

THE IMPORTANCE OF INDIVIDUALIZATION  
IN THE TRAINING OF QUALIFIED  
ATHLETES SPECIALIZING IN COMPLEX  
TYPES OF MILTIATHLON



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**DOI: [10.32540/2071-1476-2019-1-173](https://doi.org/10.32540/2071-1476-2019-1-173)**

**Annotation**

**The purpose of the research** is to study the main approaches of coaches to planning the educational and training process of qualified female athletes specializing in complex types of all-around (multiathlon), taking into account the biorhythmological characteristics of their body.

**The set of methods** used to solve the assigned tasks included: theoretical analysis and generalization of scientific and methodological literature data; questionnaire, pedagogical observation and methods of statistical processing of the obtained material.

**Results.** It was determined that more than 50% of coaches working with athletes in all-around sports do not take into account, or partially take into account the peculiarities of the course of the OMC (ovarian-menstrual cycle). About 90% of specialists carry out training sessions in the menstrual phase of the OMC and dose the training loads intuitively or according to the direct desire of the athlete. The volume and intensity of the load is adjusted only in the menstrual phase, less often in the premenstrual phase. In the menstrual phase, specialists use cyclic exercises at the Anaerobic Exchange Threshold (AET) level, exercises that develop flexibility, exercises of a general physical orientation. In this phase of the OMC, there is a decrease in the results in speed-strength and complex coordination types of all-round events.

**Conclusions.** The conducted questionnaire survey and our own pedagogical observations indicate that the individualized approach is not fully used in the training system of qualified female athletes specializing in the types of complex multi-events. Experts do not take into account the factors associated with the characteristics of health, performance and emotional state of athletes in different phases of the biorhythm of their bodies, which negatively affects sports results and health of athletes.

**Key words:** optimization, training process, planning individualization, load, biological characteristics.

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**Анотація**

**Мета дослідження** – вивчити основні підходи тренерів до планування навчально-тренувального процесу кваліфікованих спортсменок, які спеціалізуються в комплексних видах багатоборств, з урахуванням біоритмологічних особливостей їх організму.

**Сукупність методів**, використовуваних для вирішення поставлених завдань, включала: теоретичний аналіз і узагальнення даних науково-методичної літератури; анкетування, педагогічне спостереження і методи статистичної обробки отриманого матеріалу.

**Результати досліджень.** Визначено, що понад 50% тренерів, які працюють зі спортсменками в спортивних багатоборствах, не враховують, або враховують частково особливості протікання ОМЦ. Близько 90%

фахівців проводять тренувальні заняття в менструальну фазу ОМЦ і здійснюють дозування тренувальних навантажень інтуїтивно або після безпосереднього звернення спортсменки. Обсяг і інтенсивність навантаження коригується лише в менструальну фазу, рідше в передменструальну. У менструальну фазу фахівці використовують циклічні вправи на рівні ПАНО, вправи, що розвивають гнучкість, вправи загальнофізичної спрямованості. У даній фазі ОМЦ відзначається зниження результатів у швидко-силових і складнокоординаційних видах багатоборств.

**Висновки.** Проведене анкетування і власні педагогічні спостереження свідчать про те, що в системі підготовки кваліфікованих спортсменок спеціалізуються в видах комплексних багатоборств не в повній мірі використовується індивідуалізований підхід. Фахівцями не враховуються фактори, пов'язані з особливостями самопочуття, працездатності та емоційного стану спортсменок в різні фази біоритміки їх організму, що негативно позначається на спортивних результатах і здоров'я спортсменок.

**Ключові слова:** оптимізація, тренувальний процес, індивідуалізація планування, навантаження, біологічні особливості.

#### Аннотация

**Цель исследования** – изучить основные подходы тренеров к планированию учебно-тренировочного процесса квалифицированных спортсменок, специализирующихся в комплексных видах многоборий, с учетом биоритмологических особенностей их организма.

**Совокупность методов**, используемых для решения поставленных задач, включала: теоретический анализ и обобщение данных научно-методической литературы; анкетирование, педагогическое наблюдение и методы статистической обработки полученного материала.

