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Specific Adaptations to the Performance Judoka

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Abstract: The strong link between physiological adaptations of Romanian judo athletes who are preparing for high performance and the technical skills of the athletes, is often difficult to determine and assess. Judo is a sport in which strategy and technique are dominant in obtaining performance, while the physiological characteristics and their parameters form the basis on which the judoka athlete builds his technical performance and individual tactics. The research subjects are components of judo Olympic teams from Romania, male and female. Methods of assessing anaerobic and aerobic exercise capacity are used. The research results on the effects of adaptive anaerobic efforts capacity allow emphasizing the ability on short, intensive, but with maximum expression of muscle strength, for this type of sport. The papers conclusions demonstrate the importance of adaptive effects that occur in the athletes who were investigated, regarding the efforts of anaerobic and aerobic effort capacity as an effect of intense training, specific for competitive strain, during a judo match, especially during overtime training in those cases where the final decision was not taken in regular time - five minutes. Top Romanian judoka athletes, are characterized by high values of muscular strength and power, especially in the superior parts of the body (Nurkić et al., 2009). Ideally, the judoka athletes should maintain an optimal ratio between physical preparation and technique, through an optimal combination of technical and physical shape. Maintaining the optimal ratio between the trainings components and the physical preparation, ensures the most effective outcomes for obtaining high performance.

Keywords: *Judo, training, physiological adaptations, high performance.*

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1. Introduction

In recent years, many studies show that athletes judokas show the ability to adapt to very intense efforts, unusually high strength, responsiveness and high-speed performance and a high level of coordination (Hantau & Bocioaca, 1998, p. 110), position and balance (Sale & Jacobs, 1990). Olympic-recognized judo, the world-wide Olympic discipline, practiced all over the world, in all ages, by practicing his outstanding scientific contribution to development practitioners somatic and psychological is considered a very important education (Sterkowicz & Emerson, 2000). Preparing specify complex is determined by this weight categories and many different biomechanical structures, processes practiced in the discipline, issues that complicate training and permanent increase competitive performance. More and more recent research shows the major contribution of somatic-psychic adaptations in terms of the level of relationship of anaerobic demands lactacid judo athletes in achieving victory results in testing high-speed strength, coordination, reaction speed and execution (Sbriccoli et al, 2007).

The purpose of the work is represented by determining the level of adaptation of judoka athletes, performance, anaerobic efforts alactacide, determining cardiovascular adaptations to specific effort, by laboratory methods.

The work objectives have been established to determine the level of research into specific adaptations to the level judoka Olympic team, at national and international level, the establishment which assumptions research, the establishment of research and harvesting subject's specific data, the establishment of assessment methods, harvesting data research, data processing and graphic representation, interpretation of the data research and presentation of findings and the proposals of research. Based on these aspects, in carrying out the work, we considered fundamental hypothesis that specific factors determining the structure of the capacity performance in judo, the interconnection between these indicators, but also the permanent attention of experts in the field (coaches, teachers, methodologists) judo.

2. Materials and method

In order to obtain research data, have been used, methods for assessing the ability of aerobic and anaerobic effort, methods for assessing coordinate, but also methods of assessing techno-tactics and statistical

methods. By the method questionnaire were collected data on determining the relationship between different factors of performance capacity in judo. They have been used in research data provided by Olympic coaches of the Romanian Judo Federation (FRJ). The research subjects are components of judo Olympic teams from Romania, male and female. Research subjects have been assigned during the evaluation, in particular categories of weight as far as different, in order to obtain objective data for each model technical-tactical and physical (Bocioaca, 2008, pp. 51-123). Research subjects have been prepared during the period of research under the same conditions and have received assistant specific technique and similar methods.

3. Results

Data on capacity developments anaerobe, obtained during the test in three stages, initial, intermediate and final, by applying the Test Sargent, shows a significant increase in the anaerobic capacity. Anaerobic capacity increase being recorded in the course of a complete cycle of preparation, when athletes have registered a peak form sporty with great results in international competitions.

