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**Stepanyuk Svetlana**  
Candidate of physical training and sport Sciences, associate professor  
Associate Professor, Department of Theory and Methods of Physical Education Kherson State University  
**Serputko Olha**  
Candidate of the second (master's) level of higher education  
Kherson State University Aikido instructor Aikido Club "Bushin"  
**Kharchenko-Baranetska Luidmyla**  
Candidate of physical training and sport Sciences, associate professor Associate Professor, Department of  
Olympic and Professional Sports Kherson State University  
**Koval Victoria**  
Candidate of pedagogical sciences, associate professor  
Associate Professor, Department of Theory and Methods of Physical Education Kherson State University  
**Tkachuk Vera,**  
Candidate of Pedagogy(Ph. D), teacher of Ivano-Frankivsk College of Physical Education of National  
University of Physical Education and Sport of Ukraine,

### THE PROBLEM OF PREPARATION OF AIKIDO ATHLETES OF THE SECOND PERIOD OF ADULTHOOD FOR THE FIRST AND SECOND DAN DEGREE ATTESTATION

The article analyzes the peculiarities of the organization of physical culture and sports activities of athletes of the second period of adulthood in aikido in preparation for certification for the first and second dan degree. The state of physical culture and sports activity in the conditions of preparation for the exam for the master level is revealed. It is determined that aikido classes are recommended for adult athletes, especially of the second period of adulthood, regardless of their level of previous training. This fact corresponds to the age characteristics of this age group, and, due to individual and multifactorial approach, not only serves as a stimulus for physical exercises, but also gives the opportunity to continue active sports activities in the second period of adulthood and in subsequent periods. It was found that the optimization of physical culture and sports activities and in particular the preparation and the process of dan degree certification has a positive effect on psycho-emotional and physical condition of the athlete, reduces risk of injury during the training, aikido demonstration or certification performance. It is established that the use of division of athletes into groups according to their weight and physiological characteristics, adopted in other martial arts, is effective for aikido, reduces the risk of injury during the certification and more effectively practice and consolidate new skills. At the same time, it gives a very isolated vision of technology and its forms, because classical aikido involves working with a partner of any age, weight category and level of physical fitness.

This article identifies the problems of preparing aikido athletes of the second period of adulthood for attestation for the first and second dan degree. The features of the integral training of athletes of this age category are firstly, they are non-professional athletes who, as a rule, started practicing aikido already in adulthood that entails a number of age-related physiological aspects; often they have no any sports experience before doing aikido, or have some experience in other martial arts or kind of sports. Secondly, the dan exam (black belt, master's degree) is preceded by a series of attestations at the qui level (student's degree), which is a preparatory stage during which aikidoka develops his technical level, endurance, the ability of effective interaction with a partner of any level of physical preparedness and without reference to the nature of his technical and tactical actions. However, the duration of the dan exam (1-1,5 hours), the variety of techniques that are to be demonstrated at the same pace of work (manual techniques in different sections and work with weapons). A high level of psychological, emotional and physical stress during the examination often cause a low level of quality of the technique execution, numerous mistakes during the implementation, and, as a result, injury to both uke (the one on whom the technique is performed) and nage (an athlete demonstrating the aikido techniques). Sometimes such a stress leads even to a refusal of further attestations or practicing aikido. The author, an aikido trainer, basing on the personal experience, as evidenced by the results of the research, as well as the experience of Ukrainian and foreign colleagues, gives recommendations on how to increase the efficiency of training athletes for aikido and other types of martial arts at high levels attestation. Proposes methods of increasing the training effectiveness, improving the endurance of athletes, developing the ability of psychological self-control, and offers new approaches to the organization of certification, seminars and the training process, in which athletes will receive the most favorable conditions for demonstrating their knowledge, skills and abilities.

**Key words:** aikido, athletes of the second period of adulthood, dan degree attestation, dan examination, training of athletes, training of aikido athletes, training of adults, adult athletes.

