

THE ST. PETERSBURG ARMY MEDICAL ACADEMY

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**A Report on the Medical Trials of the AIRES Matrix Applicator for
Treating the Human Body Biological Active Points and Zones (the
BAPs and BAZs) Designed by the AIRES New Medical Technologies
Foundation, St. Petersburg, Russia**

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1. General

The medical trials of the AIRES Matrix Applicators were carried out on the basis of the following papers:

- The decision of the commission on devices and equipment for rapid diagnostics of the human body's functional state by the physiological indices of the reflex zones and the biological active points and for reflexotherapy in the BAP and BAZ to conduct the clinical trials of the AIRES Matrix Applicator (Report #3 as of July 14, 2000). The commission was established by the New Medical Engineering Committee, the Russian Federation Ministry of Public Health.
- A report #ATHJI 0.009.2081 on the conducting of the acceptance engineering tests of the AIRES Matrix Applicator as of August 21, 2000.
- A conclusion #63-2000 concerning the toxicological and sanitary-chemical trials of the AIRES Matrix Applicator as of February 17, 2000.

2. The Place and Date of Performing the Trials

Research Laboratory #4 at the Psychophysiology Department, the St. Petersburg Army Medical Academy. The trials were performed between August 22, 2000 and September 29, 2000.

3. A Description of the AIRES Matrix Applicator

The AIRES Matrix Applicator designed for treating the human body's biological active points and zones (the BAPs and BAZs) is a 0.1 mm thick self-sticking polyester film bearing a high-symmetry pattern on its outside; the width of the graphite line is 50 micrometers; the unit module of the pattern measures 26.4×26.4 mm. The Applicator can be affixed to the BAPs and BAZs, the skin projections of the internals, and painful points. The Matrix Applicator's therapeutic effect is achieved by local passive correction of the human body's superweak electromagnetic radiation that is altered as a result of a disease. The correction is carried out by the arrangement of the symmetric graphite circuits applied to the outside of the Applicator. The AIRES Applicator can be used both in medical institutions and in home environment in accordance with the user instruction.

4. The Purpose, Method, and Procedure of the Medical Trials

The main purpose of the investigation was to evaluate the medical and service qualities of the AIRES Applicator.

To perform the trials, the AIRES Foundation provided the following items:

- The AIRES Matrix Applicators: 2000 items
- A User Instruction

- The performance specification for the clinical trials of the AIRES Matrix Applicators

The investigation was performed in the out-patients department. Two groups of male volunteers aged between 20 and 35 were involved in the investigation: the experimental group (16 volunteers) and the control group (5 volunteers). The volunteers had suffered a persistent psychoemotional stress and more than once made complaints about chronic fatigue and decreased working ability. In the experimental group, the AIRES Matrix Applicators were affixed in compliance with the “A” Standard Application Scheme; the exposure was from six to eight hours a day. The application course included three series of six days each alternating with one day’s interval. The volunteers in the control group (placebo-group) underwent treatment with the clear film base, with no matrix pattern applied to it and in compliance with the same application scheme.

Different experimental procedures were involved during the investigation:

- Recording of the volunteers’ spontaneous bioelectric brain activity patterns (EEG)
- The evaluation of a person’s integral mental potential (the switching mental arithmetic test, the Landolt rings test, and the Munster test)
- The evaluation of a volunteer’s emotional status (the Spielberg-Hanin situation anxiety test)
- The evaluation of a volunteer’s main nervous processes (the reaction on moving objects (ROMO) test, the compound sensory-motor reaction (CSMR) test, the tapping-test)
- Filling up by the volunteers an inquiry on their overall condition (state of health, activity level, mood)
- Total clinical blood count
- Biochemical blood analysis
- The blood viscosity test

The above tests were carried out prior to the investigation, then after the first six-day application series, and also on completion of the third six-day application series. The evaluation of the hemorheologic and biochemical indices of the volunteers’ blood samples was carried out on the same schedule and, in addition, in three weeks after the last application. The total number of tests was more than 500.

5. The Results of the Investigation

Concerning the state of the spontaneous electric activity, the volunteers were divided into two types: the “ideal norm”-type and the type with a state of moderate dysrhythmia. After six days of the application, the EEG examination revealed no reliable variations in the volunteers’ EEG parameters as compared to those of the volunteers’ initial state. However, certain variations that could be characterized as “stable tendencies” were revealed. On completion of the entire application course, the tendencies held out and resulted in reliable variations in the volunteers’ bioelectric activity, which differed depending on the type of a volunteer’s initial EEG. No change in the volunteers’ spontaneous brain activity was observed in the “placebo” group. The

effect of the application therapy appeared to be favorable for the volunteers' brain activity and consisted in normalization of the EEG-pattern and EEG frequency-amplitude indices in the volunteers who initially displayed the dysrhythmic EEG-type, and in EEG shifts toward deactivation in the volunteers who initially displayed the "ideal"-norm EEG-pattern.

To judge by the variations in the volunteer's background EEG, we can conclude that the therapy brings about transformation of the bioelectric activity of the brain, depending on the duration of the application treatment, and that the character of the variations is determined by a person's initial EEG-pattern, and consequently by the initial functional state of the person's central nervous system.

The investigation of the dynamics in the main nervous processes (the excitation and inhibition) with the aid of the CSMR test method revealed that the application therapy exerted a positive effect on the sensory-motor indices and the attention ability of the volunteers who displayed the dysrhythmic EEG-type, resulting in:

- Increase in the volunteers' CSMR indices;
- Harmonization of the volunteers' working capacity profiles;
- Increase in efficiency of the volunteers' attention test performance;
- Improved ROMO test performance results.

