



RESEARCH ARTICLE

COMPARATIVE STUDY OF THE IMMEDIATE STRESS-RELIEVING EFFECT OF  
AURICULOTHERAPY WITH SOFT LASER AND NEEDLES (NADA/BATTLEFIELD) WITH  
RESPECT TO WESTERN AND ORIENTAL MEDICINE A RANDOMIZED,  
PLACEBO-CONTROLLED, DOUBLE BLIND CLINICAL TRIAL

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ARTICLE INFO

Article History:

Received 24<sup>th</sup> March, 2018

Received in revised form

20<sup>th</sup> April, 2018

Accepted 18<sup>th</sup> May, 2018

Published online 30<sup>th</sup> June, 2018

Key words:

Ear Acupuncture,  
Auriculotherapy, NADA, Battlefield, Stress,  
Prolactin, Cortisol, Meridian-Diagnostics,  
Soft Laser.

ABSTRACT

**Background:** Our research in 2015 verified the immediate stress-reduction effect of the NADA 5-point protocol with needles. **Objective:** The primary aim of the research was to discover whether the NADA 5-point ear acupuncture therapy with soft-laser (biostimulation) method has significant stress-reduction effects that can be verified regarding prolactin(PRL) and cortisol(CORT) levels, as well as to discover if that effect is stronger than the effects gained by informal talks in the control group. Our secondary goal was to research the placebo effect and also we tried to investigate into the importance of exact localization (of auricular points). That is why we compared our results with those of a Battlefield control group. (In effect it meant, comparison among specific and non-specific points.) **Materials and Methods:** A randomized, double-blind, placebo-controlled trial was conducted at the Széchenyi Health Center in Budapest, Hungary. 110 patients were included in the study: 22 in an experimental test group and 88 in control groups (e.g. 4x22 persons). Volunteering students and workers aged 20–70 were included. Ear acupuncture treatment was performed on 5 points: Shen Men, Sympathetic, Kidney, Liver and Lung. Each blood sample was taken between 2 and 4 pm twice from the same person. The starting and ending points of the 12 main meridian pairs of the body were measured with the MeriDiM® screening device (SCR). **Results:** As a result of the soft laser 5-point acupuncture treatment, both stress hormone levels were reduced significantly, which verified the stress-reduction effect. **Conclusions:** It was possible to attain a significant stress-relieving effect by laser acupuncture proved by hormone levels (PRL, CORT) according to Western medicine, and by SCR (Skin Conductivity Response) as Oriental medicine goes. The results obtained by 'sham' laser pointed out how important the healing attitudes and expectations of the healer are, as well as the patients' hopeful behaviour regarding the outcome of the healing process.

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**Citation:** István Széchenyi, Zsuzsanna Antal and Gabriella Hegyi, 2018. "Comparative study of the immediate stress-relieving effect of auriculotherapy with soft laser and needles (NADA/Battlefield) with respect to Western and Oriental Medicine. A randomized, placebo-controlled, double blind clinical trial", *International Journal of Current Research*, 10, (06), 70632-70639.

INTRODUCTION

For decades scientists have been investigating the methods of stress-level reduction, the techniques to minimize stress (Varvogli, 2011). In 1958 Dr János Selye defined the concept of stress as being „the spice of life”. He arrived at the conclusion that stress is the non-specific reaction of the organism to strain. The word stress derives from Latin 'strictus', meaning 'strict'.

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DOI: <https://doi.org/10.24941/ijcr.31061.06.2018>

Dr Selye's famous statement, „a stress-free condition means death” refers to the fact that it is entirely impossible to be completely devoid of stress. He pointed out that stress has a healing effect as well. People may be influenced by positive impacts (e.g. love) and the result is positive stress, while distress is an aversive state caused by the harmful, negative kind of stress. Stress can be positive, negative and trivial and is defined as complex reaction to environmental demand and pressure (Selye, 1956). Based on the assessment of the perceived danger, the human organism reacts with different defence strategies (Lazarus, 1984). According to Hilton (Hilton, 1975), our central nervous system (CNS) produces integrated combatting reactions rather than one-off, isolated