Table 1. Data on capacity developments anaerobe (Test Sargent)

No	Name	Prename	Gender	Weight Category in kg	Initial Test Sargent (W)	Middle Test Sargent (W)	Final Test Sargent (W)
1	D	A	F	48	145.18	160.20	160.50
2	C	C	F	57	124.47	131.81	131.11
3	R	S	F	78	150.32	157.21	157.00
4	C	A	F	52	141.97	127.80	140.96
5	C	M	F	48	139.73	156.19	179.36
6	L	A	M	95	162.58	155.86	166.05
7	M	A	F	48	150.32	147.71	148.24
8	P	A	F	48	168.88	166.96	166.89
9	B	R	M	66	125.60	132.36	123.35
10	D	S	F	57	166.34	170.83	172.61
11	F	L	F	52	147.67	153.01	154.36
12	A	D	F	52	143.15	157.84	153.37

13	N	V	M	71	154.70	152.52	165.76
14	B	B	M	100	151.32	169.81	163.15
Mean					144.80	150.58	153.62
Standard Deviation					13.69	14.54	16.28
T -test					0.29	0.60	0.13

The following graphical representations represent the data recorded in the study for the 14 subjects, members of the Olympic team, during the application of the three evaluations (initial, intermediate and final), using the Sargent test.