**Результаты исследований.** Определено, что более 50% тренеров, работающих со спортсменками в спортивных многоборьях, не учитывают, либо учитывают частично особенности протекания ОМЦ. Около 90% специалистов проводят тренировочные занятия в менструальную фазу ОМЦ и осуществляют дозирование тренировочных нагрузок интуитивно либо после непосредственного обращения спортсменки. Объем и интенсивность нагрузки корректируется лишь в менструальную фазу, реже в предменструальную. В менструальную фазу специалисты используют циклические упражнения на уровне ПАНО, упражнения, развивающие гибкость, упражнения общефизической направленности. В данной фазе ОМЦ отмечается снижение результатов в быстро-силовых и сложнокоординационных видах многоборий.

**Выводы.** Проведенное анкетирование и собственные педагогические наблюдения свидетельствуют о том, что в системе подготовки квалифицированных спортсменок специализирующихся в видах комплексных многоборств не в полной мере используется индивидуализированный подход. Специалистами не учитываются факторы, связанные с особенностями самочувствия, работоспособности и эмоционального состояния спортсменок в различные фазы биоритмики их организма, что отрицательно сказывается на спортивных результатах и здоровье спортсменок.

**Ключевые слова:** оптимизация, тренировочный процесс, индивидуализация планирования, нагрузка, биологические особенности.

**Introduction.** The preparation of highly qualified athletes is a multifaceted process that integrates various components of sports activity and is focused on achieving the highest sports result in a chosen sport (Vrublevskiy, 2015). The professional activity of qualified athletes presupposes the manifestation of motor abilities in their optimal combination under extreme conditions of competition. In this regard, a special role is assigned to the determination of effective directions of sports training. One of the

priority directions in the training of qualified athletes can rightfully be considered the implementation of the principle of individualization.

When describing the principle of individualization in the modern scientific and methodological literature, the authors, for the most part, limit themselves to recommending the need to take into account individual characteristics, as well as to ensure that the size of training influences corresponds to the sexual, age and functional capabilities of the body (Verkhoshansky, 1985; Ryba-

kov, 2003; Vrublevskiy, 2009).

A number of authors consider the process of individualization through the prism of three main components:

- the learning process (individualization of forms, methods, means);
- training process (individualization of the training structure);
- competitive activity (realization of the individual maximum manifestations of possibilities).

At the same time, according to the authors' opinion, individualization should be considered as one of

the most promising and effective forms of management in training highly qualified athletes.

Currently, there are practically no "male" sports left, representatives of the so-called "weaker" sex are actively mastering the originally male-oriented sports. However, the training process for women is usually based on the methodology used in the training of male athletes. In its turn, in the system of sports training, in addition to general provisions, there are features characteristic only of female representatives, which lead to differences in the course of adaptation processes in the female body, and the associated individual manifestations, primarily, biological cyclicality. Data on the biorhythmological characteristics of the female body are often not taken into account in the training process, which is one of the main reasons for the health disorders of athletes, a decrease in sports results, and early retirement from sports. In our opinion, the individualization of the training of athletes is expressed in the redistribution of the planned load, taking into account their functional capabilities in different phases of the biorhythm of their body.

It is noteworthy that almost all modern literary sources available to us that consider the features and individualization of the training process in women's sports are devoted to individual sports (athletics, swimming, rowing, etc.), less often to sports games. In the open press, there are clearly not enough works considering this direction in complex types of multi-events. The types of all-round events are distinguished by increased requirements for the manifestation of all types of sports readiness by athletes. Athletes need to show high results during the competition in different kinds of kinematic and dynamic structure. So, in athletics all-around, athletes must possess a whole complex of seemingly incompatible motor qualities characteristic of athletes specializing in running short and medium

distances, in athletics jumping and throwing (Kupchinov, 1998). In modern pentathlon - swimming, fencing, equestrian sports, running and shooting. The mutual, not always positive, influence of the types included in the complex all-around requires a special approach to planning the training process. This is especially true in women's types of multiathlon, where the coach must provide for the biological characteristics of the female body.

**The aim of the research** is to study the main approaches of coaches to planning the educational and training process of qualified female athletes specializing in complex types of multiathlon, taking into account the biorhythmological characteristics of their body.

**Material and methods.** The set of methods used to solve the assigned tasks included: theoretical analysis and generalization of scientific and methodological literature data; questionnaire, pedagogical observation and methods of statistical processing of the obtained material.

The research was carried out on the basis of the research laboratory of Olympic sports at F. Skorina Gomel State University; 19 qualified coaches participated in the survey, whose athletes specialize in complex types of athletics all-around events and modern pentathlon and have achieved high sports achievements (Master of Sport, International Master of Sports). The coaching experience of the respondents is from 7 to 45 years, four specialists have the title of "Honored Coach".