**Степанюк С., Серпутко О., Харченко-Баранецька Л., Коваль В., Ткачук В. Проблема підготовки спортсменів з айкідо другого періоду зрілого віку до атестації на перший та другий дані. В статті проаналізовано особливості організації фізкультурно-спортивної діяльності спортсменів другого періоду зрілого віку з айкідо під час підготовки до атестації на перший та другий дані. Розкрито стан фізкультурно-спортивної діяльності в умовах підготовки до екзамену на майстерський рівень. Визначено, що заняття з айкідо є рекомендованими для дорослих спортсменів, зокрема другого періоду зрілого віку, незалежно від рівня їхньої попередньої підготовки, що відповідає віковим особливостям зазначеної вікової групи, а також, за рахунок**

індивідуального та багатofакторного підходу, не тільки слугує стимулюючим фактором до занять фізичними вправами, а й дає можливість продовжувати активну спортивну діяльність не лише у другому періоді зрілого віку, а й у подальших періодах. Виявлено, що оптимізація фізкультурно-спортивної діяльності та зокрема підготовки та самого процесу проведення атестації на дані, позитивно впливає на психоемоційний та фізичний стан спортсмена, знижує ризик травмування під час тренувань, показового чи атестаційного виступу. Встановлено, що використання розподілу спортсменів на групи відносно до їхньої маси та фізіологічних особливостей, прийнятого в інших бойових мистецтвах, є ефективним і для айкідо, дозволяє знизити ризик травмування при атестації та ефективніше відпрацювати та закріпити навичку нової техніки, проте дає дуже ізольоване бачення використання техніки та її форми, адже класичне айкідо передбачає роботу з партнером будь-якого віку, вагової категорії та рівня фізичної підготовленості. Також становлено, що біг на дистанцію більше кілометра (джогінг) є ефективним засобом тренування витривалості при підготовці до екзамену на дан, тривалість якого складає 1-1,5 год. Автори статті, на базі реального експерименту, власного досвіду та досвіду вітчизняних та закордонних колег, а також різнобічного підходу до проблеми інтегральної підготовки спортсменів з айкідо другого періоду зрілого віку до атестації на перший та другий дані, надають рекомендації щодо оптимізації як тренувального процесу загалом, так і підготовки до екзамену на майстерський рівень, який передбачає не лише високий рівень фізичної підготовленості, ефективну взаємодію із партнером, активну участь у роботі на татамі як в ролі наге, так і уке, а також глибоке розуміння та майстерне використання технік та укемі з айкідо з метою збереження як власного здоров'я та життя, так і партнера. Крім того, важливим аспектом є віковий ценз спортсменів, адже до кандидатів та володарів чорних поясів висуваються дуже високі вимоги, що стає справжньою перешкодою для успішної атестації практикуючих айкідо у дорослому віці по всьому світі. У представленій статті розглянуто лише другий період зрілого віку (36-55 років жінки та 36-60 років чоловіки), проте надані рекомендації є актуальними і для спортсменів як першого періоду зрілого віку, так і старших вікових категорій.

**Ключові слова:** айкідо, спортсмени другого періоду зрілого віку, атестація на дан, тренування з айкідо, спортивне тренування, дорослі спортсмени, спортсмени зрілого віку.

**Introduction.** The problem of preparation of aikido athletes for the dan degree examination seems to be multicomponent and thus very important. The cause is that the most part of the sportsmen such a rank, after passing a succession of exams for qui degree, becomes the board, which is the end of growing in aikido training by means of technical level as well as physical and tactical [9].

It is noticed that people who practice aikido very often have no experience in professional and Olympic sports. Although reaching the level of the first and second dan degree is connected with up to 5 to 7 or even much more years of constant work on tatami – that is quite a long period of time that includes ponderable operating time and a high level of physical, mental, tactical and technical preparation. Still as the attestation for such a dan degree lasts for about an hour, or sometimes an hour and a half – we face the problem of the integral preparedness, in which a lack of endurance and a psychological component is felt [6].

As for the contingent of the research, we are to work with the aikido athletes of the second period of adulthood (that is 36-55 years for women and 36-60 for men) [2]. Such a choice was made on the ground of the fact that this age category is experienced enough in comparison with the previous age periods in gradation system. In addition, sportsmen of the second period of adulthood mostly have more weight. That is why speed component is not so strongly marked. The work of the nervous system undergoes some age-related changes, in particular there is a violation of neural connections – as a result the reaction on the attack as well as the reaction on a pain control may be delayed that can lead to injuries [10].

