

## The Formation of Social Skills in Children with Down Syndrome under the Influence of Regular Football

Alexander S. Makhov<sup>1\*</sup>, Alexey I. Seselkin<sup>2</sup>, Valery P. Kartashev<sup>2</sup>,  
Natalia V. Karpova<sup>2</sup>, Natalya V. Mishanina<sup>3</sup> and Dmitry A. Kazakov<sup>1</sup>

<sup>1</sup>Department of Theory and Methods of Physical Culture and Sports,  
Russian State Social University, 129226, Moscow, Russia.

<sup>2</sup>Department of Adaptive Physical Culture and Recreation,  
Russian State Social University, 129226, Moscow, Russia.

<sup>3</sup>Department of Life Safety and Adaptive Physical Culture of the  
Shuy branch of Ivanovo State University, 155908, Shuya, Russia.

\*Corresponding Author E-mail: svetlanazsyu@mail.ru

<https://dx.doi.org/10.13005/bpj/2089>

(Received: 25 May 2020; accepted: 26 December 2020)

People with down syndrome, is very difficult to socialize due to significant communication difficulties. It is difficult to give any of the organizational actions in your daily life. To solve these problems so people recommend sports activities, which contribute to the development of many necessary for living in society skills – punctuality, neatness, discipline and diligence. Very suitable in this case the sport is football. This is a team sport that can generate team spirit, sense of camaraderie, mutual support, creating the basis for rapid adaptation in the team. So, in football, people with down syndrome, become healthier, active socializers, develop their talents and become more sociable. The analysis of the views of parents of children with down syndrome showed a high significance of sport in their child's life. This section, such children get valuable experience. Here they take an example and try to be polite. Sports activity socialize a child gives you the opportunity to prove himself as an athlete and help them overcome internal barriers. Sports trigger in children with down syndrome the physical and psychological indicators. According to parents, it is football changing the lives of their child in a better way children adapt to life in the team, reveal their mental capacity, making whiter confident and more disciplined.

**Keywords:** Football, Sports, Physical activity, Exercise, Children, Down syndrome.

---

For a long time there is no doubt the positive effect of physical activity on the human body<sup>1</sup>. Their regular exposure stimulates the muscular, cardiac and immune systems<sup>2,3</sup>. Very positive feasible physical activity affects the blood system<sup>4,5</sup>, improving its hemostatic and rheological properties<sup>6</sup>. This is also true for people who have a chromosomal pathology, the most common

of which is Down syndrome. Down syndrome (trisomy on chromosome 21) is one of the forms of genomic pathology, in which the karyotype is most often represented by 47 chromosomes instead of the normal 46, since the chromosomes of the 21st pair, instead of the normal two, are represented by three copies. The presence of an additional chromosome causes the appearance of a number

of physiological features, as a result of which the child's body develops more slowly, later than usual, it goes through all the stages of formation. It's more difficult for a child with Down Syndrome to learn to walk, talk, read, write and do what ordinary children do. In addition, it is more difficult for children with Down syndrome to socialize in society, as they sometimes experience significant communication difficulties. Organizational actions in everyday life are very difficult for them<sup>7</sup>.

It has been noted that playing sports, primarily football, contributes to the development of many skills necessary for life in society, including punctuality, accuracy, discipline and diligence<sup>8</sup>. This is because football is a team sport, forming a team spirit, a sense of camaraderie, mutual assistance, and, therefore, creating the basis for quick adaptation in a team<sup>9</sup>. Therefore, it is during training that all children recover, actively socialize, reveal their abilities and become more sociable<sup>10</sup>.

Unfortunately, at present our country still lacks a unified system of sports training for people with Down syndrome, and football classes for children with Down syndrome are just starting to develop. For this reason, there is very little research in this area, which makes the information obtained as a result of a survey of parents of children with a chromosomal abnormality, who began to practice football regularly, very popular. The purpose of the work is to study the effectiveness of football in terms of the formation of social skills of children with Down syndrome.

## MATERIALS AND METHODS

The study was approved by the local ethics committee of the Russian State Social University on September 15, 2017 (protocol '9). The study was conducted on the basis of the Russian State Social University in Moscow, Russia.

To achieve this goal, 47 middle-aged people permanently residing in the city of Moscow were taken into the study. All participants in the study were parents of children with Down syndrome, regularly playing football for at least 1 year.