versions of response. Thus, when hyperarousal seems to be feasible, mammals show an increased autonomous and hormonal activity, which maximizes the possibility of muscular strain (Cannon, 1929). The outcome caused by stress, and the resulting reactions may vary owing to personal and environmental factors. Depression, anxiety or the development of PTSD conditioned by hard times, a disaster or a trauma, may have personal risk factors such as the earlier psychiatric history, neuroticism, feminine gender or other socio-demographic variables (Green, 1996; Madakasira, 1987). Chronic stress is accountable for the development of numerous disorders, such as anxiety, panic, migraine, indigestion, sexual disorders, psychosomatic diseases, e.g. stomach and duodenal ulcer, hypertension, heart attack, diabetes, allergy, asthma, hair loss, period disorders, infertility, impotence or a tumor, etc. (Greenberg *et al.*, 2014). The measurement of stress hormone levels such as cortisol, can help identify the stress-specific changes in the organism, the development of disorders caused by stress in people prone to it, and find efficient intervention for reducing stress levels. Cortisol, as one of the most important peripheral outputs of the stress reaction system, has a number of characteristics, which make measurements extremely useful in examining stress (Baum, 1997). Cortisol is a glucocorticoid produced by the adrenal cortex. It is a hormone of crucial importance in stress reactions, in hyperarousal. A stress reaction starts from the hypothalamus and it takes about 10 minutes for the peripheral cortisol to perceptibly increase (Sapolsky, 2000). This increase of the cortisol-level has an unanimous, clinically proven effect on health (Aschbacher, 2011). Prolactin is a hormone produced by the pituitary gland, present in men and women alike. Dopamine is the main chemical regulator of prolactin secretion, and hinders its secretion from the pituitary gland (Fitzgerald, 2008). Several factors may influence the level of prolactin in the serum, which, owing to stress e.g. can be fairly high even in normal physiological processes. Different stress factors will change the prolactin level in the human serum. Due to the environmental regulation occurring simultaneously with the stress element the prolactin level can either increase or decrease. Due to stress, izoleucin peptides, vazopressin and histidin trigger prolactin secretion. Lennartson *et al.* (Lennartsson, 2011) discovered that no significant difference can be demonstrated in the changes of women's and men's prolactin levels. PRL and cortisol are measurable markers of two different physiologic strategies for coping with psychologic stress (Sobrinho, 2003). Based on Sobrinho *et al.*'s research it is interesting to note the significant negative connection between the high level of PRL and CORT and their agents. While PRL can be associated with anger and humiliating memories, cortisol is related to surprise, shocking and terrorising events (Sobrinho, 2003). Acupuncture derives from the Latin words: „acus” and „punctura”. Its Chinese name is Zhen Jiu, meaning: „prick” and „burn”. In a broader sense it suggests that this kind of therapy is meant to influence the general state of the body by stimulating the skin (Széchenyi, 2017). Acupuncture is one of the oldest and very important therapeutic procedures of Traditional Chinese Medicine (TCM) (Andersson, 1995). Likewise, ear acupuncture is another diagnostic and therapeutic method, attainable by the stimulation of certain points on the ear. Nogier elaborated his system and published his method of ear acupuncture in 1958. In 1973 Wen H.L. *et al.* used this method first in treating opiate-based drug dependence (Wen, 1973). The NADA protocol was created by Michael Smith in 1985.

He used it to alleviate withdrawal symptoms, to reduce/stop craving for the drug. The standard NADA ear acupuncture points are: Shenmen, Sympathetic, Kidney, Liver and Lungs. (Smith *et al.*, 1982) (Figure B). The psychotherapeutic effect of NADA points was confirmed too. Smith *et al.* demonstrated it in seven psychological symptoms: depression, anxiety, anger, body pain and headache, concentration and weakness (Kenneth *et al.*, 2011). Dr Széchenyi *et al.* proved the immediate stress relieving effect of NADA in 2015 (Széchenyi *et al.*, 2015). The Battlefield ear acupuncture protocol was developed by R. Niemtow to be used as a fast pain reliever. ASP semi-permanent needles are used to stimulate the following points in the ear: Cingulate Gyrus, Thalamus Point, Omega 2, Point Zero and Shenmen (Richard, 2007) (Figure A)

According to the research, the pain relieving effect of Battlefield acupuncture was significant, however it was supplemented by medicine and it only lasted for 48 hours (Moss, 2015). In our research the low-lever laser therapy (LLLT) laser acupuncture (LA) serves as a replacement for acupuncture with needles as it doesn't cause pain, and its simple use also makes it accessible to those who are afraid of needles. Low-performance laser induces a mild stimulus and has an almost equal effect to that of needle-therapy on the affected area. Laser biostimulation is linked with the name of Dr Endre Mester, who is of Hungarian origin. He observed and published that the fur of epilated mice grew faster in the areas where their skin had been regularly stimulated by low intensity laser light. Mester's publications on the biostimulatory effect of low intensity laser began in 1967. This procedure later spread all over the world. Some researchers adopted sham laser in the form of acupuncture therapy, as a control procedure of needle acupuncture (Mester, 1967). In 1979 Zhou, a Chinese surgeon successfully used laser acupuncture to anaesthetize, instead of needle acupuncture or acupressure. The first studies about laser acupuncture were published by Steitz and Kleinkort in 1984 (Seitz *et al.*, 1986). Throughout the following years they developed several different laser instruments.