So that, the **purpose of work** is to consider the problem of preparation of the aikido athletes of the second period of adulthood for the first and second dan degree attestation. And also to give the effective recommendations for the training of the aikido athletes of the second period of adulthood for the first and second dan degree examination, which include all the faced problems in training process. And to develop the strategy of the organization of the attestation to create the best conditions for the sportsmen to demonstrate their motion, technic, skills and abilities with fewer injuries and risks for health.

**Methods of research** are theoretical analysis and generalization of scientific data and methodological literature, taking into account the experience of their own observations during the training process.

**Materials and methods of research.** The participants in the experiment were selected from a cohort of men of the second period of adulthood (39-45 years old), practicing aikido in the Aiwa Dojo of the BUSHIN Aikido Club, Kherson, Ukraine. They were the candidates for the first and second dan degrees in aikido of different weight categories, with different parameters of growth and length of limbs in the amount of six men.

It is assumed that the conditional division of athletes into groups, according to such physiological indicators as weight, height and length of the limbs, in preparation for attestation and during its implementation, can give athletes not only the opportunity to demonstrate a high level of performing techniques, but also significantly reduces the risk of injury [6]. In addition, in order to increase the endurance of athletes and the ability of maintaining high and medium pace of work on the tatami during the exam, it is proposed to add jogging to the regular training process with a gradual increase in distance length from one to five kilometers during the three months of the preparatory period.

The idea of conducting this experiment arose in connection with the preliminary examination, which was carried out among candidates for the first and second dan six months before the proposed exam. All the participants received a number of comments on the knowledge of techniques and execution technique from the commission of instructors, no one managed to maintain a constant pace of work (it decreased after 10 minutes). An insufficient number of options was shown, which is explained by the high level of psychological and emotional stress and fatigue.

As a result, six men aged 39-45 years of various sizes were selected in the Aiwa Dojo (experimental group) and six candidates for the same level of the same age category in the Bushin Dojo (control group). Over the next three months, our task was to introduce in the experimental group the training method with the arrangement of pairs, based on the weight, height and length of the partners' limbs, and also to introduce jogging into the training process. Then to make a cut of the indicators of both groups, compare the effectiveness of the proposed methodology and assess the level of integral readiness of candidates for black belts.

As it is known, aikido is based on the principles of pair work, in which one of the participants acts as a nage (an athlete to whom the attack is directed, to which he must respond in a certain way with the least effort and movement). The second partner – uke, must fully attack nage and demonstrate an adequate and in-time response to the technique and also provide timely insurance of the body to avoid injury [5]. Conventionally, all the techniques in aikido are divided into throwing – performed with a throw at the end, and control techniques – involve the implementation of laying the partner in a safe position for the nage with subsequent pain control [4].

The difficulty of proper performance of the technique is that to show a high-level technique for both the partners is possible if they have the same technical level of training, and the ratio of their weight and height. However, there are no categories of weight, sex, etc. in aikido that is, claiming a certain level, the athlete must show close to ideal performance technique on any partner [8].

In studying this issue, aiming not only to improve the performance of aikido athletes, but also to make the exam preparation process more efficient and less traumatic, we studied and took into account the recommendations on the model characteristics of the fight by F.Zagura [1], designed for judokas, which are also relevant for aikido athletes. Therefore, based on the researcher's conclusions, in order to avoid unintentional injuries during examination and for better performance of techniques and better demonstration of acquired skills and knowledge, it is recommended to divide athletes into three conditional groups. The division is based on the following indicators: height, weight and length of limbs. According to the author's research, these factors determine the manner of fighting on the tatami. The first group is *strongmen*, they have a relatively short stature, but great weight, long arms and well-developed upper shoulder girdle. Due to this physique, they do not show high activity on the tatami, demonstrate low technique, but have a high efficiency in relation to attempts to execute. The second group – *tempos*: high stature, long limbs, active in combat, often use the technique of re-attack, cheating partner, moving, do not leave a failed attempt to perform techniques, but have an average activity and technicality. The third group – *players*, mostly of short or medium height, subtle body structure, long limbs, have the highest level of successful attempts at technical and tactical actions, demonstrate the highest technicality and versatility of technical training, but have the lowest weight compared to other groups.

