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The Application of Bioresonance Diagnostics Using Electrical Stimulation of Meridian Systems in the Preparation of Wrestlers

Shaira Payzieva,¹ Davon Djmaniyazov,² and David G. Curby³

ABSTRACT. Athletes are better at their sports today than they have ever been, and much of the improvement can be attributed to an increased focus on training and preparation. Every trainer wants his or her trainee to succeed among best. To achieve set objectives, the trainer raises expectations of the sportsman's efforts in order to yield high results. However, can an athlete's organism take psychological and physical loads, or does he or she have such potential that will unlock and release resources without harms to health and without resulting in psychological trauma? Operational control of the functional state of sportsmen is an integral part of the training process. Existing methods provide little information or control and can be time-consuming, which limits their widespread use in the sport. The authors aimed to study the use of complex parameters and adaptive capacity in the training cycles of training athletes. The purpose of this research includes estimating the psychophysiological state of wrestlers, by employing a software/hardware complex that uses electropuncture diagnostics and stimulation of biologically active points, which reveals latent pathology of body systems, and possible referral of the athlete to a doctor for more timely treatment. The authors describe their process and results, as well as give recommendations for improving athletes' health.

Keywords: physiology, psychology, sports medicine, training control

Evaluating the psychophysiological condition of athletes during the training process requires efficient assessment, and correction at all stages of preparation, including actual sports competitions. High sports results demand a performance of loadings of large volume and high intensity. Every trainer wants his or her trainee to succeed among the best. To achieve these intended goals, the trainer increases the efforts of the sportsman to supramaximal levels.

However, the questions remain: Can the sportsman's organism (especially in the juvenile period) tolerate these psychological and physical forces, and can the trainer unlock and make use of resources without any harm to the health and psyche of the athlete? These problems are to be

solved proceeding from intuitive and professional abilities of the trainer and key assistant—a doctor in sport medicine (Bichkova, Kusova, & Haustova, 2013; Filimonova & Yaitskaya, 2013; Svetlyakova & Pavlov, 2013).

The idea of the electrical stimulation of acupuncture points and body electromagnetic signals diagnostics on the basis of the measured meridians system that estimate the physiological and psychological condition of the human's organs and systems has been debated. Examples in the literature have indicated that the Eastern medical concepts involving meridians are based on no more than the placebo effect (Brown, 1998; Skrabanek, 1989; Smith & Fryer; White, 1998). It includes the opinion that the methods could not be replicated by another scientist and thereby do not meet the minimum standards of a scientific publication.

Some recent research has shown the contrary assertion. Several studies (Ahn & Martinsen, 2007; Ahn et al., 2008; Fico, Duchon, & Dubravsky, 2014; Khorsand et al., 2015; Yang, Liu, Kuai, & Gao, 2006) have demonstrated that the methods could be replicated by another scientist. Reproducibility has been shown by authors from different fields of science (Kolomiets, 2004; Korniyukhina, 2005; Rusinov, 2009).

¹Newmax Technology, Tashkent, Uzbekistan

²Tashkent Medical Academy of Uzbekistan, Tashkent, Uzbekistan

³Curby Research Group LLC, LJWS, 1719 W. 60th Street, La Grange, Illinois, 60525, USA

Correspondence should be addressed to Shaira Payzieva, Newmax Technology, 7a St. B. Babaev, Tashkent, Uzbekistan 100100. E-mail: shairapayzieva@gmail.com

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We propose to apply an innovative technology that uses a software/hardware unit based on of the electropuncture diagnostics of the functional status of the human body for doctors in sports medicine. We used the Register of Functional and Emotional Status (ROFES) device (Altam; Yekaterinburg, Russia). This diagnostic tool was used in this study to estimate the psychophysiological condition of athletes as a method of training control. This diagnostic method aims to detect health problems before their manifestation as symptoms. It allows one to intervene when the disease begins to develop and helps to avoid more serious problems.

Sports medicine personnel have the flexibility to survey a sportsman's health state frequently—before, during, and after training, constantly observing objective results of the work. This allows one to analyze and forecast a sportsman's organism reserves.

Depending on the type of sports training there can be differential responses by the various body subsystems. Study of these responses to sports training can allow an individual to find new ways of increasing the efficiency of the training process. Research and studying of separate elements as a part of system of sports training allows an individual to find new ways of increase of efficiency of training process. Sports training represents a complex and dynamic system consisting of a set of the interconnected elements that together function as a unit and are subordinated to one purpose—successful performance of the athlete at competitions.

This research aimed to test the psychophysiological state of wrestlers through the use of the ROFES complex to assess the status of various body systems and provide electric stimulation at biological active points and give recommendations for improving and enhancing athletic performance. Such research allows one to uncover latent pathology of bodies and systems and to send the athlete to the doctor to the expert for timely treatment.