**Skin Conductivity, acupuncture and screening devices:** Acupuncture points are well separable formation on the skin, having special properties. These properties include increased conductivity (Reichmanis, 1978; Reichmanis, 1975; Hyva`rinen, 1977), reduced impedance and resistance, increased capacitance (Litscher, 2009; Litscher, 2009), and elevated electrical potential (Gori, 2001; Wen, 1973), compared to non-acupuncture points.

Kellner, the Viennese histologist examined the acupuncture points in 11 137 histological samples and found that they are objective formations. With his biopsy he revealed that in little circles around the points which are a few mms in diameter, the number of different nerve filaments (Meissner corpuscles, Krause bulboid corpuscles, Glomus Organs, smooth muscle cells), is significantly bigger than in the areas surrounding those circles (Johannes Bischof, 1997). Measuring and monitoring skin resistance of acupuncture points dates back to the 50's, to the independent work of Nakatani (1950), Niboyet (1958), and Voll (1975). Nakatani (1956) developed the Ryodoraku theory. The MeriDiM® device used in our trial operates according to the Ryodoraku principles. In our case it measures skin conductivity in start- and end-points of the 12 pairs of meridians (there are 24 main meridians altogether) in the following manner: it measures the conductivity of acupuncture points with 12 V voltage compared to a neutral

electrode, assigning a value between 1-200 to them. The values are proportionate to the conductivity between the acupuncture points and the neutral electrode and is measured in microampere current.

## MATERIALS AND METHODS

**Ethics Statement:** The authors started to perform the research having obtained “Trial permission: 362/2015.06.20 /PTE ETK local ethical committee.” The work described in this article was carried out in accordance with the Code of Ethics of the World Medical Association (Declaration of Helsinki) for experiments involving humans. Subjects provided written informed consent before participation in the study.

**Participants:** The research involved 110 healthy volunteers who were grouped randomly into 5 categories (with 22 persons in each category). There were 1 research and 4 control groups ('sham laser', 'talking', 'film viewer' and 'Battlefield'). The criteria for the volunteers: age between 25-60, working or studying adults (void of pregnancy or any endocrinological issue). All volunteers were tested based on and according to their own serum prolactin levels, cortisol levels and skin conductivity of whose data had been recorded. The gender ratio in the different groups were as the following: The Experimental group: ages 41±13; 12 females (54%, 43.8±14) and 10 males (46%, 38.3±12.4). The 'Sham laser' group: total ages 39.5 ± 13.4; 13 females (59%, 40.9±12.4) and 9 males (41%, 38.5±14.7). The „Film” group: total ages 37.8 ± 14.6; 16 females (73%, 36.4±15.4) and 6 males (27%, 41.5±16.6). The „Talking” group: total ages 35.9 ± 13.9; 13 females (59%, 36.9±13.9) and 9 males (41%, 38.8±14.2). The „Battlefield” group total: ages 35.2 ± 15.9; 15 females (68%, 33.9±17.0) and 7 males (32%, 38.0±14.2). To better understand the results, we used 4 control groups:

The 'Sham laser' group aimed at detecting placebo effects regarding hormone levels (serum PRL and CORT) and SCR.

- The 'Talking' group aimed detecting at the effects of social support and informal talks which are known to reduce stress levels.
- The 'Film viewer' group was needed to elicit stress responses from the viewers watching shocking and fearsome content capable of arousing negative emotions (with a difference made between 'fearsome' as fiction or non-fiction. - Green and Rakosky 1973).
- The 'Battlefield' group, who got ear acupuncture treatment with needles, was needed because we tested for the possible differences between the effects of soft laser and needle treatment of specific and non-specific acupuncture points of the ear.

**Exclusion Criteria:** Pregnant women and patients with endocrinologic disorders were excluded from the study.

**Research process:** The 'Experimental group' received a 5-point auricular soft-laser treatment (with 400 mW output and 8 sec = 3,2 Joule/ point). Before and after the treatment the volunteers underwent a blood test (measuring the prolactin and cortisol level) and an SCR diagnosis. Following the laser treatment, between the 2 blood tests and the SCR diagnosis, the Experimental group members spent an hour talking informally. The 'Sham laser' control group seemingly received the same treatment as the test group with the difference that the