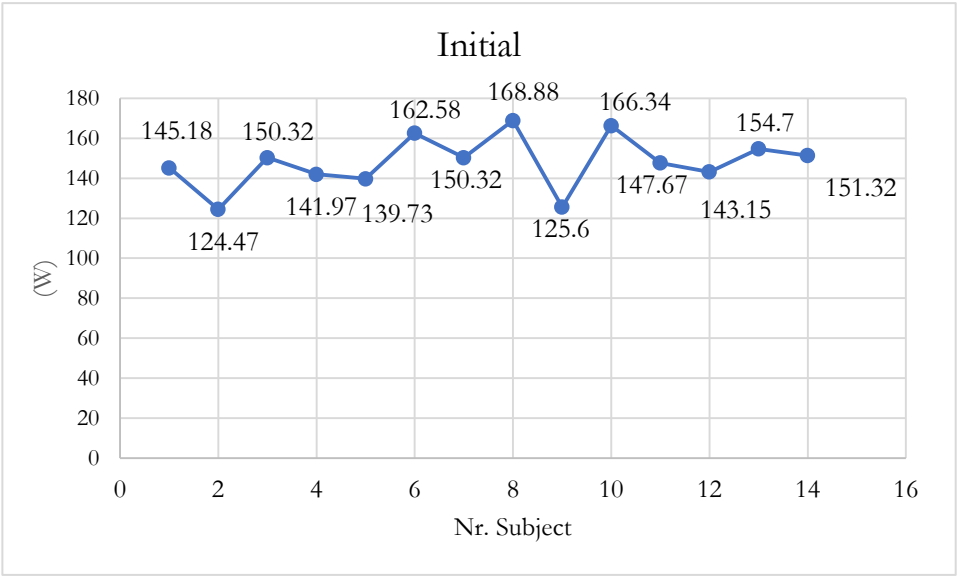


Figure 1. Anaerobic capacity developments at initial testing

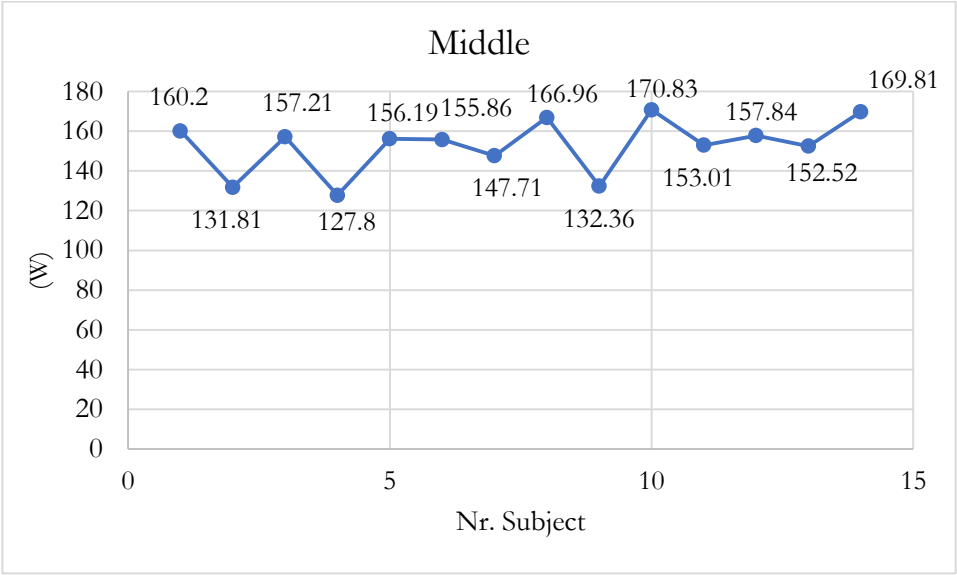


Figure 2. Anaerobic capacity developments at middle testing

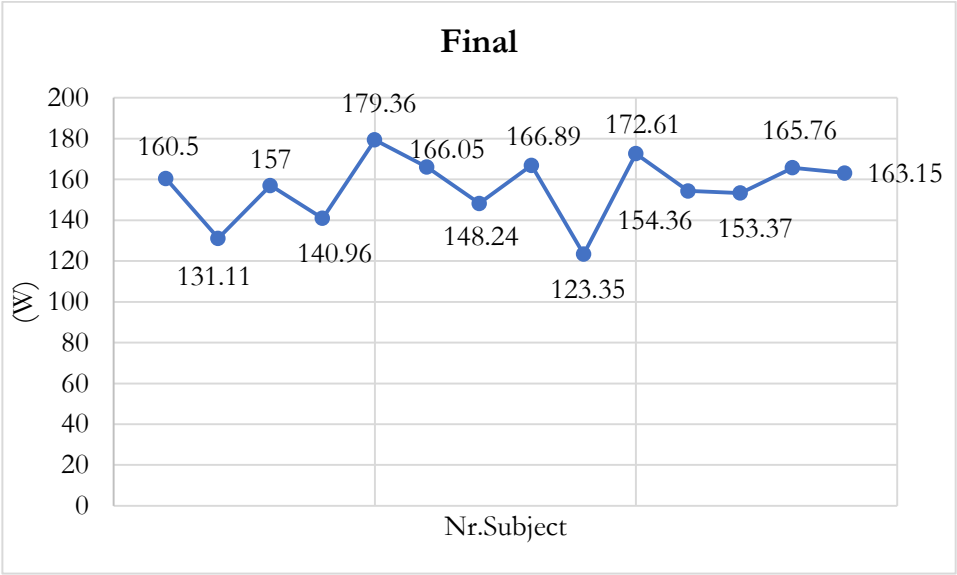


Figure 3. Anaerobic capacity developments at final evaluation

In the following graphic representations, the data recorded and recorded for the evaluation of athletes from different competitive weight categories are represented by compiling the model for the evaluation and

plethysmography analysis. the evolutions of the plethysmography signal during the preparation and of the three initial, middle and final evaluations are highlighted.