To determine the degree of importance of the problems of playing sports for children with Down syndrome, a questionnaire method was used.

The authors developed a questionnaire in which the respondents were asked 26 questions that needed to indicate the degree (point) of their importance on a 10-point scale (1 point - minimum, 10 points - maximum). Depending on the degree of relevance of the question, expressed in points, the answers were divided into groups: 9-10 points - "absolutely relevant", 7-8 points - "relevant", 5-6 points - "hard to say", 3-4 points - "Not relevant", 1-2 points - "absolutely not relevant." The data obtained were statistically processed using the method of average values. The calculations were performed using the standard Microsoft Excel for Windows software package.

## Research results and discussion

The results of the statistical processing of the opinions of parents about the degree of formation of social skills of their children with Down syndrome involved in football are shown in Table 1.

The results obtained during the survey showed that none of the considered social skills was classified by parents as "not relevant" (3-4 points) and "absolutely not relevant" (1-2 points). All indicators fell into the group of "absolutely relevant" (9-10 points) and "relevant" (6-8 points). This indicates a high degree of importance for parents of the proposed questions. The average score for assessing relevance ranged from 5 ("knows the basics of first aid") to 9.667 ("fulfills the instructions of elders - parents, teachers, trainers").

Parents paid special attention to social skills at '1-5 and stated the highest ratings of their formation. The indicators of Mo and Me, close to the arithmetic mean ( $\bar{x}$ ), indicate the uniformity of respondents' opinions. The low values of the coefficient of variation V also indicate unanimity in the interpretation of parents of the behavior of their children. The obtained digital data confirms the opinion about the positive impact of football on the degree of discipline, attitude to loved ones, the ability to independently serve and build communication with friends.

Children having deviations in health status are often closed in themselves for different reasons. For this reason, often there are misunderstandings in the family, with friends and there is a reluctance of peers to communicate with them. The football is in constant contact dealing with each other, which

contributes to the development of communication between children<sup>11</sup>. Trainings are held under the supervision of a trainer, corrective exercise and giving various guidelines. All classes and especially new exercises begin at the signal whistle of the coach, to which children with down syndrome from surveyed families are well accustomed always adequately respond to its sound. Because of this, they are more concentrated, the attention is not scattered, they listen carefully to the explanations of the coaches. Thanks to this motor density of training is consistently high, which helps to carry out the plan the training sessions<sup>13,14</sup>. Regular classes in this mode are formed in the mind of the child with a chromosomal pathology is the concept

of discipline, an understanding of how to behave in teams, how to organize their actions to accomplish a specific task. Received on the sports activities skills of children with down syndrome suffer in relationships with parents, teachers and peers<sup>15</sup>. They become more socialized, not afraid to meet difficult and unfamiliar situation, are well adapted to communication in a large team. This resulted in the establishment of skills such children easier learn independence and are willing to offer the aid of their comrades<sup>16,17</sup>.

Parents' assessments of skills '6-13 gave an average score () of 8.67 to 8, which suggests that children, thanks to football, become more attentive to their things, to the opinions and requirements of

