

Psychological method to improve football players' professional training

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The Lomonosov Moscow State University psychologists found out how a level of footballers' play can be improved, when not only physical training, but also individual perspective and behavioral peculiarities of the players are considered. Credit: Alyona Grushko.

Lomonosov Moscow State University psychologists describe an approach to improve footballers' play during physical training, while also considering their individual perspectives and behavioral peculiarities. The outcomes of the study were presented at the [International Congress of Sciences and Football—Image, Multimedia & New Technologies](#) and published in *Proceedings of the International Congress of Sciences and Football: Image, Multimedia & New Technologies*.

Lomonosov Moscow State University scientists described the results of their observations on changes in [players'](#) ability to concentrate on the game throughout a season. The research focused on such parameters as attention, short-term memory, and reaction time. Based on the collected data, psychologists, doctors and trainers can structure the training process with maximum efficiency.

In March 2016, researchers of many countries gathered in the Valenciennes, France to share the experience of scientific observations in a [football](#) sphere. Participation in such events is particularly important for Russia—soon, the Russian national team will have a chance to compete for the title of European football champions, and in 2018 to [play](#) on their home field at the European championship.

Sports psychologist Alyona Grushko, postgraduate student of the psychology faculty, MSU, described details of the study, the results of which were presented at the congress. Two football teams were invited to participate in the experiments, one consisting of professional players, the other of semiprofessionals. Focusing particularly on the peculiarities of attention, memory and reaction, scientists also collected data on the players' physical condition.



The researches focused on such parameters as attention, short-term memory, and reaction time. Credit: Alyona Grushko

Psychologists, together with physiologists from Moskomsport, tracked the changes in footballers' conditions while testing their aerobic and anaerobic capacities. Researchers hypothesized that players' physical form and their readiness to distribute attention, reaction and coordination might correlate.

For testing players' cognitive skills, the researchers used multiple specially designed machines. One is a display with light sensors. Flashing lights re-appear around its surface, and the player's task is to react immediately by pushing a button, and the reaction is measured. To test the attention distribution abilities, scientists suggested the 'red-and-black charts' challenge. The idea is the following: on a sheet of paper, red numbers from 1 to 15 and black numbers from 1 to 24 are spread randomly. Psychologists measured the time a player spent finding all black numbers in ascending order and then all red numbers in descending order.

Then scientists collected data on the players with weak visual memory or imperfect attention who still attain high results thanks to anaerobic abilities—conducting explosive, high-speed actions. A reverse correlation presented—by training attention, a player may compensate for low speed in a game. The researchers conclude that to improve results, visual attention should be developed first in high-speed players—forwards and wingers.



Psychologists, together with physiologists from Moskomspor, tracked the changes in footballers' conditions while testing their aerobic and anaerobic capacities. Credit: Alyona Grushko

Grushko commented on the behavioral peculiarities of players from different roles. She mentioned a popular opinion that defenders and goalkeepers are introverts, while strikers and wingers are extroverts. Psychologists tend to conclude that in general, football players are mostly upbeat, easygoing and optimistic. "In my opinion, it is much more interesting, to what extent one player or another masters the important skills," Grushko says. "For instance, if an 'explosive', reactive forward is trained for fast attention switching and decision making, the

player's accurate actions improve, and that influences the result of the game."

Grushko also provided advice for players on maintaining high visual reaction speed. Players should not spend much time working with gadgets, which causes tunnel vision at the expense of peripheral vision. "I constantly notice that sleepless nights caused by watching the World Cup and Champions League broadcasts lowers the efficiency of [attention](#) and reaction of the players," the psychologist says.

Having already achieved significant results, MSU psychologists are continuing their survey. The scientists are going to conduct tests during various periods of the season to describe basic characteristics of players and the influence of their age and game role.

Provided by Lomonosov Moscow State University

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