Taking into account the results of research by F.Zagura [1], we analyzed and differentiated into the groups all the participants of the experiment and arranged the pairs based on the manner of conducting the fight.

The next step of the experiment was including jogging to the training process. Every participant of the experimental group had to run three times a week at any convenient time, making screenshot in a jogging mobile application and sending it to the trainer. All of them started from one kilometer and when the athlete got used to the load, one had to add a half of a kilometer so that to the end of the experiment tern the race would include five kilometers [3].

**Results of the research.** Based on division proposed by F.Zagura [1], we defined that in the experimental group there were two "strongmen", three "tempos" and one "player". We united them into usual pairs – "strongmen" worked together, the most light-weighted "tempo" worked in a pair with a "player", and two other "tempos" formed the last couple. First positive results of such a division have been seen after the first week of work. The sportsmen noted it was much easier to work with the partner's center dealing with the partner of the same speed and manner of work.

This division has shown high results in the development of new aikido techniques, as well as the processing of difficult moments. In addition, this approach showed the highest technical ability of athletes on the control pre-examination, each of the athletes in each category was able to demonstrate their skills, both in the role of uke and nage, without undue physical exertion, stress and trauma. However, based on our own observation and direct participation in the training process, we can say that this division is not effective in practicing familiar techniques, because the practical purpose of aikido practice is to implement the acquired skills on a partner of any stature and level of training [7]. We consider this method can be effective for practical application in sports disciplines that involve wrestling, close work in pairs and in all types of martial arts.

Jogging became the hardest part of the experiment, because, as we have noticed at the beginning, aikido athletes are not Olympic or professional sportsmen and have no special preparation. Only two of the six participants of the experiment achieved the mark of five kilometers in jogging, their best results were 35 and 43 minutes. All the others continued jogging three times a week but for only one kilometer, according to their well-being. However, all the athletes noticed that they feel much better and undergo the regular training load much easier and do not lose the control under the quality of applied techniques because of feeling tired or exhausted.

**Conclusions/ discussion.** Having conducted the experiment, we concluded that the methods suggested in this article are effective and lead to better results in practicing aikido and in purpose of passing the exam for the first and second dan degree, and we can recommend them for candidates for the third and fourth dan degree. Nevertheless, there are some remarks. Division to the groups according to the manner of fight is productive, opens new possibilities, such as athletes study new techniques, and can apply a studied form for a new manner faster. However, such a division is good when the difference between partners is big (weight or high), or on the exam. In a training process, it is better to stick to traditional principles of usual changing the partner and working with different weight and high.

The purpose in jogging was not achieved by all the sportsmen because the fact of peculiarities of high weight and problems with knees were not counted from the very beginning. Nevertheless, after having found an ideal norm in jogging for

every athlete, we noticed that the level of endurance grew in many times and no one of the participants of the experiment left running after the end of it. That is the main aim of non-professional sports – a healthier nation and healthy lifestyle.

#### References

1. Zagura, F. Model characteristics of qualified wrestlers-judokas. Young Ukrainian sports science: Coll. of scientific articles in the field of phys. culture and sports. Lviv, 2001. Vol.5. Issue.1. p. 329-331.
2. Plakhtii, P., Bosenko, A., Makarenko, A. The Physiology of physical Exercises. Kamyanets-Podilskiy. Drukarnya Ruta Ltd., 2015. 268.
3. Krutsevich, T., Theory and methods of physical education. Methods of physical education of different groups of population. Kyiv. Olimpiyska literature, 2012. Issue.2. 392.
4. Boguszewski, D., Suchcicka, B., Grzegorz Adamczyk, J., & Białoszewski, D. The functional efficiency and incidence of injuries in men practicing aikido. Pilot study. Journal of Combat Sports & Martial Arts. 2013, Vol. 4 Issue 1, p. 67-73.
5. Douris, P., Chinan A, Gomez M, Aw A, Steffens D, Weiss S. Fitness level of middle age martial arts practitioners. Br J Sports Med 2004; 38: 143-147.
6. Faggianelli, P., & Lukoff, D.. Aikido and Psychotherapy: A Study of Psychotherapists. Who Are Aikido Practitioners. Journal of Transpersonal Psychology, 38(2), 2006. 159-178.
7. Saotome, M. Aikido and the Harmony of Nature. Boston & London: Shambhala Publications Inc., 1993. 251 p.
8. Ueshiba, K. The spirit of aikido. 1st ed. Kodansha International. 1984; 128 p.
9. Vodicka, T., Pieter, W., Reguli, Z., & Zvonar, M.. Isokinetic strength of the wrist in male aikido athletes. Ido Movement for Culture. Journal of Martial Arts Anthropology, 16(2), 2016. 48-54.
10. Zetarak, M. N., Violán, M. A., Zurakowski, D., & Micheli, L. J.. Injuries in martial arts: A comparison of five styles. British Journal of Sports Medicine, 39(1), 2005. 29-33.