**Table 1.** The formation of social skills of children with Down Syndrome playing football

No	Socialskills	( $\bar{X}$ ) (points)	m (points)	Me (points)	Mo (points)	$\sigma$ (points)	Ex	V %	V, %
1	Follows instructions of elders (parents, teachers, trainers)	9.67	0.211	10	10	0.516	-1.88	-0.968	15
2	Observes the friendly nature of communication with acquaintances, friends, family members	9.5	0.342	10	10	0.837	1.43	-1.537	17
3	Helps clean up (at home, in a group, class)	9.33	0.494	10	10	1.211	3.66	-1.952	13
4	Able to dress independently	9.0	0.516	9.5	10	1.265	-0.78	-0.889	17
5	Comes into contact with other children	9.0	0.365	9	9	0.894	-1.88	0.112	11
6	Complies with the order (in the game or completing tasks)	8.67	0.76	9	9	1.862	4.65	-2.066	12
7	Observes a greeting ritual (e.g. shakes hands)	8.67	0.558	9	10	1.366	-1.88	-0.968	25
8	Offers help	8.5	0.428	8.5	9	1.049	-0.25	0.231	18
9	Shows respect to elders	8.33	0.558	8.5	9	1.366	1.34	-0.889	13
10	Conducts a dialogue with adults, asks questions	8.0	1.001	9	9	2.449	-0.31	-1.102	27
11	Interested in completing assignments	8.0	0.856	8.5	10	2.098	-1.55	-0.585	28
12	Plays with children in the yard	8.0	0.577	8	8	1.414	-0.32	0.112	13
13	Takes care of the order in their things	8.0	0.516	8	8	1.265	2.51	-0.121	15
14	Listens attentively when they call him	7.83	0.911	8	10	2.229	1.14	-0.991	21
15	Keeps eye contact while talking	7.83	0.833	8	10	2.041	-1.42	-0.302	23
16	Observes good manners	7.83	0.703	8	8	1.722	0.81	-0.678	17
17	Able to choose a solution to some not difficult problem from the 2-3 proposed options	7.83	0.477	8	8	1.169	-0.45	-0.668	12
18	Cleans things and keeps the room clean and tidy	7.67	0.211	8	8	0.516	-0.65	-0.84	14
19	Performs tasks during set time	7.51	0.764	8	9	1.871	2.91	-1.649	18
20	Tries to comply with the daily routine	6.83	1.222	7.5	9	2.994	4.23	-1.973	24
21	Understands the importance of exercise and proper nutrition	6.83	0.833	7	9	2.041	-1.42	-0.302	25
22	Knows what things he may need during the day, prepares things in advance	6.33	0.615	7	7	1.506	-1.88	-0.968	16
23	Chooses nutritious snacks and understands the principles of healthy eating	6.17	1.302	7	7	1.389	0.27	-0.781	11
24	Can choose the most effective course of action for a task	6.17	0.401	6.5	7	0.983	-2.39	-0.456	13
25	Can resolve conflict when communicating with peers	6.01	1.065	6.5	8	2.608	3.71	-1.827	19
26	Knows the basics of first aid	5.02	1.125	5.5	7	2.757	-1.57	-0.43	26

parents, are interested in talking with them, asking questions and adequately conducting a dialogue, they try to analyze and think, building a logical chain in the conversation.

Indicators 6, 9, 13 had positive kurtosis (Ex) and negative asymmetry (As), which indicates the uniformity of respondents' opinions. Many estimates turned out to be significantly higher than the arithmetic average. The unanimity of the respondents when scoring was confirmed by the proximity of the median (Me) and mode (Mo) = 8-9 to the arithmetic average with the calculated indicator of the coefficient of variation (V) - not higher than 15%. However, negative values of excess (Ex) and asymmetry (As) in indicators 17, 10, 11 and relatively high values of the coefficient of variation (V = 25-28%) indicated the heterogeneity of the opinions expressed by the respondents.

The average value from 7.833 to 7.5 received questions 14-19. The skills included in this group characterize good manners and upbringing. As you know, children with a chromosomal abnormality often have some dementia, so it is difficult for them to fully understand and evaluate their behavior. Correcting bad manners is possible only by constantly correcting the child. It is necessary to systematically remind him of how to behave so that the correct scheme of action becomes a habit. Very important here is a mandatory greeting, which is an integral part at the beginning of a football training session. Team sports are also characterized by the constant support of their comrades. So, in training, children congratulate their teammate with every goal scored. This develops a sense of empathy, which in the future will help the child to be attentive to others and will enable him to be aware of his behavior and other people.

Social skills under numbers 20-26 showed the awareness of a child with Down syndrome of their actions, the ability to perform tasks and make decisions on their own. Digital indicators of the significance of these skills were very scattered, which indicates uncertainty in the responses of the survey participants. This can be explained by various reasons: either the child does not do it often, or such things have not yet been encountered.

## CONCLUSION

The analysis of the opinions of parents of children with Down syndrome showed the high importance of sports in the life of their child. As a result of visiting the section, such children get rich experience in communication. Here they take an example and try to be polite. Sports activity socializes the child, makes it possible to prove himself as an athlete, helps to overcome any internal barriers. Exercise helps to increase physical and psychological indicators in children with Down syndrome. According to parents, playing football changes the child's life for the better, adapts children to life in a team, reveals their mental potential, makes them more confident and more disciplined.

### Conflict of interest

No conflict of interest is declared.

### Sources of financing

The study was conducted at the expense of the authors.

