



Switching and concentration of attention of cybersportmen of mass discharge

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Abstract

Objective of the study was to identify the features of switching and concentration of attention among those involved in various disciplines of computer sports of mass categories.

Methods and structure of the study. 175 young men from 18 to 25 years old, involved in computer sports and having sports categories from III to I, took part in the scientific work. Athletes were asked to perform five attempts each in the "attention switching" (modified Schulte tables) and "attention concentration" (modified Landolt test) exercises on the online training portal cyberten.ru developed by the authors. The mean value was calculated over five attempts.

Results and conclusions. Significant differences ($p < 0.05$) between the indicators of attention switching among athletes of the first and third sports category in the disciplines "fighting" and "sports simulator" were revealed, given the presence of a close to linear dependence on the sports category, this exercise can be included in the training. Significant differences ($p < 0.05$) were found in the indicators of concentration of attention between those involved in "fighting", "competitive puzzles", "three-dimensional tactical combat" and "combat arena", "sports simulator", "technical simulator", "real-life strategy". time", accompanied by a linear dependence of the increase in results from the sports category. Exercises aimed at developing concentration of attention can be recommended for training those involved in "fighting", "competitive puzzles" and "three-dimensional tactical combat".

Keywords: concentration of attention, switching of attention, computer sports, athletes of mass categories.

Introduction. The interest of modern researchers in the psychophysiology of cognitive processes in sports, such as attention, memory, thinking, is undeniable. Today, in foreign [1] and domestic [2] sources, one can increasingly find the point of view that cognitive abilities play an important role in generating sports results. Computer sports, being an intellectual sport, places high demands on such characteristics of attention as selectivity, switching, distribution, volume, stability and concentration. Each of the seven disciplines of computer sports will have its own requirements for the level of development of the above characteristics, due to different mechanics, duration and intensity of the game match. The average duration of one match in computer sports, depending on the discipline, can vary from 2 to 60 minutes. All of the above will influence

the content of training programs in various disciplines of computer sports at the stages of sports training. Objective of the study was to identify the features of switching and concentration of attention among those involved in various disciplines of computer sports of mass categories.

Methods and structure of the study. 175 young men from 18 to 25 years old, involved in computer sports and with sports ranks III to I, took part in the scientific work. The choice of contingent is due to the fact that currently the first sports category in computer sports is the highest. The titles "Master of Sports of Russia" and the sports category "Candidate Master of Sports" in computer sports were not awarded.

Since the computer sports discipline "tactical three-dimensional combat" was included in the All-



Russian Register of Sports only on May 25, 2022, in order to assign sports categories in this discipline, changes will be made to the Unified All-Russian Sports Classification (URSC) in the near future [3]. Therefore, the study involved those involved in “tactical three-dimensional combat”, who currently do not have a sports category, but fulfill the standards for its assignment; the requirements of the URSC for the “combat arena” discipline were taken as a basis. The characteristics of the sample are presented in Table 1.

The subjects were asked to complete five attempts each in the “switching of attention” (modified Schulte tables) and “concentration of attention” (modified Landolt test) exercises on the online training portal cyberben.ru developed by the authors. The average value over five trials was calculated.

Research results and discussion. Figure 1 shows the results in the “Switching of attention” exercise; the best results were demonstrated by those involved in the “battle arena” of the 1st sports category 10.8 ± 1.1 s. This may be due to the in-game features of the game “Dota 2”, in which players have to keep a large number of dynamic objects in their field of attention, this also explains the fairly high performance of those engaged in the “fighting game” of 11.2 ± 0.4 s, and the “sports simulator” 11.1 ± 0.9 s and “3D tactical combat” 11.7 ± 0.6 s. In the disciplines “fighting game”, “sports simulator” and “battle arena”, a linear improvement in performance can be traced with the growth of the sports category of e-sportsmen.

There were no significant differences in the indicators of attention switching when comparing athletes of the same category of different disciplines of computer sports ($p > 0.05$), however, significant differences were identified within the disciplines “sports simulator” and “fighting game”, between athletes of the first and third sports categories ($p < 0.05$). It is advisable to consider the results in the “switching attention” exercise together with the “concentration of attention” exercise (Fig. 2), since all characteristics of attention represent a functional unity.