**Results.** Our questionnaire survey revealed that 82.7% of respondents note the difficulty of working with the females, in contrast to men. 26.3% of respondents in their work do not take into account the periods of the OMC phase of female athletes; 31.5% take them into account partially; 42% take into account the individual characteristics of the course of OMC in their female students. When asked about the need to carry out exercises in the menstrual

phase, 89.5% of specialists consider it compulsory to conduct training sessions.

The answers of experts were ambiguous when considering the issue of correcting the planned volumes and intensity of the load in the menstrual phase of the OMC, since 47.4% of specialists do not reduce the volume of the load, 31.5% - reduce the volume depending on the state of the trainees and only 21.1% - plan the load of each athlete individually. However, 94.8% of respondents reduce the intensity of the load during the menstrual phase of the OMC.

About the recommended means of sports training, used in the menstrual phase, 57.8 specialists named cyclic exercises at the level of Anaerobic Exchange Threshold (AET), exercises that develop flexibility, 21% - exercises of general physical orientation, 21.2 - correct the choice of planned means of training depending on the state of the athlete. When asked about the connection between sports results and the menstrual phase, the respondents did not answer unequivocally: 57.8% of specialists did not notice changes in the performance of their athletes, 42.2% observed a deterioration in the results at competitions during the period of menstruation.

Almost all respondents noted difficulties in performing speed-strength types of all-around events in this phase of the OMC. The trainers working with the representatives of the athletics all-round events identified the difficult-coordination types, in particular, hurdles and jumping types, as the most susceptible to a decrease in results in the premenstrual phase of the OMC. Representatives of modern pentathlon define fencing as the type of all-around most influenced by the OMC phases.

A number of specialists (57.8%) note a certain shift in the cyclicality of the OMC phases in the competitive training period, 26.3% note such changes when performing volumet-

ric, most intense loads. All respondents note irritability and less often psychological imbalance of female athletes in the premenstrual phase.

The results of the survey showed that when conducting the training process with women, it is necessary to take into account a number of factors related to the characteristics of health, working capacity and emotional state of athletes in different phases of the biorhythm of their body.

**Discussion.** In recent years, the interest of specialists in the problem of individualization in women's sports has increased. We have studied more than 100 modern literary sources published in the period of 2015-2020, considering the issues of individualization of training in sports. In a number of works, the authors directly consider the features and individualization of the training process of women. Basically, these works are devoted to the individualization of the training process of athletes of various qualifications, individualization by biological characteristics (biorhythmological characteristics, physical condition, etc.), individualization of psychological training.

So Sabirova I.A., Germanov G.N., Kaidakova A.V. Considering the peculiarities of individualization of the training of athletes, we identified the uneven psychophysical state of qualified athletes specializing in bullet shooting during the menstrual cycle, which, in their opinion, can be the basis in the individual planning of training athletes for the main starts (Sabirova, Germanov, Kaidakova, 2017).

Kireeva Y.V., Ignatieva L.E. developed an individualized approach to the long-term training of biathletes based on the indicators of the dynamics of the functional state. In the course of the experimental work, specialists have developed group and individual model characteristics of high-class female biathletes. Based on dynamic studies of the functional state of the body of ath-

letes, a model of an elite athlete has been developed (Kireeva, Ignatieva, 2020). Vrublevskiy E.P., Sherenda S.V., Lashkevich S.V. developed and implemented options for an individualized mesocycle in the training process of qualified football players, taking into account the biorhythm of their body (Vrublevskiy, Sherenda, Lashkevich, 2019).

Perhaps the largest number of scientific works is devoted to the issues of individualization in athletics, so Irkhina E.N. with co-authors in their studies aimed at implementing the principle of individualization in the training of short-distance runners proposed an individualization method based on taking into account the individual characteristics of the athletes' motor fitness and compliance with their model requirements (Irkhina, Gvozdevsky, Koverin, Knyazeva, Kovalenko, Pronina, 2018).

Kozhedub M.S. with the co-authors have developed a differentiated method of individualization of training qualified short distance runners. The methodology was based on the use of a gender-differentiated approach (Kozhedub, Vrublevskiy, Kostyuchenko, 2017). S.V. Sevdalev with the co-authors revealed the peculiarities of the work capacity of runners for short and medium distances at certain phases of the ovarian-menstrual cycle. The authors proposed experimental schemes for the general preparatory stage in the spring-summer preparatory period. The introduction of research results into the practical activities of qualified athletes contributed to the leveling of the negative effects of individual characteristics of the course of individual phases of the OMC and reduced the degree of their influence on the performance (Sevdalev, Kozhedub, Vrublevskiy, Mitusova, 2020).

