with a rebound from the tennis table to the target for 30 seconds; for this, the tennis table is tightly installed across the wall; a circle is drawn on the wall 45 cm from the surface of the table - a target with a diameter of 45 cm; the tennis player stands in the middle of the edge of the table performs the specified shots; this exercise is repeated 5 times simply without load, 5 times immediately after 10-fold rotation of the head to the left and 5 times the same with rotation of the head to the right (Fig. 1). The ratio of the maximum number of accurate and inaccurate shots in 30 seconds, made at rest and immediately after performing 10-fold rotation

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of the body to the left in a forward bend position of 90 ° is assessed. Testing was conducted before and after the completion of the 10-month pedagogical experiment.

Fig. 1

Results and their discussion. The test results showed that the total number of strikes at rest for 30 seconds in the CG before the experiment was 28.2±2.81 times, and by the end of the experiment it increased to 29.7±2.88 times ($p>0.05$) or its absolute increase reached only 1.8 times, while its relative increase was 12.41% (Table 1). Of these, the number of accurate strikes in this group before the experiment was equal to 9.3±2.04 times, which by the end of the experiment increased insignificantly and was 10.8±2.32 times ($p<0.05$). It is evident that the absolute increase in strike accuracy also was 1.5 times, while the relative increase was 16.13%. At the same time, in the EG, which regularly performed the experimental exercises recommended by us during the experiment, the total number of strokes 30 seconds before the experiment was equal to 26.9±6.72 times, and by the end of the experiment it increased to 34.5±8.32 times ($p<0.01$) or in absolute terms it increased to 7.6 times, and the relative increase in this indicator was 28.25%. The number of accurate strokes in the group during the experiment increased from 8.7±3.65 to 14.9±6.13 times ($p<0.001$), where in absolute terms it increased to 6.2 times or in relative terms the accuracy ofstrokes in the EG increased to 71.26%.

**Table 1**

**Indicators of differentiated assessment of the development of stroke accuracy in young tennis players of the control and experimental groups by the end of the pedagogical experiment**

| Parameters | Group | Beforethe experiment x±δ | Aftertheexperiment x±δ | AI | RI | p |
|---|---|---|---|---|---|---|
| Strikesatrest 30 sec. | | | | | | |
| Numberofstrokes | KG<br>EG | 28,1±2,81<br>26,9±6,72 | 29,7±2,88<br>34,5±8,32 | 1,5<br>7,6 | 5,32<br>28,25 | >0,05<br><0,01 |
| Accuracyofstrikes | KG<br>EG | 9,3±2,04<br>8,7±3,65 | 10,8±2,32<br>14,9±6,13 | 1,5<br>6,2 | 16,13<br>71,26 | <0,05<br><0,001 |
| Strikes after 10 body rotations in 30 sec. | | | | | | |
| Numberofstrokes | KG<br>EG | 14,5±3,33<br>13,8±4,96 | 16,3±3,65<br>19,9±6,98 | 1,8<br>6,1 | 12,41<br>44,20 | >0,05<br><0,01 |
| Accuracyofstrikes | KG<br>EG | 4,1±0,65<br>3,9±1,51 | 4,6±0,71<br>6,5±2,48 | 0,5<br>2,6 | 12,20<br>66,67 | <0,05<br><0,001 |
| | | | | | | |

*Note:*AI – absolute increase;
RI – relative increase, %.

The total number of strikes in 30 sec under the influence of 10-short rotation of the body to the left in the forward bending pose by 90° in the CG before the experiment was 14.5±3.33 times, and after it increased only to 16.3±3.65 times ($p>0.05$), or the difference in the increase of this value in absolute terms was 1.8 times, and the relative increase in the total number of strikes in this group was 12.41%. The number of accurate strikes before the experiment was 4.1±0.65 times, which by the end of the experiment increased to 4.6±0.71 times ($p<0.05$). It is evident that the number of accurate strikes in the CG in absolute terms increased only to 0.5 times, and in relative terms it was 12.20%. In the young tennis players of the experimental group, the total number of shots in 30 seconds, performed against the background of the action of 10-fold rotation of the body

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in a forward bend position of 90°, before the experiment was 13.8±4.96 times, and after it increased insignificantly and was equal to 19.9±6.98 times ($p<0.01$), i.e. this value in the absolute sense increased to 6.1 times, and its relative level increased by 44.20%. The accuracy of shots in 30 seconds in this group during the experiment increased from 3.9±1.51 to 6.5±2.48 times ($p<0.001$), or this value in absolute terms increased by 2.6 times by the end of the experiment, and in the relative sense this increase was 66.67%. Conclusion. From the comparative analysis of the presented data it is evident that, firstly, before the beginning of the experiment the total number of strikes at the given target in 30 seconds at “rest” in both groups of tennis players was relatively low, of which the volume of accurate strikes did not even make up 50%. This situation allows us to assume that in the process of traditional training sessions the emphasis is not removed on the coupled development of striking performance taking into account the accuracy of strikes by various methods. Secondly, in the CG even during the period of the 10-month pedagogical experiment both the number of strikes in 30 seconds and their accuracy did not tend to increase significantly by the end of the experiment. The total number of strikes in 30 seconds and their accuracy decreased by almost two times under the conditions of their execution against the background of the aftereffect of a 10-fold rotation of the body in a pose of a forward bend of the body by 90°, which is associated, in our opinion, not only with insufficient development of striking actions for accuracy, but also such a consequence is mainly due to the weak development of the vestibular analyzer. This is confirmed by the progressive data obtained in the EG, which during the experimental period regularly performed various stato- and vestibulokinetic exercises in the morning and during training sessions, practicing various strikes during training against the background of the aftereffect of vestibular loads.

**References**

1. НазаренкоА.С., ХаснутдиновН.Ш. Регуляция равновесия тела на фоне вестибулярного раздражения у футболистов/Ж.: Ученые записки университета им. П.Ф.Лесгафта, 2016,№1 (131),- с.157-160.
2. НазаренкоЛ.Д. Концепция классификации двигательных координаций / Ж.:ТиПФК, 2015, №3, -с. 99-101.
3. Джумок А.А., Павлова А.А. Особенности статокинетической устойчивости спортсменов игровых видов спорта /Ж.: Ученые записки университета им. П.Ф.Лесгафта, 2018, №6 (160), -с.45-48.
4. NazarenkoA.S.,Chin KinA.S. Cardiovosckular, motor, and sensory responses to vestibular stimulation in athlets of different spectalizations /Human Physiology/ Pleiades Publishing/ Ins/ - 2011,37.-№6,-p. 726-732.