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Амшеннікова І.В.,  
канд. н. фіз. вих. і спорту,  
доцент, Класичний приватний університет

#### ВИЗНАЧЕННЯ ЕТАЛОННОЇ МОДЕЛІ ВИСТУПУ НА ДИСТАНЦІЇ 100 М СПОСОБОМ БАТЕРФЛЯЙ НА ОСНОВІ АНАЛІЗУ РЕЗУЛЬТАТІВ ОЛІМПІЙСЬКИХ ЧЕМПІОНОК 1996-2021 РОКІВ

У сучасному спортивному плаванні, де гострота конкуренції занадто висока, першочергове значення набуває вміння спортсмена застосувати раціональний техніко-тактичний варіант пропливання дистанції та обрати вірну стратегію виступу у головних змаганнях сезону або олімпійському циклі. У плаванні спортивний результат залежить від тактичної майстерності спортсмена, вміння побудувати хід змагальної боротьби, а також від індивідуальних психічних якостей плавця. Основною складовою частиною тактичної підготовки у плаванні є вибір раціональної індивідуальної схеми подолання дистанції та її реалізація незалежно від дій основних конкурентів. У статті представлений аналіз тактики проходження дистанції 100 м вільним стилем Олімпійськими чемпіонами 1996-2021 років. При аналізі фінальних запливів на дистанції 100м батерфляй увага приділялась часу подолання першої та другої половини дистанції та їх різниці, а також кількості виконаних гребкових рухів.

**Ключові слова:** олімпійський чемпіон, плавання, 100 м спосіб батерфляй, гребки, змагання, олімпійськи ігри, модель.

**Amshennikova I. V. Determination of the reference model of performance in the distance of 100 m butterfly based on the analysis of the results of the Olympic champions of 1996-2021.** In modern swimming, where the intensity of competition is too high, the ability of the athlete to apply a rational technical and tactical option of swimming the distance and choose the right strategy to perform in the main competitions of the season or the Olympic cycle is of paramount importance. In swimming, the sports result largely depends on the tactical skills of the athlete, the ability to competently build the course of the competition, as well as on the individual mental qualities of the swimmer. The main component of tactical training in swimming is the choice of a rational individual scheme of overcoming the distance and its implementation regardless of the actions of major competitors. The article presents an analysis of the tactics of passing the 100 m butterfly the Olympic champions of 1996-2021. When analyzing the final swims at a distance of 100 m butterfly, attention was paid to the time of overcoming the first and second half of the distance and their difference, as well as the number of performed rowing movements. The performances of the champions of the 1996-2021 Olympic Games are analyzed, taking into account the time in the first and second half of the distance, the difference between two equal segments and the number of motor cycles. The reference model of swimming in the 100 m butterfly formed by us will give coaches the opportunity to focus on the "time corridors" of the elite model of men's sprinters when planning the training process.

**Key words:** Olympic champion, swimming, 100 m butterfly, rowing, competitions, Olympic Games, model.

**Постановка проблеми.** В плаванні дуже важливим фактором, котрий сприяє перемозі та покращенню результату вважається раціональний розподіл зусиль, а саме: рівномірність проходження дистанції (мінімальна різниця між другою та першою половиною дистанції); застосування оптимальної кількості рухових циклів (гребків) та багато