In the work of Yakimova E.A., Natakhina N.V., problematic issues of the implementation of the principle of individualization in the process of training athletes in ath-

letics are considered. The authors describe the functional changes that occur in the body of women during the ovarian-menstrual cycle. Recommendations are given on the use of sports training means in the training of female athletes, in particular strength and speed-strength training. The need to strictly take into account the individual characteristics of the female body in order to achieve maximum sports results, maintain health and ensure sports longevity is substantiated (Yakimova, Natakhina, 2015).

Noskov M.S., Gorelov A.A., Tretyakov A.A. developed model characteristics of highly qualified sprinter swimmers based on somatic and functional indicators of special working capacity (Noskov, Gorelov, Tretyakov, 2015). Zverev S.N. in the work: "Individualization of planning in women's biathlon" presents a theoretical substantiation of the need to create an effective pedagogical system, a substantiated concept of individualization of training for biathletes, modeling of the dynamics of fitness of athletes, taking into account bioenergetic types, which, in her opinion, will further develop a method of individualization of a year-round the training process of biathletes (Zverev, 2014).

The issues of individualization of training in sports games are devoted to the research of V. Kostyukevich, N. Schepotina. In their works, the authors substantiated the construction of the training process of athletes of team game sports in the annual training cycle on the basis of model training tasks. The model training tasks, micro- and mesocycles, periods, and a one-year cycle of training qualified female volleyball players developed by them made it possible to rationally plan and optimize the training of athletes, as well as to implement the principle of individualization in the preparation of an integrated team (Kostyukevich, Schepotina, 2016).

Research by Ponomareva I.A. were also carried out in the plane of

individualization of training female athletes in sports games. The experimental construction of training loads proposed by the author, based on individualization taking into account the principles of kinesiology, ergonomics and including dynamic monitoring of the functional state, contributed to the preservation of the optimal level of the functional state and skill of athletes (Ponomareva, 2017).

Nenenko N.D., Dzyubinskaya L.V., Stogov M.V. in their studies, they studied the influence of water polo classes on the characteristics of somatic development and the adaptive capabilities of the cardio-respiratory system of adolescent athletes with different variants of biological development in the annual training cycle in water polo. Taking into account the biological variant of the development of water polo players of adolescence allows us to give an adequate assessment of the current and potential capabilities of athletes, contributes to the individualization of the training process (Nenenko, Dzyubinskaya, Stogov, 2020). Tarasenko E.I. in his works, he considers the problem of taking into account the biological and physiological characteristics of the female body when drawing up a training program in a chosen sport. The author proposes to provide individualization of training loads, taking into account the phases of a specific biological cycle and on the basis of regular comprehensive monitoring of the athletes' well-being (Tarasenko, 2018).

Safarova D.D., Pulatova M.D., Sultanova Yu.A. on the basis of the studied interconnections of hemodynamic indices with the manifestation of physical working capacity, the most integrative indices of fitness and functional state of female judokas of various weight categories were revealed during the training cycle. The obtained data are used by the authors in the context of individualization of training (standardization of training loads and

correction of training programs). highly qualified athletes of the Republic of Uzbekistan (Safarova, Pulatova, Sultanova, 2017).

In the modern conditions of elite sports, the selection of the most promising athletes is of particular importance. The problem of sports selection with subsequent individualization of the training process is of paramount importance in the system of long-term training and directly affects the level of sports achievements in general. Kostyuchik I.Yu. in his research determines the age patterns of the development of athletes involved in swimming. The author investigated the age-related dynamics of changes in anthropometric and physiological indicators (Kostyuchik, 2019).

In a number of works, the authors consider the direction of individualization of the psychological training of athletes. So Podgornaya Yu.N. dealing with the problem of psychological preparation in rhythmic gymnastics, she developed a method of individualization based on taking into account the sociogenic personality types of athletes (Podgornaya, 2017). Nikolaev A.N. in his work "The effectiveness of individualization of the psychological training of athletes" substantiated the need for individualization of the psychological training of athletes, which allows to significantly optimize the severity of the parameters of the components of general readiness (the ability to self-regulation of the pre-start state and motivation of the entire process of training and competitive activity) and special readiness (activity and pre-start stenic mood). The author defines the aspects that determine the main psychologically important qualities of rowers, influencing the readiness of athletes for the main competitions. Recommendations have been developed for the selection of means of psychological training using an individual approach (Nikolaev, 2017).