soft laser device did not emit laser light – so they got a placebo treatment. The 2 other control groups (the 'talking' and the 'film viewer' ones) spent the 60 minutes' test period differently between the 2 blood tests and the SCR diagnosis. The 'talkers' spent a nice hour with conversing friendly, meanwhile the 'film viewers' watched a rather shocking movie (Extreme Healers, a 50-minute documentary). The members of the 4th control group, named 'Battlefield' group received a 5-point auricular treatment (with needles 0,3 x 13 mms) taking in consideration the „Battlefield acupuncture points”, and underwent a prolactin and cortisol serum level blood test and SCR diagnosis before and after the treatment. The Experimental and Control group members alike were so informed that what was measured was the detoxification process during the 60 minutes between the lab tests. All participants filled in and signed the information and consent forms. Blood testing and measurement of PRL and CORT levels: each blood sample was taken between 2 pm and 4 pm. One tube of blood was taken at a time (2 tubes altogether) from each patient; serum PRL, CORT levels were measured by an enzyme-linked immunosorbent assay (ELISA) test (Human ELISA kit, Abbotte). Normal PRL hormone levels are 53–360 mIU/L for males, and 40–530 ng/mL for nonpregnant females. The 'Battlefield' acupuncture control group received auricular treatment by 0,3 x 13 mm needles on the ear points defined with the Battlefield protocol.

**Measurement:** MeriDiM®, a digital measurement device based on the Ryodoraku theory (manufactured by Natural-Med Ltd, Hungary) was used in this study. The average and the standard error of such values were determined and expressed as „Mean<sup>+</sup> - STD” for statistical analysis.

**Soft laser device:** The type of the laser: 500 mW (manufacturer: István Gulyás, Hungary), 808 nm, 3B laser class. Mode of operation: continuous or 10 Hz amplitude modulation. Power supply: 550 mA max.

**Hypothesis:** Based on previous patient narratives, we had assumed that auricular treatments could reduce stress. Our research was aimed at testing whether we could prove it that significant prolactin and cortisol reduction in the blood, which would support earlier subjective reports with value results.

**Acupuncture treatments:** In our experiment the localization of the 5 acupuncture points of the 5-point ear-acupuncture treatment had been based on the 191 points of the Széchenyi ear map: 1st point – Shen-men (nr 1); 2<sup>nd</sup> point - Sympathetic point (nr 21); 3<sup>rd</sup> point – Kidney points (nr 167); 4<sup>th</sup> point – Liver point (nr 148); 5<sup>th</sup> point – Lung point 108 (Szechenyi, 2009). The above points correspond to the points of the NADA (National Acupuncture Detoxification Association – USA) protocol. As there is no standardized nomenclature for ear acupuncture, the 191 point Széchenyi map and the Széchenyi Orientation Ear map (Szechenyi, 2017; Szechenyi, 2018) helped acupuncture specialists to identify and exactly localize the 5 points to be treated either with needles, or with genuine or 'sham' laser. Whereas if we examine several NADA maps marking the 5 points, a pretty large dispersion can be observed as to their localisation. The primary aim of the present study is to ascertain whether or not the 5 point, soft laser NADA protocol has a significant stress reducing effect. Furthermore we examined the importance of exact localization, that is whether or not it is always essential to insert the needles in the most precise places.

**Statistics:** Data were analyzed with a t-test and a Wilcoxon test (using SPSS 15.0 software). The variance of changes for means were calculated according to the error propagation law. The level of significance for the analyzed values was  $P < 0.05$ .

## RESULTS

110 individuals participated in the research, all of whom were a good fit for the tests. The decrease in serum PRL (prolactin) level reached the utmost degree in the Experimental group, from 8.586 ng/ml to 6.632 ng/ml. It means a significant change of 22.8 % ( $p = 0.001385$ ), occurring an hour after the soft-laser treatment, as opposed to the initial reading. The serum CORT (cortisol) level decreased from 9.321 ng/ml to 6.463 ng/ml, that is, there was a 31% reduction, which was a significant change ( $p = 0.00006$ ). The average values of MeriDiM®  $\mu A$  values were: from 44.47 microampere they decreased to 38.39  $\mu A$  compared to the initial reading ( $p = 0.202390$ ). The serum PRL level decreased in the placebo 'Sham laser' group as well, but to a lesser degree than in the treated group, from 8.025 ng/ml to 6.463 ng/ml, which meant a 19.5 % significant change ( $p = 0.001656$ ). The average value of serum CORT level decreased from 10.883 ng/ml to 7.134 ng/ml. It meant a 34% significant change ( $p = 0.000006$ ). The average microampere values changed as follows: there was a decrease from 49.00 to 45.53, which meant in an 7% non-significant reduction of the initial reading an hour after the sham treatment ( $p=0.049456$ ). The members of the first control group ('Talking group') didn't get any treatment, they were told to talk freely together, nevertheless their serum PRL level changed as well, but this change was of a substantially lesser degree than the changes in the Experimental and Placebo groups. With the first measurement the average PRL level was 7.054 ng/ml, and an hour later it changed to 6.123 ng/ml, which meant a 13.2% significant decrease ( $p = 0.01817$ ). The average of CORT level changed from 11.405 ng/ml to 8,359 ng/ml, meaning a 26.8% significant decrease ( $p = 0.01817$ ). The microampere averages measured in the acupuncture points were the following: there was a 13.6% decrease from 51.50 to 44.06 ( $p = 0.00595$ ). The participants in the second control group did not get any treatment, they were asked to watch a shocking film ('Film group'). In their case the CORT level decrease was 16%, the values changed significantly ( $p = 0.030535$ ) from 9.875 ng/ml to 8.252 ng/ml. In this same group the PRL level increased 1.7%, from 7.177 ng/ml to 7.298 ng/ml. At the same time, the change within the group did not yield a significant result ( $p = 0.094529$ ). Regarding the skin conductivity data the microampere average changed 16% from 52.160 to 43.008  $\mu A$ , so the result was not significant either ( $p = 0.094529$ ).