We have determined that the most appropriate medical acupuncture diagnostic methods are those that deal with a person as a single whole system and provide the most complete picture of one's personal functional health state. In this study, we have applied the method derived from Nakatani (1956) and his topology of measured sites. This Ryodoraku measurement method measures the magnitude of the current at 24 representative points of 12 meridians to evaluate the fatigue, excitement, relaxation, or disturbance of internal organs.

In Figure 1, the frequency spectrum of the lung's meridian biological active point is shown. Every column (oscillation) represents a certain frequency that is a part of the point's oscillation signal generated as a result of assessing influence measuring current provocation (assessed point's signal oscillation can be seen in the process of assessment on the indicator that shows this process). Along the horizontal axis are the frequency rates (in this case, low frequencies from 0.2 Hz to 14 Hz). Along the vertical axis are the rates of these frequencies' energetic intensity (column height).

For normal functioning of a living object of a system, the reaction on current provocation (i.e., normal adaptation to

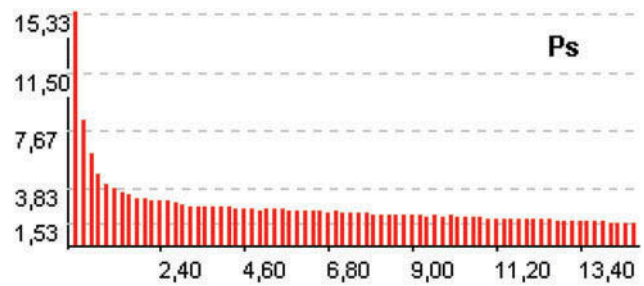


FIGURE 1 The frequency spectrum of the lung's meridian at the Biological Active Point.

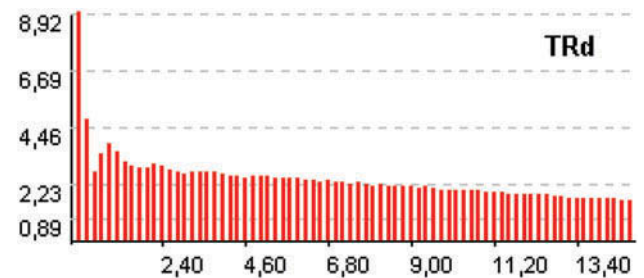


FIGURE 2 The frequency spectrum from the triple heater's meridian Biological Active Point.

current) must look on the spectral diagram as gradual decrease in columns (oscillations) from the beginning of the diagram up to its end (from 0 Hz to 14 Hz on the horizontal axis), the fading process. This decrease looks like a kind of exponential curve if all the peaks are joined. Each column is lower than the previous one from left to right.

Figure 2 shows a clear tendency of the exponential rule breaking at the beginning of the figure.

All cells, organs, bones, muscles, and tissue vibrate at their own rate or frequency and in complete harmony and make up the Body Energy Field. Therefore, the whole body has a complex frequency makeup that can change or become distorted when affected by illness or toxic substances.

Bioresonance makes use of the body's own electromagnetic signals, alters them, and then feeds them back into the body as therapy to restore health or combat illness. Designed methods enables flexibly to survey a sportsman's health state all the time—before physical loads, in process, and after training, constantly observing objective results. This allows trainers to analyze and forecast a sportsman's organism reserves. Also, it provides determining a psychological compatibility in a group.

METHOD

Participants of this study were 30 wrestlers (6 women, 24 men). All athletes were between 15 and 28 years old. The electropuncture diagnostics were carried out using the

methods described in 1973 by physicist Ivan Andreyevich Lednev (see “Atlas of Acupuncture Points of I. A. Lednev”) who developed much of the technology for the ROFES unit used in this study, as well methods from the Ryodoraku electropuncture (Nakatani, 1956).

We used the ROFES complex to detect and measure the psychophysiological responses of the wrestlers. The following integral characteristics are automatically determined:

- The functional state is the total of the somatic status’ components and psychoemotional background rated on a 5-point scale (excellent, good, satisfactory, unsatisfactory, recovery is needed);
- The person’s adaptation potential (%); readiness to fulfill his or her functions;
- The vegetoemotional tone is the need of receiving and giving energy;
- Wrestlers’ psychoemotional portrait according to acupuncture diagnostics results;
- Storage and display of individual and group test results; and
- Reflection of the alterations of recipients’ test results across time.

RESULTS

Table 1 shows the total average of integral estimations, including the adaptive potential, functional state, vegetoemotional tone, psychoemotional status, and sympathic/parasympathetic activity ratio of all participants in the study. Adaptation potential is the rate of the body’s harmonious state as a balance of an athlete’s inside states—physiological and mental—in response to environmental conditions.