Nakonechnaya L.E., Romanina E.V. Studying the issues of individ-

ualization of psychological training in team sports, they offer recommendations and technology for the program of individualization of the psychological training of highly qualified female athletes in mini-football, built using an integrative approach. Testing of this program made it possible to achieve positive changes in the manifestation of stress resistance, overcoming the confounding influence of competition factors, as well as increasing the psychological stability of athletes (Nakonechnaya, Romanina, 2017).

The individualization of the training of female Paralympic athletes with lesions of the musculoskeletal system is considered in the works of Stepyko D.G. In accordance with the results of the study, specialists proposed to individualize the training process of Paralympic athletes specializing in athletics using a systematic approach to assessing the level of physical, functional and psychological readiness, which is based on the use of software and hardware complexes (Stepyko, 2018).

According to the authors, the individualization of the training process to a large extent requires the development of new management and control tools for the training process based on the use of modern information technologies. Karpov S.D. suggests using information technologies in the process of training athletes. After analyzing various means of control of the training process implemented on the basis of information technologies, the author revealed that the systematization and further comprehensive analysis of the data obtained in the process of training and competitive activity is effective on the example of using an electronic diary of a trainer (Karpov, 2018).

The authors also studied the main approaches of practicing coaches to the peculiarities of training qualified athletes. Thus, Kozhedub M.S., Vrublevskiy E.P., in order to determine the main approaches of train-

ers to planning the educational and training process of qualified athletes, taking into account the biorhythmological characteristics of their body, conducted a questionnaire survey of the leading trainers specializing in running at medium and long distances. The analysis of the coaches' questionnaires allowed the authors to obtain the following data: more than 9% of respondents in their work do not take into account the periods of the OMC phase of female athletes; 28.2% take them into account partially; 62.6% of coaches use information about the individual characteristics of the course of biorhythmological processes when drawing up a training plan. More than 72% of specialists consider it compulsory to conduct training sessions in the menstrual phase, 12% do not change the planned volume and intensity of the load (Kozhedub, Vrublevskiy, 2018).

D.A. Albarkayi with the co-authors, in order to take into account the characteristics of the female body in the training process with athletes, conducted a survey of highly qualified coaches specializing in the preparation of women's teams in sports games. According to the research, 16.6% of the surveyed coaches do not take into account the timing of the OMC, 12.6 take it into account

partially, 83.3% - conduct training sessions in the menstrual phase, 41.7% - do not reduce the volume and intensity of the load (Albarkayi, Khorshid, Vrublevskiy, 2018).

The most significant scientific work carried out in the direction of individualization of the training of qualified athletes who were published in the period 2015-2020, in our opinion, can be considered the monograph "Technology of individualization of training of qualified athletes: theoretical and methodological aspects" prepared by the team of authors under the guidance of Professor E. P. Vrublevskiy. The monograph examines both the general aspects of the implementation of the principle of individualization in sports, and its specific manifestations in speed-strength types of athletics. Information on morphological and functional characteristics of female athletes is systematized and presented. Fundamental approaches to the achievement of adequate pedagogical influences to the dimorphic specifics of the deployment of adaptive processes in the female body and psyche under the influence of training loads have been substantiated. A methodological algorithm for the individualization of the training of qualified athletes specializing in speed-strength types of athletics

is presented (Vrublevskiy, Sevdalev, Narskin, Kozhedub, 2016).

**Conclusions.** The conducted questionnaires and own pedagogical observations indicate that the practitioners do not have a common opinion in the approach to planning the educational-training process of athletes in connection with the biorhythmological characteristics of their organism. The overwhelming majority of the coaching staff working with the female contingent, when planning the training process, do not take into account the entire spectrum of features of the course of the OMC. Basically, the dosing of training loads is carried out according to the direct desire of the athlete, sometimes intuitively. The volume and intensity of the load is adjusted only in the menstrual phase, less often in the premenstrual phase. In connection with the above, it can be stated that the individualized approach is not fully used in the system of training qualified athletes specializing in the types of complex all-round events. Ignoring the principle of individualization, in our opinion, has a negative effect on sports results, sports longevity and, above all, the health of athletes.

**Conflict of interest.** The authors declare that there is no conflict of interest.

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