### Ethics Committee Resolution

The study was approved by the local ethics committee of the Russian State Social University on September 15, 2017 (protocol 19).

## ACKNOWLEDGEMENT

The team of authors thanks the administration of the Russian State Social University for the opportunity to conduct research on its basis.

## REFERENCES

1. Zavalishina, S.Yu., Medvedev, I.N. Features aggregation erythrocytes and platelets in old rats experiencing regular exercise on a treadmill. *Advances in gerontology*, **29(3)**:437-441. (2016)
2. Simonenko, V.B., Medvedev, I.N., Kumova, T.A. Pathogenetic aspects of hypertension in case of metabolic syndrome. *Voennomeditsinskiizhurnal*, **331(9)**: 41-44.(2010)
3. Karpov, V.Yu., Raspopova, E.A., Stepanova, O.N., Kurkin, P.E. Entry splash suppressing techniques in modern competitive diving. *TeoriyaiPraktikaFizicheskoyKultury*, **5** : 71-73. (2018)

4. Medvedev, I.N. The Impact of Durable and Regular Training in Hand-to-hand Fighting Section on Aggregative Platelet Activity of Persons at the First Mature Age. *Annual Research & Review in Biology*, **15**(2): 1-6. DOI: 10.9734/ARRB/2017/35048 (2017)
5. Vorobyeva, N.V., Zavalishina, S.Yu., Mal, G.S., Grishan, M.A., Lazurina, L.P., Fayzullina, I.I. Physiological Features of Platelets in Aging Outbred Rats. *Indian Journal of Public Health Research & Development*, **10**(8) :1925-1929. (2019)
6. Medvedev, I.N., Skoriatina, I.A. Dynamics of microrheologic properties of erythrocytes in patients with arterial hypertension and dyslipidemia treated with atorvastatin. *Klinicheskaiameditsina*, **90**(6) : 42-45. (2012)
7. Makhov, A.S., Zavalishina, S.Yu. Physiological characteristics of children with Down syndrome against the background of regular football practices. *Teoriya i Praktika Fizicheskoy Kultury*, **3**: 54. (2019)
8. Bikbulatova, A.A. Maintaining a normal level of plasma bioregulators on the background of daily wearing corrective underwear in women with developing gynoid obesity. *Biomedical & Pharmacology Journal*, **12**(2) :689-695. (2019)
9. Andreev, S.N., Levin, V.S., Aliev, E.G. Mini football. Long-term training of young football players in sports schools. Moscow: Soviet sport, 304 (2008)
10. Simonenko, V.B., Medvedev, I.N., Tolmachev, V.V. Comparative evaluation of the influence of sulphhydryl and phosphate ACE inhibitors on thrombocyte aggregation in patients suffering from arterial hypertension with metabolic syndrome. *Klinicheskaiameditsina*, **85**(4) : 24-27. (2007)
11. Venevtsev, S.I. Adaptive sports for people with intellectual disabilities. Moscow: Soviet sport, 96 (2014)
12. Evseev, S.P. Adaptive sports for people with intellectual disabilities: status and development prospects. *Adaptive physical education*, **2**(50) : 2-11. (2012)
13. Korolev, P.Yu. Social adaptation of persons with intellectual disabilities by means of gymnastics: dissertation for the degree of candidate of pedagogical sciences: 13.00.04. Moscow State Academy of Physical Culture, 201 (2009)
14. Morozova, E.V., Shmeleva, S.V., Rysakova, O.G., Bakulina, E.D., Zavalishina, S.Yu. Psychological Rehabilitation of Disabled People Due to Diseases of the Musculoskeletal System and Connective Tissue. *Prensa Med Argent*, **104**(2). DOI: 10.4172/0032-745X.1000284 (2018)
15. Boyko, O.Ya., Zhukov, T.R., Shvykov, I.A. We train, we compete, we win! Yekaterinburg: Children's invalid sports and fitness center, 159 (2015)
16. Medvedev, I.N., Gromnatskii, N.I. The influence of hypocaloric diet on thrombocyte rheology in patients with metabolic syndrome. *Klinicheskaiameditsina*, **84**(3):49-52. (2006)
17. Kosukhina, O.I., Kachenkova, E.S., Germanov, G.N., Zbrueva, Y.V. Iatrogenesis in the intensive care. *Obshchaya Reanimatologiya*, **14**(6) : 23-27. (2018)