The members of the third control group received the Battlefield 5-point ear-acupuncture treatment ('Battlefield group'). Within an hour after the treatment the average of PRL level had hardly changed at all, it only decreased from 8.934 ng/ml to 8.787 ng/ml ( $p = 0.506772$ ), the CORT level attained a minimal, 5.2% decrease, from 9.798 ng/ml to 9.283 ng/ml, ( $p = 0.697248$ ) however this change was not significant, either. The  $\mu A$  averages measured in the acupuncture points were the following: there was a 20% significant decrease from 40.290 to 32.270 ( $p = 0.020772$ ). Regarding the changes of PRL serum levels, significant correlation were found between the treated group and the 2nd control group ( $p = 0.047149051$ ), as well as between the treated Experimental group and the 3rd control group ( $p = 0.018202985$ ).

Examining the inter-group results of CORT serum levels, it was found that there was a significant correlation between the Experimental and the 'Battlefield' control group ( $p = 0.018095637$ ).

## DISCUSSION

The aim of our research was to get answers to the questions raised in the introduction. In the accelerated world of the 21st century, the significance of stress and its harmful effects have become more and more prominent. Oriental and Western medical sciences, with their particular means are committed to searching for solutions with regard to options for healing. Starting from the accounts of both patients and therapists in clinical practice according to which patients are more relaxed, less apprehensive, less hostile and incongruous, and become more receptive, their aggression reduced after the treatment, saying things like: „I'm relaxed", „I could fall asleep", „It feels as if I didn't have any problems", „my head has just cleared up". As early as 2015, Széchenyi *et al.* (21), proved through our experiments, that needle acupuncture had an immediate stress relieving effect, but at the same time, due to the development of technology, the use of LA (laser acupuncture) was gaining ground. Since completely painless, it is more readily accepted by patients (not to mention children, as in their case LA is the only means that may be considered). Laser acupuncture – replacing needle acupuncture – was a stimulus therapy as used by us. Generally speaking, laser acupuncture has wavelengths between 405 nms and 904 nms (Round *et al.*, 2013). For our experiment we used a 808 nm, 500 mW output infrared diode-laser with a laser beam, having 400 mW output. We examined three aspects of the results. The two hormones, PRL and CORT gave feedback according to Western medicine, while the values of the MeriDiM® microampere measurements provided theirs from the point of view of Oriental medicine. Our results clearly proved significant decreases in both the PRL and CORT serum levels and skin conductivity, produced by the NADA 5-point soft-laser treatment, and the stimulation of ear-acupuncture points in the case of a 22-member experimental group. In a previous research Smith *et al.* (40) showed the psychological effects of the NADA 5-point treatment on a visual-analogue scale, so stress reduction caused by it was not surprising. Regarding proportional values in with this experimental group, the largest decrease was shown in CORT values, followed by the reduction in PRL level, leaving the microampere values of MeriDiM® last.

In the first control group, the one treated with 'sham' laser, there was a significant decrease in the PRL and CORT levels, and also in skin conductivity, however compared to the experimental group the decrease was somewhat lower in the case of PRL level, and somewhat higher for CORT, while the level of skin conductivity remained almost the same. These figures assert the placebo effect reinforcing the importance of treatment circumstances and the therapist's empathetic, trustworthy approach. Concerning the second control-group, the one watching the shocking film, the PRL level considerably increased instead of decreasing, while the CORT level significantly decreased. This reinforces the result of the Sabrino-research, that is, in case of stress the two hormones do not react to the same stimuli. PRL responds to humiliating ones, while CORT reacts to sudden fright. In the case of CORT self-defensive mechanisms may have come into force (Sobrinho *et al.*, 2003).