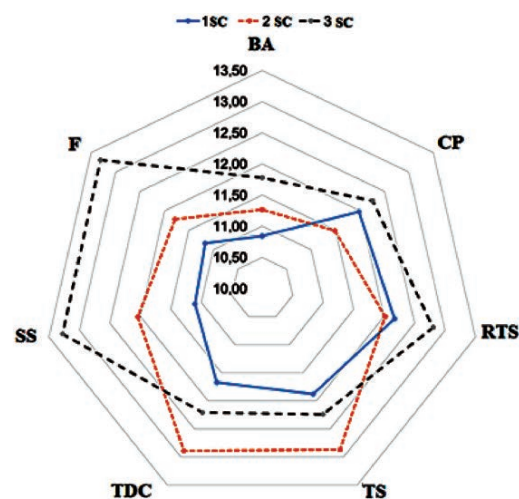
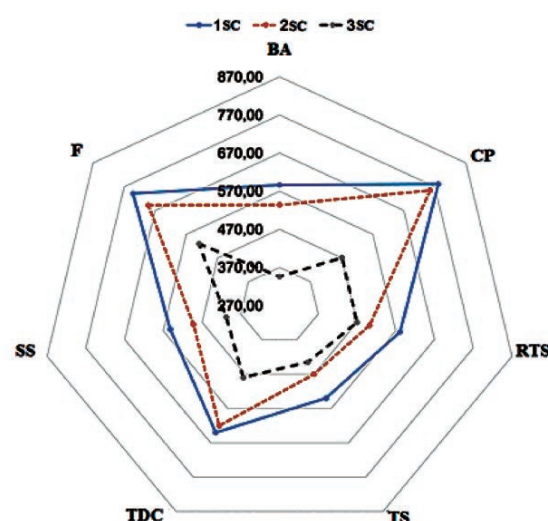


Figure 1. Results in the “switching attention” exercise for those involved in various disciplines of computer sports, in accordance with sports category, s



In all disciplines of computer sports, there is an increase in performance in the “concentration of attention” exercise with an increase in sports category, and the best results in the exercise under study were demonstrated by those involved in “fighting games” 741.1 ± 23.7 points, “competitive puzzles” 781.3 ± 27.9 points, “tactical three-dimensional combat” 640.2 ± 7.2 points. In the same disciplines, significant differences ($p < 0.05$) were revealed between the indicators of concentration of attention of players of the

Table 1. Number of computer sports enthusiasts who took part in the study

Discipline	1 sports category	2 sports category	3 sports category
Battle Arena (BA)	10	14	12
Competitive Puzzles (CP)	5	6	6
Real-time strategy (RTS)	4	6	7
Technical simulator (TS)	5	6	6
Sports simulator (SS)	8	8	8
Tactical 3D Combat (TDC)	14	12	12
Fighting (F)	10	8	8
Total	56	60	59



same categories in comparison with other disciplines, for each sports category.

The analysis took into account two indicators: significantly higher results compared to other disciplines and a linear improvement in results with increasing sports category. Based on data analysis, the “switching attention” exercise can be recommended for those involved in “fighting games” and sports simulation”, and “attention concentration” for “fighting games”, “competitive puzzles” and “3D tactical combat”.

Conclusions. Significant differences ($p < 0.05$) were revealed between the indicators of attention switching among athletes of sports category I and III in the disciplines “Fighting” and “Sports Simulator”, taking into account the close to linear dependence on sports category, this exercise can be recommended as a training exercise. According to the results of the study, significant differences ($p < 0.05$) were found in the indicators of concentration of attention between those involved in “fighting game”, “competitive puzzles” and “three-dimensional tactical combat” and “combat arena”, “sports simulator”, “technical simulator”, “strategy in real time” about a linear dependence of the increase in results on the sports category. Exercises aimed at developing concentration can be recommended as training for those involved in “fight-

ing games”, “competitive puzzles” and “3D tactical combat”.

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