To evaluate the effect of the application therapy, the volunteers' attention function as the most labile and sensitive of the psychic functions was tested with the aid of the Landolt rings method and the Munsterberg test. The Munster test, in turn, revealed no reliable difference between the attention range of the experimental group and that of the "placebo" group. The Landolt method revealed that the stability of the volunteers' attention, and the volunteers' ability to switch attention decreased on completion of the application course, with the "activation" phase impaired to a large extent.

The variations in the volunteers' psychophysiological indices were found to correlate with the volunteers' reports on their state during the experiments. By and large, in the experimental group, a reliable increase in the volunteers' indices of their general state, activity and mood, as well as a tangible decrease of the volunteers' reactive anxiety, was revealed as soon as after six days of the application. These variations were found to hold during the whole period of the investigation. However, a drop in general activity, and a slight drowsiness during daylight hours were noted in six cases in the experimental group. These sensations were more pronounced in the first phase of the investigation (during the first days of the application); later on, they became less pronounced.

Thus, the results of the investigations conducted show that the application therapy must be employed with regard for the initial level of the functional state of a patient's central nervous system. This kind of therapy is most beneficial for persons with cognitive psychic functions depressed due to chronic fatigue.

The investigation revealed that the patients' hemorheologic parameters underwent certain variations under the resonance therapy (see Table below). In this respect, it is worth noting that:

1. The effect exerted by the resonance correction technique was less pronounced (or even did not appear at all) with persons who displayed more optimal hemorheologic indices at the start of the investigation (group 2), than with persons who displayed higher blood viscosity indices (group 1).

2. The volunteers' blood viscosity indices were found to change as soon as during the first week of the application therapy, the effect being more pronounced on completion of the therapy course.

3. In three weeks after completion of the application therapy, the indices of the physical properties of the patients' blood differed to a most degree from those of the initial state.

4. No evident changes in the "placebo" group volunteers' hemorheologic indices were noted.

Table

Hemorheologic Indices Dynamics during the Application Therapy ($X \pm m$)

Index		Group 1 (n=7)				Group 2 (n=5)			
		Prior to the Treat-ment	In One Week after the Start of the Treat-ment	In Three Weeks after the Start of the Treatment	In Three Weeks after the End of the Treatment	Prior to the Treat-ment	In One Week after the Start of the Treat-ment	In Three Weeks after the Start of the Treat-ment	In Three Weeks after the End of the Treatment
Blood Viscosity, MPa*sec	Shift Rate 1 sec ⁻¹	58,1±1,0	57,2±1,1	55,8±1,2*	55,2±1,3*	56,1±0,8	56,2±0,7	56,0±0,7	55,2±0,5
	Shift Rate 9 sec ⁻¹	16,5±0,9	16,2±0,5	15,9±0,5	15,2±0,5(*)	15,0±1,0	15,2±0,3	15,1±0,8	15,0±0,4
	Shift Rate 25 sec ⁻¹	12,6±0,2	12,5±0,4	11,0±0,5*	10,2±0,3**	10,4±0,4	10,5±0,5	10,2±0,5	10,2±0,2
	Shift Rate 100 sec ⁻¹	9,3±1,2	9,5±0,8	9,3±0,8	9,0±0,4	8,0±0,2	8,1±0,2	7,9±0,4	7,8±0,2
	Shift Rate 256 sec ⁻¹	7,9±0,3	7,9±0,4	7,2±0,1*	6,8±0,2**	7,0±0,2	7,1±0,4	7,0±0,4	6,8±0,3
Erythrocyte Deformation Index, conventional units		1,35±0,03	1,39±0,07	1,48±0,03*	1,55±0,04**	1,28±0,03	1,31±0,02	1,28±0,02	1,26±0,03
Blood Plasma Viscosity, MPa*sec		13,8±0,7	13,5±0,6	12,7±0,3*	12,2±0,4**	12,7±0,3	13,1±0,4	13,0±0,2	12,3±0,2(*)

Note that (*) means that the variations are $p < 0.1$; *— $p < 0.05$; **— $p < 0.01$ as against the values of the pre-treatment indices.

The lowering concentration of cholesterol, total protein (largely due to globulin fractions) and creatinine in the blood serum was the most positive effect of the application therapy with regard to metabolism and blood rheology of the persons of both of the groups, with the most shifts registered in the last test, i.e., in three weeks after the completion of the therapy. During the application therapy, the hematocrit level was found to tend to lower in the patients of both of the groups, which was manifested by a decrease in the aggregation coefficient as well as in the number of large and multidimensional aggregates.

The variations in the structure of the biochemical composition of the patients' blood due to the application therapy may be an indirect evidence that the patients' stress-reaction decreased, all kinds of metabolism optimized. A general improvement in the functional state and working capacity was revealed in the majority of the patients.

6. The Main Conclusions from the Results of the Medical Trials

The psychophysiological variations, and the variations in the parameters of the internal medium of the human organism that were registered during the application therapy suggest that the stress-reaction of the organism decreases, and disadaptation disturbances are removed. So this technique can be used as one of the components of a complex of measures aimed at prevention and treatment of adaptation diseases. However, to introduce the AIRES Applicators into the medical practice, appropriate application recommendations should be worked out.

The AIRES Matrix Applicator for treating the BAPs and BAZs of the human organism designed by the AIRES New Medical Technologies Foundation, St. Petersburg, Russia, can be recommended to the New Medical Engineering Committee, the Russian Federation Ministry of Health, as to the question of the commercial production and the use in the general medical practice.

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