**Table 1. Intragroup Changes Serum Prolactin, Cortisol Levels and MeriDiM  $\mu$ A Averages Measured in the Experimental and Control Groups**

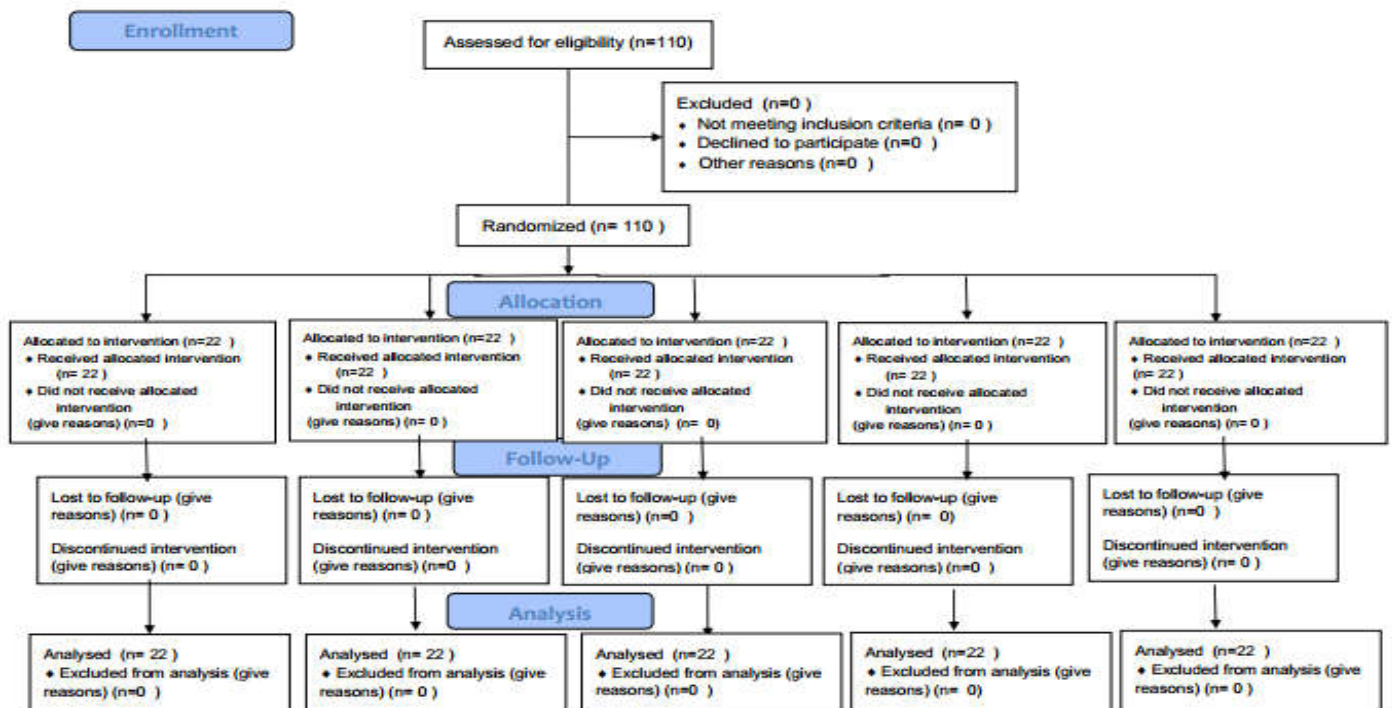
	PRL before (average) ng/ml	PRL after (average) ng/ml	p value	CORT before (average) $\mu$ g/dl	CORT after (average) $\mu$ g/dl	p value	MeriDiM before (average) $\mu$ A	MeriDiM after (average) $\mu$ A	p value
Experimental group (n=22)	8,59	6,63	0,001669	9,32	6,46	0,000060	44,47	38,39	0,202390
Sham control group (n=22)	8,02	6,46	0,001656	10,88	7,13	0,000006	49,00	45,53	0,049456
"Talking" control group (n=22)	7,05	6,12	0,018170	11,41	8,36	0,000158	51,50	44,06	0,005950
"Film" control group (n=22)	7,18	7,30	0,889597	9,88	8,25	0,030535	52,16	43,86	0,096349
"Battlefield" control group (n=22)	8,93	8,78	0,697248	9,80	9,28	0,506772	52,16	42,20	0,020772

\*P < 0.05 is statistically significant.

