



# The impact of swimming on the motor activity of children with mental retardation

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## Abstract

Physical education and sport is a complex system aimed at solving problems of not only physical but also social development. Small physical activity maintains human health. Today, adaptive sports are becoming a part of the lives of many people with disabilities and changing their lives, both physically and psychologically. The state is actively developing this area of public relations and is making progress in this area. Adaptive sports are becoming a part of the lives of many people with disabilities and changing their lives, both physically and psychologically. Today, adaptive physical education is one of the most important parts in the field of health care and continues to develop rapidly, involving more and more people with disabilities in physical education and sports. Moreover, every year the state is increasingly striving to create the most comfortable conditions for sports for people with health problems. Adaptive physical education not only helps to strengthen, restore and maintain body functions, but also self-realization, develop social aspects of life and integrate into society. The aim of the study is to examine the effect of swimming classes on improving physical, intellectual and emotional indicators in children with mental development problems. According to the results of the study, it can be concluded that swimming classes improve the physical condition of those involved, help keep the body in good shape, despite the difficulties caused by health problems. Moreover, swimming improves coordination, cardiovascular and nervous systems. Classes have a positive psychological effect on this group of people. They do not feel such strong discrimination due to their characteristics and find like-minded people.

**Keywords:** *adaptive physical education, swimming, people with disabilities, improving physical condition.*

**Introduction.** Adaptive sports have become an integral part of life for many people with disabilities, transforming their lives both physically and psychologically. Today, adaptive physical culture is one of the most significant components of the healthcare sector and continues to develop rapidly, engaging more individuals with disabilities in physical activities and sports. Furthermore, each year, the government is increasingly focused on creating the most comfortable conditions for individuals with health issues to engage in sports. Adaptive physical culture not only strengthens, restores, and maintains bodily functions but also promotes self-realization, the development of social aspects of life, and integration into society [1].

Currently, adaptive physical culture remains a vital component of healthcare and continues to expand, involving an ever-growing number of individuals with disabilities in physical activities and sports. Additionally, the government aims to ensure these conditions are comfortable not only from the perspective of physical accessibility but also in terms of psychological well-being. By popularizing physical culture among people with disabilities, the government fosters a favorable environment that includes many individuals facing similar challenges. This allows them to find like-minded individuals and feel a sense of comfort.

According to statistics from the Ministry of Sports of the Russian Federation, published on the official Federal Statistics website, as of the first quarter



of 2024, the number of people engaged in adaptive physical culture is 1.7 million. Regional data are presented in the table below:

It is worth noting that the total population of Russia at the beginning of 2024 is 144 million, with 11 million of this number being individuals with severe congenital diseases or disabilities. This indicates that only about 16% of people with disabilities, or 1.5% of the country's total population, are involved in adaptive physical culture. However, it is important to highlight that this percentage is much higher among children with disabilities, reaching 80%. As can be observed, the number of people participating in adaptive sports has been steadily increasing each year, driven by the establishment of appropriate conditions, which are continuously expanding.

According to G.N. Karel'ova, Deputy Chairperson of the Upper Chamber of the Federal Assembly of the Russian Federation, one of the priority goals in the field of sports is to increase the percentage of individuals with disabilities involved in sports to 40% by 2030.

As mentioned earlier, the number of people with disabilities in Russia is 11 million. These individuals often face significant challenges in socialization, finding understanding, and receiving tolerant attitudes from others. Many experience prejudice and are subject to stereotypes suggesting that people with disabilities have no place in sports, especially professional sports, and that their needs should be addressed only

by special services or rehabilitation centers. However, it is crucial to understand that adaptive physical culture not only helps strengthen, restore, and maintain bodily functions but also facilitates self-realization, the development of social skills, and integration into society. The psychological aspect of adaptive sports is inherently rehabilitative, significantly influencing the outlook of people with disabilities and contributing to their treatment and overall well-being [1].

Adaptive physical culture has several distinctive features that must be considered. Below are its key aspects:

1. Individual approach: Working with people with disabilities requires a personalized approach due to their unique characteristics and health-related physical capabilities.

2. Specialized technologies and equipment: Adaptive sports necessitate the use of specific technologies and equipment, such as specialized exercise machines (including those for wheelchair users), and appropriately equipped facilities.

3. Qualified professionals: This group requires specialists with appropriate qualifications, as general trainers may not always be able to design suitable exercises that are both safe and effective.

4. Improvement of emotional well-being: Adaptive sports enhance the emotional state of individuals with disabilities, making them feel more complete, free, and improving self-perception. It also helps them find like-minded individuals and form connections.

