

Modern fitness technologies and their impact on population health

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Abstract

Objective of the study was to determine contraindications to the most popular areas of fitness and to identify the validity of the stated results of such techniques as bodyflex and crossfit.

Methods and structure of the study. Theoretical substantiation of practical research experience, analysis of scientific and methodological literature (comparisons, analogies, induction).

Results and conclusions. An analysis of modern trends in fitness is presented, contraindications to certain types of physical activity are indicated. Contradictions between individual hypotheses and the scientific substantiation of the impact on those involved in such sports as bodyflex and crossfit were revealed. Due to insufficient knowledge of the influence of modern trends in fitness on the body of those involved, a recommendation is made for a professional attitude towards little-studied techniques.

Keywords: *modern trends in fitness, contraindications to exercise, crossfit, bodyflex, effectiveness of the impact.*

Introduction. One of the positive trends of recent times should be called the desire of the population to maintain health, including through physical education. Fitness, as the most popular type of physical education activity, has taken on the task of attracting the maximum number of people to physical exercise [10]. The modern fitness industry, responding according to the basic law of the market, has offered the population a variety of products, according to the request. However, not all of the proposed technologies have a scientific basis, both in terms of health safety and their effectiveness in terms of their impact on the development of motor qualities.

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Results of the study and discussion. Traditional swimming classes and sports games offered in fitness centers should be classified as well-studied, from a scientific point of view, types, in contrast to modern trends. The most popular of them are the following: aerobics in water, various types of *oriental dance, flex classes, step aerobics, fit-bo, ki-bo, kickboxing, ultimate fighting, Pilates, bodyflex; strength fitness areas: super sculpting, Upper Body, Lower Body, crossfit.*

Research into such areas of fitness as step aerobics, Pilates, and aquafitness confirms their effectiveness both in the development of motor skills and in improving the health of the body of those involved. At the same time, some of the modern trends, due to the lack of a full-fledged scientific justification, raise serious concerns about the possible negative impact and dubious influence on the development of physical capabilities.

Thus, scientists' warnings about contraindications to breathing exercises for certain chronic diseases, glaucoma, intracranial pressure and heart disease do



not reduce their popularity, especially among older people [7, 9]. And, despite the presence of limitations, some authors recommend using breathing techniques, in particular Bodyflex, at any age and regardless of the presence of chronic diseases [12].

Diseases of the urinary and cardiovascular systems, being quite common, impose a ban on training in strength sports, which include such modern trends as *super sculpting*, *Upper Body*, *Lower Body*, *CrossFit* [4, 8].

Strength training, due to the heavy load on all body systems, is also contraindicated for diseases of the endocrine system, one of which is diabetes [3]. The same restrictions in exercise are imposed on people with diseases of the gastrointestinal tract: ulcers of the stomach and duodenum, pancreas, various forms of gastritis, diseases of the intestines, gall bladder and bile ducts.

Diseases and problems with vision, respiratory diseases and neuralgia on the eve of classes require consultation with a specialist due to restrictions on a fairly wide range of loads.

A clear contraindication to physical education and sports is a recent inflammatory or infectious disease, after which you should wait for the body to fully recover.

Of course, all existing restrictions in physical education do not mean a complete absence of physical activity: for each specific disease, appropriate rules and training regimens are selected, which is described in the relevant literature [3, 4, 8]. In addition, a mandatory consultation with your doctor will help you avoid the undesirable consequences of excessive stress. However, few of those involved follow this rule, and medical personnel and fitness center instructors approach this problem formally and do not always warn about the possible consequences of such activities; on the contrary, one can find a recommendation: "for any age and level of fitness," without indicating obvious contraindications. At the same time, the qualifications of instructors are sometimes so low that they are not able to assess the optimal load for those involved, and in group classes people are often left to their own devices and rely on dosage solely on their own feelings, without resorting to methods of self-monitoring and self-diagnosis.

As a survey of 55 people working out in fitness centers in St. Petersburg showed, only three people knew about contraindications to strength training, of which only one person was warned about this by the center's medical worker and another by the instructor. Of the remaining 52 people, 43 did not undergo a full medical examination at all, and nine were examined only by some specialists. 18 out of 52 had chronic diseases, without suspecting that exercise should be

strictly dosed, and some exercises are generally contraindicated.

Another important point is the lack of fundamental research on the influence of modern fitness trends on the development of motor skills and the reduction of fat mass. Thus, the stated expected results from Bodyflex breathing exercises suggest a decrease in the fat mass of those involved, and as recommendations for the main exercises, the author puts forward the need to adhere to a daily routine, 4-5 balanced meals a day in small portions without fatty and fried foods with a predominance of vegetables and fruits at optimal the amount of water in the diet, which in itself can become a factor stimulating weight loss, and not breathing exercises [5].

The same can be said about CrossFit, a detailed examination of which from a scientific point of view casts doubt on the possibility of developing strength, speed, flexibility, endurance, and agility, which all well-known fitness centers promise in their advertising. The impossibility of such improvement is due to the CrossFit methodology itself: high-intensity exercises from different sports, performed without pauses for recovery, from a scientific point of view cannot develop either speed, agility, or general endurance. As for strength, an increase in the development of this quality, according to V.M. Zatsiorsky and modern authors, is possible only with significant muscular efforts, the magnitude of which is individual, while crossfit group training cannot take into account such features. In addition, V.M. Zatsiorsky warns that adaptation to significant muscle tension can lead to a decrease in strength, even when training with large weights, but less than the weight that is usually used.

In addition to the dubious benefits in the development of motor skills, CrossFit can cause significant harm to health, since it is widely used when working with different contingents. So yes. Kuraeva recommends this method as a means of general physical development of children [6], and E.L. Belova introduces CrossFit into the practice of working with primary schoolchildren [2] despite the fact that strength endurance exercises, which form the basis of the CrossFit methodology, involve repeated repetition of straining, which causes "cessation of blood flow in the loaded muscles and oxygen starvation of the brain" [11, p. 276]. Such exercises cannot be carried out not only with preschoolers and primary schoolchildren, but also with people of mature and elderly age [1].

As an analysis of publications by other authors shows, many studies do not take into account contraindications to certain areas of fitness.



Workers in the fitness industry are no exception in this regard. A survey of 25 instructors at fitness centers in St. Petersburg with basic physical education in accordance with Order of the Ministry of Labor of Russia No. 950n dated December 24, 2020, showed that only three people studied scientific literature in order to obtain information about ways to improve physical qualities using modern fitness equipment technologies; six out of 25 approximately know what contraindications exist when engaging in certain types of fitness, the rest believe that physical exercise cannot have contraindications provided that the participants are in good health.

Conclusions. Based on the above, we can state the following: the market for the provided fitness services is diverse, while the need for physical education among the population is quite high. However, the level of training of specialists, despite the availability of basic physical education, is insufficient, and the degree of professional awareness of the population about the possible impact of certain exercises on the development of motor skills and health is low.

Taking this into account, the problem of advanced training and retraining of personnel for this field of activity, awareness of the population about the usefulness of modern fitness techniques is becoming urgent. Scientists publishing the results of their research should treat the published materials with full responsibility in order to prevent the spread of false information regarding some modern trends in fitness.

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