There are five categories of adaptation potential:

- 0 ÷ 29%: Recovery is needed
- 30 ÷ 54%: Unsatisfactory state
- 55 ÷ 69%: Satisfactory state
- 70 ÷ 84%: Good state
- 85 ÷ 100%: Excellent state

TABLE 1 Total Average of Integral Estimations of All Experiment Participants

<i>Average adaptive potential</i>		25.9%
Functional state	Satisfactory: 23% Unsatisfactory: 28% Recovery is needed: 36% Good: 13%	
Vegetoemotional tone	67.8%	
Psychoemotional status	Balanced: 73%	
Sympathetic/parasympathetic activity ratio	Balanced: 74% Sympathicotonia: 14% Parasympathicotonia: 12%	

The results of this study (Table 1) show an average adaptation potential of participants of a very low 25.9%, which corresponds to “recovery is needed.” This situation requires further analysis of these findings to develop specific recommendations to improve the adaptation potential of wrestlers.

The same situation was found in the results of functional state: 36% of wrestlers were classified as “recovery is needed.” A person’s functional state is the total of components of the body’s medical (clinical states) and its psychoemotional background. If this state lasts for a long time, it may lead to a total loss of the body’s own resources and, as a result, may cause disease, mental disorder, or emotional breakdown. Trainers should take into account these results and organize rehabilitation and recovery procedures for these athletes.

Functional State of Organs and Systems of Wrestlers

Results of diagnostics through the ROFES complex pointed out that an increment in activity of hypophysis is measured in 57.8% and sympathicotonia in 61.2% in these wrestlers. Functional tension of the thyroid gland was observed at 7%; in our opinion, it derives from the ecological characteristic of the natural region, with a deficit of iodine. Deficit of specific microelements (F, Ca) were attributed to be the cause of onset latent inflammation of the mucous membrane of the mouth cavity in 64.70% of wrestlers. Water and electrolyte imbalance caused a disorder in the conductivity of nerve impulses in 54.70% of the participants, and we suspect it is related to the lack of an adequate diet. This can lead to myalgia and, from time to time, muscular spasms. Stigmatization of cerebral tension were monitored in 27.3% of wrestlers, which is associated with constant brain trauma.

Three types of overloads to the spine were indicated: intervertebral disks in 24.6%, thoracic spine in 29.7%, and lumbosacral area in 64.5% of wrestlers. In 18.4% of these wrestlers were symptoms of neurocirculatory dystonia, which can be reflected in the functional activity of vital organs such as the lungs and the cardiovascular system. On the basis of the aforesaid, 49.3% of the wrestlers demonstrated symptoms of functional tension of heart. In 33.8% of athletes, a chronic, inflammatory processes of the upper airways, and ear, nose, and throat organs were noted: 7% with vasomotor rhinitis and 12% with tonsillitis that is reflected during continuous physical trainings and can lead to a syndrome of endogenous intoxication.

In half of the athletes (53.2%), disorders of the immune system that affect indicators of adaptation potential were noted. Symptoms of spastic colitis were observed in 41.1% of athletes, which can be possibly connected with the ecologist climatic condition and food of the region.

Psychological Profile of Wrestlers

Every third wrestler accurately has his or her own vital problem, and it was noted that every tenth athlete had

psychological signs of persistence and self-affirmation. In addition, 50% of athletes were seen to possess signs of high self-esteem, which is necessary to consider in sports occupations. In almost all athletes, symptoms of neurosis or irritability were noted. Obvious stress was seen in 15% of athletes, and excessive intellectual loadings were noted in 12% of athletes.

CONCLUSIONS

1. Vegetoemotional tone in a third of the wrestlers was low.
2. The functional state in 8 wrestlers unsatisfactory and demands rehabilitation: correction in the structure of sports training and in the diet.
3. Almost all athletes have symptoms of neurosis or irritability, and only half have high self-esteem.

This study has shown that the application of an automated diagnostic tool such as the ROFES unit, can be effective and simple diagnostic method, which should be more frequently applied in functional and psychoemotional examinations among wrestlers, as well as in an estimation of recovery therapy effectiveness.

Recommendations

1. For effective training, wrestlers need to choose a balanced high-calorie and high-quality diet. The trainer needs to adjust physical loads in a planned order, considering the physical capacities of each athlete.
2. Individualized therapy programs, using a variety of modalities, should be used to increase resistance to stress.
3. The organization of the training plan should include consistent monitoring of the wrestler's health state before, during, and after trainings and a correction of his or her psychological and physiological state.

FUTURE PLANS

To meet the demands of competing at the highest levels of competition, the initial opportunities of athletes must be balanced and individualized as they progress to extreme training loads. One approach to increasing the productivity of the training process in wrestlers must focus on musculoskeletal response, and in particular on the vertebral and motive segments. Combined with the measures directed to the prevention of the development of pathological processes

in the relevant areas of the spine, this approach should also take into account the prevalence of its injury in wrestling.

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