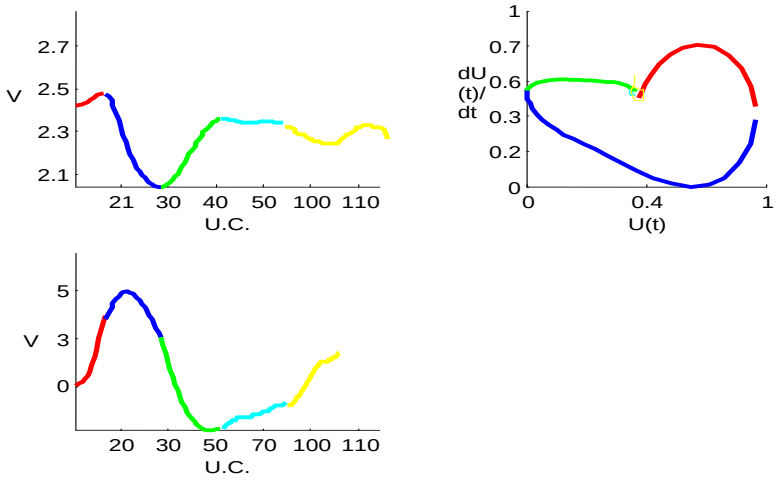


Figure 4. The evolution of model pleth wave signal initially

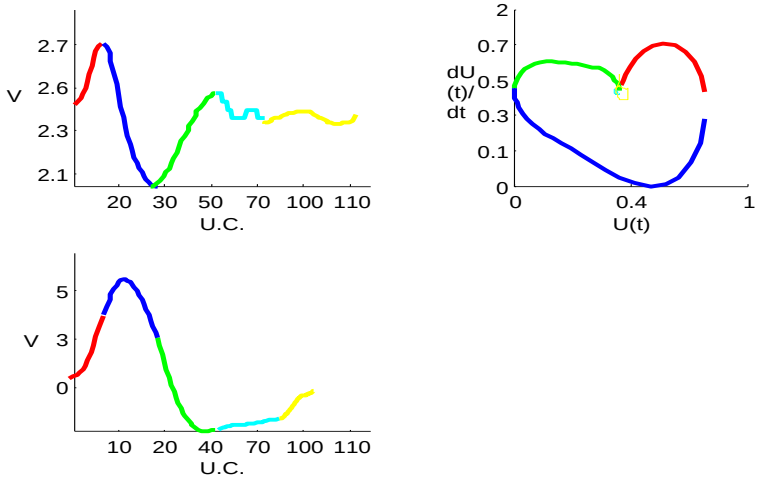


Figure 5. The evolution of model pleth wave signal middle

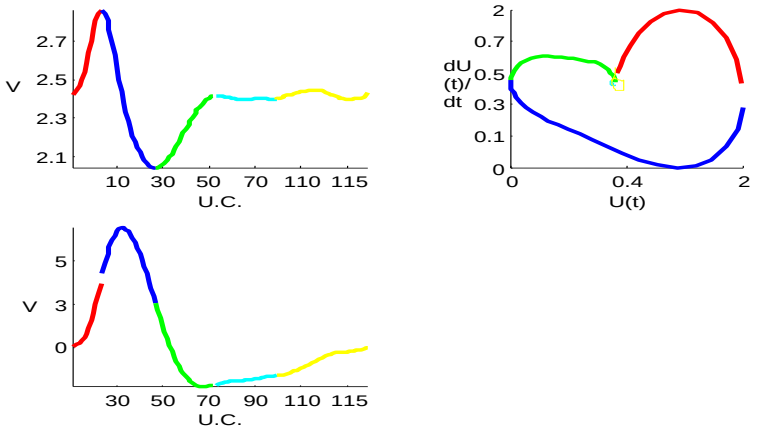


Figure 6. The evolutionary structure of pleth signal modeling at the end of the research

4. Discussions and conclusions

The data recorded by the evaluation of the athletes included in the research carried out by us, during the period of the study, show us the statistically significant increases, in terms of the volume of effort made. The accommodation of the athletes to the anaerobic efforts is supported by the significant changes of the values registered for the tests applied especially the Sargent method, with the average values of 144.80W, 150.58W, 153.62W. The data entered for the analysis of the results by the T-test method, show us a representation, with significant increases for all athletes evaluated at the end of the research by the graphs presented by the pleth signal, variability significant between subjects, under the same experimental conditions as well as of the various behaviors circulatory belonging to the same body in two standardized conditions. Significant increases in capacity of the effort and the adjustments to anaerobically, circulatory, as demonstrated by the two tests are recorded at all subjects, as a result of specific efforts of judo, based on working with very large currents and loads raised.

Acknowledgements

Data obtained by us, on semnificate increases anaerobic capacity and aerobic capacity, performance sportsmen judoka, are confirmed by similar research (Franchini et al., 2007), showing important physiological adaptations specific shape, in order to obtain high performance sporting in judo (Sterkowicz & Emerson, 2000).

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