**Table 2. Intergroup Changes Between Experimental and Control Groups (PRL, CORT and MeriDiM® values)**

	Change in (before & after values) in PRL (ng/ml)	P-value	Change in (before & after values) in CORT ( $\mu$ g/dl)	P-value	Change in (before & after values) in MeriDiM ( $\mu$ A)	P-value
Experimental group (n=22)	1,95		2,86		6,08	
Sham Group (n=22)	1,56	0,574435	3,75	0,30129	3,47	0,806394
Experimental group (n=22)	1,95		2,86		6,08	
"Film" group (n=22)	-0,12	0,047149	1,62	0,17859	8,30	0,857641
Experimental group (n=22)	1,95		2,86		6,08	
"Talking" group (n=22)	0,93	0,124329	3,05	0,83213	7,44	0,795809
Experimental group (n=22)	1,95		2,86		6,08	
"Battlefield" group (n=22)	0,15	0,009206	0,52	0,01810	9,96	0,759919

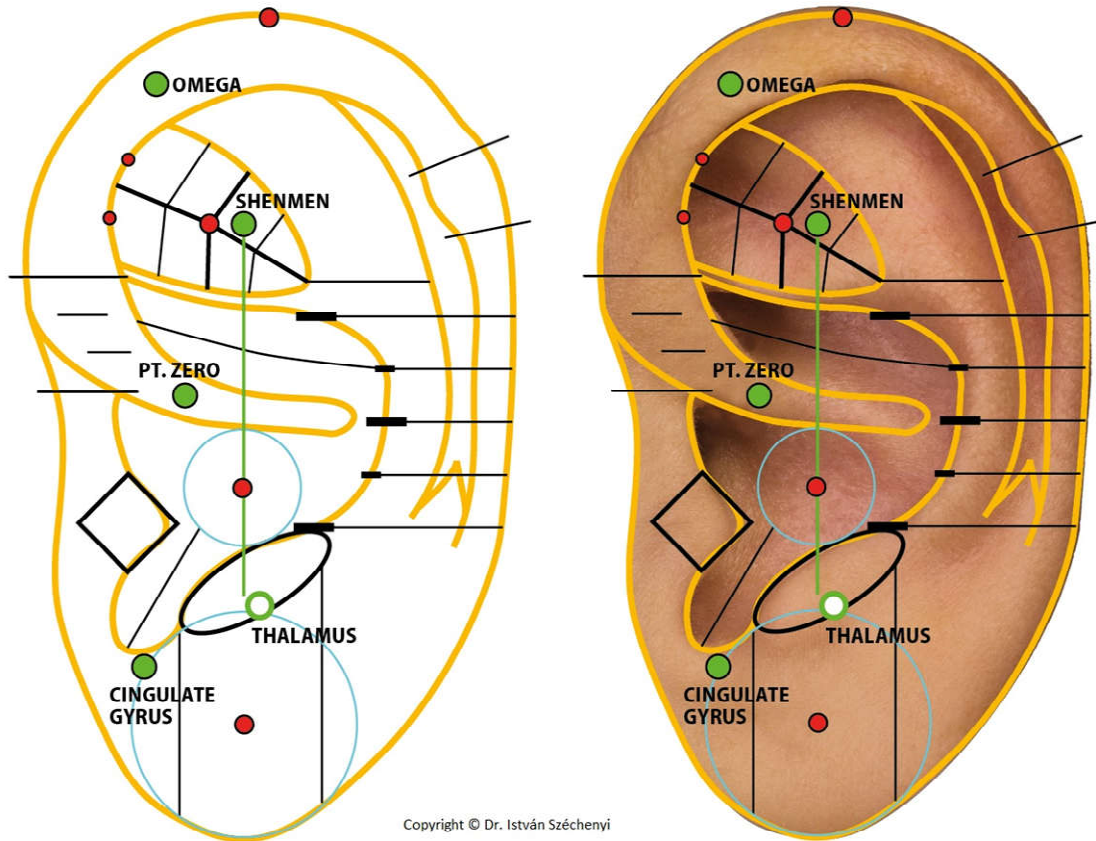
P < 0.05 is statistically significant



As it is known, the real psychic 'immune system' is the defence mechanism defined by Anna Freud (1895-1982) based on his father, Sigmund Freud's work. The results of the 'Film' control-group are not significant. Skin-conductivity in this group considerably, but not significantly decreased, therefore in this group we can only speak of tendencies. The 'talking' control-group presented an interesting aspect of the research who getting supportive backing, had their PRL and CORT serum levels decreased, but it was not significant. It is well-known that in such cases the produced dopamine decreases stress-level (other stress-level reducers are: eating, smoking, sex, etc.)