*Number of people engaged in adaptive physical culture and sports from 2018 to 2023 in major regions of the Russian Federation.*

| Whole country                 | 2018         | 2019         | 2020         | 2021         | 2022         | 2023         |
|-------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|
|                               | 1,3 million  | 1,44 million | 1,49 million | 1,56 million | 1,65 million | 1,75 million |
| Central Federal District      | 301 thousand | 331 thousand | 353 thousand | 356 thousand | 376 thousand | 398 thousand |
| Moscow                        | 45 thousand  | 46 thousand  | 47 thousand  | 47 thousand  | 58 thousand  | 60 thousand  |
| Northwestern Federal District | 206 thousand | 220 thousand | 215 thousand | 221 thousand | 240 thousand | 244 thousand |
| St. Petersburg                | 139 thousand | 149 thousand | 142 thousand | 147 thousand | 160 thousand | 163 thousand |
| Southern Federal District     | 201 thousand | 213 thousand | 212 thousand | 223 thousand | 231 thousand | 239 thousand |
| Far Eastern Federal District  | 34 thousand  | 55 thousand  | 55 thousand  | 55 thousand  | 59 thousand  | 78 thousand  |
| Zabaykalsky Krai              | 7 thousand   | 10 thousand  | 4 thousand   | 5 thousand   | 4 thousand   | 18 thousand  |
| Irkutsk Region                | 10 thousand  | 12 thousand  | 13 thousand  | 16 thousand  | 18 thousand  | 22 thousand  |
| Kemerovo Region               | 16 thousand  | 17 thousand  | 17 thousand  | 18 thousand  | 19 thousand  | 22 thousand  |
| Novosibirsk Region            | 16 thousand  | 17 thousand  | 17 thousand  | 25 thousand  | 26 thousand  | 28 thousand  |



**The Aim of the Study.** The study aimed to examine the impact of swimming lessons on improving physical, intellectual, and emotional indicators in children with mental developmental challenges.

**Methods and Organization of the Study.** The experiment was conducted at Boarding School No. 1 from January to May. The research analyzed the influence of adaptive swimming lessons on improving the physical, intellectual, and emotional indicators of participants with mental developmental challenges. The study involved 30 children (aged 10-12) with intellectual disabilities, divided into a control group and an experimental group of 15 participants each. The experimental group engaged in physical exercise and swimming, while the control group participated in physical exercise only.

**Results of the Study.** Before the experiment, both the control and experimental groups underwent baseline tests:

1. Balance test ("Swallow");
2. Shuttle run (3x5);
3. Ball throw;
4. Balance test by walking along a sports bench.

Training in the experimental group was conducted in three stages:

Stage 1: Over the course of one month, children were prepared for physical activity through light exercises on a regular basis.

Stage 2: This stage lasted three months and involved coordination-improvement activities in the pool.

Stage 3 (Final Stage): This month-long stage focused on consolidating the results.

The sessions lasted 40 minutes and included warm-ups, developmental exercises, water games, and stretching and breathing exercises at the end.

At the conclusion of the experiment, control measurements were taken, yielding the following results:

1. Balance test ("Swallow"): Measurements showed no significant changes.
2. Shuttle run (3x5): Performance improved by 8%, with an average time of 9.5 seconds compared to 16.1 seconds at the start of the experiment.
3. Ball throw: Performance increased by 36.9%.
4. Balance test by walking along a sports bench: Results showed no significant changes.

Additionally, both the control and experimental groups participated in a survey assessing psychological adaptability and emotional intelligence.

The data obtained demonstrate that the psychological adaptability indicators in the experimental group are significantly more favorable than in the con-

trol group: 62.3% of the experimental group students are capable of maintaining control, compared to only 41.1% in the control group. The experimental group is almost seven times more psychologically adaptable, with students in the experimental group spending 60% less time in a state of conflict and being 23% more likely to attempt solving their problems independently.

**Conclusions.** From the results of the study, the following conclusions can be drawn: In the control group (which did not participate in swimming), it was revealed that children struggled to understand the material presented and had issues with coordination.

Regarding the balance tests ("Swallow" and walking along a sports bench), it was evident that more than five months of training would be needed to observe significant results. However, the second and third indicators improved, indicating the positive impact of adaptive sports combined with additional swimming lessons on improving physical capabilities, psychological adaptability, and emotional intelligence in students with health limitations.

Impact of Adaptive Sports: Adaptive sports contribute to improving the physical condition of participants, helping them maintain body tone despite health challenges. Moreover, adaptive sports improve coordination, cardiovascular, and nervous systems. These activities also have a positive psychological effect on this group of individuals, reducing the feeling of discrimination due to their specific characteristics and helping them find like-minded peers.

In the Russian Federation, adaptive sports are developing steadily year by year. Various organizations, including government bodies, pay significant attention to this area, attracting more people with disabilities to adaptive sports. Qualified coaches and other specialists create a supportive environment for children with mental developmental challenges. They motivate these children and teach them to believe in their abilities. As a result, athletes with disabilities improve their self-perception and develop a better relationship with their own bodies.

#### References

1. 1. Grigan, S.A. The Impact of Health Systems on the Physical and Mental State of Students in Special Medical Groups / S.A. Grigan // Herzen Readings. Physical Culture and Sports in the Educational Space: Innovations and Development Prospects. Collection of Materials from the All-Russian Scientific and Practical Conference. St. Petersburg, 2024. pp. 331–334.