We created a 'Battlefield' control-group to find out how important the exact localization of the needles is, in order to get a full-scale picture in our research, since in this case we did not use specific points in our treatment. As a result, in the 'Battlefield' control group there was hardly any change in the PRL and CORT hormone levels. So we managed to refute the sceptics' statement that 'wherever we insert the needles, the results will be the same, the exact location doesn't matter'. Simultaneously the MeriDiM® values in our earlier research (Széchenyi *et al.*) significantly decreased, similarly to the NADA acupuncture treatment. It can therefore be stated that the process started from the point of view of energetics,

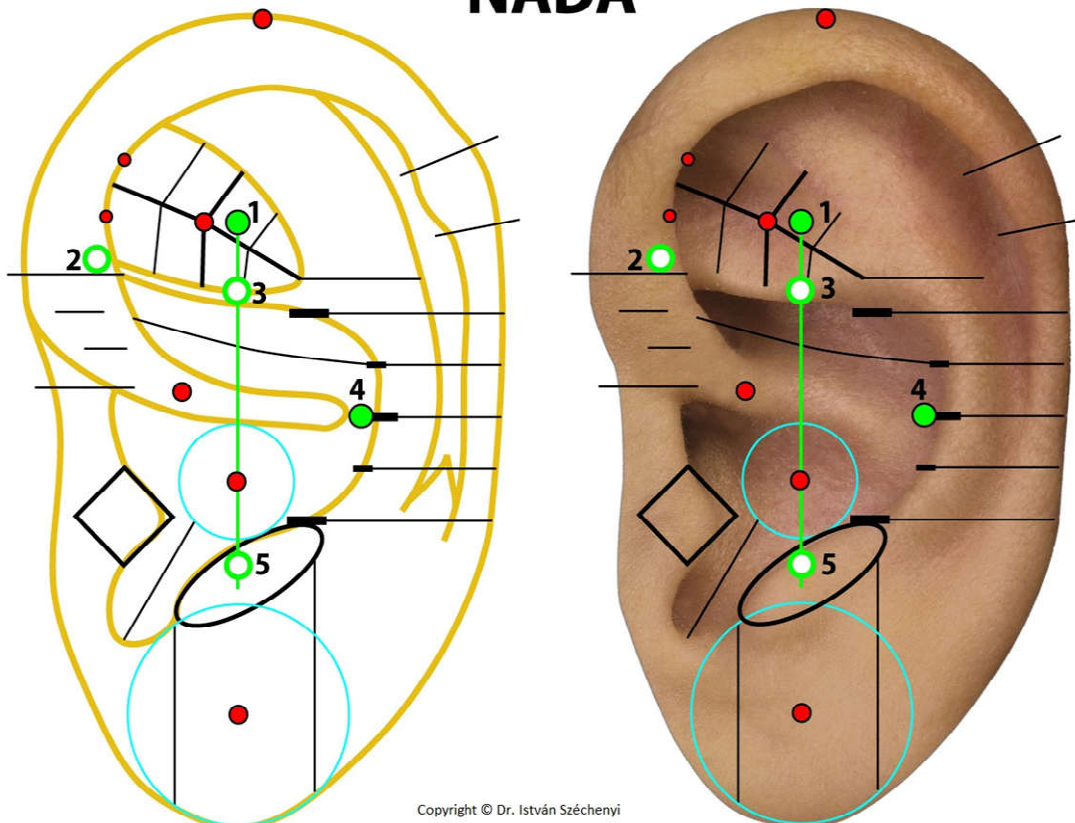
# BATTLEFIELD



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Figure A. Battlefield points

# NADA



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Figure B.NADA Points: 1. Shenmen, 2. Sympathetic, 3. Kidney, 4. Liver, 5. Lung

however it has not manifested itself yet. Consequently the needles must be exactly localized, we cannot speak about zones.

## Conclusion

The research draws attention to the importance of the exact localization of acupuncture points. It is underlined by the hormone reactions gained from treating the specific (NADA) and non-specific (Battlefield) points. If localization is not exact, the effect will fail to come about. The patient will be disappointed, that his/her condition has not improved, and the therapist will feel uncomfortable that he/she is not able to help. It was possible to attain a significant stress-relieving effect with laser acupuncture as well, which was proved by hormone levels (PRL, CORT) according to Western medicine, and by SCR as Oriental medicine goes. The results obtained by 'sham' laser pointed out how important the healing attitudes and expectation of the healer are, as well as the patients' hopes regarding the outcome of the healing process.

**The limits of research:** The experiments were done with healthy individuals, and we got the answer on how the NADA 5-point and the Battlefield 5-point acupuncture affected the PRL and CORT serum levels as well as SCR. The aim of our further research should be to discover how these methods can be applied in treating certain types of illnesses and also how they work in those cases. The low number of participants in the experiment samples (there were only 22 participants in a group), set up certain statistical and theoretical limits, but the results are encouraging and have paved the way for further research. Another issue worth considering is, why the Battlefield treatment didn't decrease the two stress hormones (PRL and CORT) while they decreased the 'talking', and the 'sham' laser groups, although the protocol was applied in the same place and at the same time.

## Acknowledgment

The authors extend grateful thanks to Imre Bakó D.Sc and Karoly Heberger, PhD (Cand Sci.) D.Sc.T.Prof., for the statistics.

**Disclosure statement:** The authors have no conflicts of interest to declare.

**Funding Statement:** The authors received no specific funding for this work.

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