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## FEATURE ARTICLE

### Electro-Acupuncture as a Screening Method Compared with Conventional Diagnosis and Therapy

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*In this lecture, presented at the 3rd Heel U.S. Symposium in March 1988, Dr. Maiwald traces the theory and history of electro-acupuncture testing. In addition to listing benefits of such methods, he enumerates points of criticism directed towards electro-acupuncture testing.*

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## Introduction

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Diagnosis and therapy in conventional medicine are based on two principles: firstly on the symptoms to be eliminated, and then on the morphological findings to be identified. The notion of disease is based on cellular pathology, i.e. on the idea that every disease is determined in the cells or organs, that its impact is morphologically identifiable, and can be demonstrated as a morphologically understandable change. In 1862 Rudolph Virchow first established this theory of cellular pathology in Würzburg, and stated that disease can only be explained in terms of the morphological condition of the constituent material of the cells or organs, and that the process in question is a localized one. In its diagnosis and therapy, a biological medicine bases its assumptions on disease as a process. Such a process begins well before the emergence of findings that are understandable in morphological terms, and commences with a change in the biochemically and cybernetically controlled steady states in the mesenchymal basis substance of the human system. According to the results of research carried out by Alfred Pischinger and Gottfried Kellner, such changes present responses to stress stimuli, in the sense of humoral pathology, and these can be of a material, energetical and informative nature. This view is based on the notion that all disease has its own dynamics, that it begins with an interruption in normal functions, and that it has its effect in an

energetic and cybernetic sense in a disruption of the humoral, neuronal, hormonal regulatory systems (the basic regulatory system according to Pischinger/Kellner or the greater defense system of Hans-Heinrich Reckeweg) even before morphological changes in cells or organs become identifiable. Such a change in the energetical and cybernetic state of equilibrium can be determined in the measurable change in the state of equilibrium of such systems, in their altered capability to respond to stimuli in the sense of hyperergia, hypoergia or blocking. Along with other biophysical test methods, the diagnostic therapeutical process of electro-acupuncture provides us with a method that, assisted by a measured stress stimulus, can be used to test the humoral, neuronal, and hormonal control system before morphological findings can be proven. It is probably no longer possible to state with any certainty why electrical measurements were first introduced as an aid to medical diagnosis. This may have been the result of efforts to obtain information about electrical phenomena in the organism in general. Certainly the intention nowadays seems to be to replace invasive methods by non-invasive methods for examination of the regulatory process. With the exception of ECG, EEG and electromyography, bioelectrical measurement methods are still not commonly used in medicine. No easy explanation can be found for this. However, we may presume that one contributory factor has been the existing fragmentation of electrical methods of measurements on the skin into a number of different techniques. In addition this process has led to the evolution of a separate, non-clinical language for explaining the results of measurements. For a long time this language was neither precise nor easily understandable. Nevertheless, there is no doubt that one underlying factor behind the development of this process

has been the desire to establish, by non-invasive means, the degree of disorder in the organism as a whole, or the impact of disease in a particular organ, thereby obtaining a specific statement about regulatory capabilities, contrasting with the non-specific information provided by normal laboratory methods. The electro-acupuncture system is applied to the skin and uses measurement made at various acupuncture points on the skin. It should be noted that sometimes neural and vascular correspondence of electro-acupuncture with the organs or systems cannot be described either in terms of structural, anatomical elements, or by neurology or through the observations of tissue displacement obtained in embryology or pathology. Nevertheless this does not detract from the value of this method, which has already been determined empirically. As a physical method the application of electro-acupuncture is based on a biological model, and involves the determination of three parameters: the potential as a bioelectrical voltage, the resistance, and in the case of alternating field measurements, as capacity too.

In considering the use of electro-acupuncture as an aid to diagnosis it is important to realize that the readings that are obtained reveal nothing on their own. However, by placing a number of readings in sequence we obtain a structure which can be represented in graph form to provide a visual impression and this enables comparisons to be made. These measurements may be structured spatially and/or in a time sequence: spatially, by using the example of segment measurement, and in a time sequence, with the example of a number of readings at constant intervals, such readings being obtained twice by the same measurement point. Depending on the different ways they are set up, it

is obvious that such differently prepared measurement structures must also be interpreted in different ways. One essential aspect in understanding the basics of electro-acupuncture would appear to be that the measurement current produces a biological change at the point of measurement, and this certainly occurs when the measurement current exceeds the body's own potential of somewhere in the region of +0.9 volts. The electrical measurement is predominantly used under conditions in which a measurement current is obtained through pressure on the subject, and is basically identical irrespective of whether it is carried out using DC or AC current, the only difference being in the readings. In view of this fact it is essential to observe both primary and secondary factors. As a supplement to conventional medical diagnosis methods, electro-acupuncture provides the first opportunity for a functional diagnosis that provides insights into the simultaneous activity of various different organs. In so doing it makes use of the basic experience obtained with traditional Chinese acupuncture. The underlying principle is that there are points at various locations about the body which have a direct relationship to certain organs or groups of organs, and that such organs or groups of organs can be influenced through these points. However, such points are not randomly distributed across the surface of the body, but are arranged in accordance with a specific system. The lines connecting these points are referred to as meridians and can be understood as the paths along which energy flows. Any interruption of these meridians will interfere with certain functions, and the aim of electro-acupuncture is to objectify the results thus obtained. The first reports about acupuncture among the Chinese were provided by the Dutchman Ren Rhyne and the German E. Kaempfer in the 17th century. But it was not until 1951 that Nivoyet finally established that the acupuncture points do in fact have a slightly lower skin resistance than points elsewhere on the body's surface. Moreover, the acupuncture points on two separate meridians reveal different skin resistance levels to those of points located along the same meridian. According to Kellner and Novotny, it

would appear that acupuncture points are an anatomical reality, something that Heine has recently proved. In 1952 Walter Schmidt examined acupuncture points on patients in the County Hospital at Dachau/Bavaria, using patients from whom clinical diagnoses had already been obtained. These included patients with cardiac insufficiency or stomach ulcers, for example. He examined these points using both AC and DC current and established that resistance at the relevant acupuncture point increased if the appropriate organ was defective. In contrast, this resistance remained constant when organ function was not impaired. Schmidt thus discovered the phenomenon of so-called pointer drift. He was also familiar with the other criteria that must be considered when making such measurements. At a conference on empirical healing in 1953 he reported on his work under the title: "The measurement of vegetative potentials at meridian points". Voll carried on this work and, in conjunction with Wömer, he evolved what has come to become known as electro-acupuncture according to Voll (EAV). However, such results should be interpreted in a more intuitive way, because the experimenters were handicapped by a severe lack of the correct apparatus. This factor, combined with excessive personality influence led to the development of other processes such as bioelectronic functional diagnosis (BFD) and the Vega-Process. The two processes are outlined briefly below:

1. Bioelectronic functional diagnosis (BFD) represents a further development derived from Voll's electro-acupuncture method. Basically it uses two tests:

- a. The bioelectronic regulatory test, which owes most of its development to the work of Pflaum.
- b. Impulse thermography, which subsequently became refined into so-called decoder thermography.

The latter tests were primarily developed by Bergsmann (medical) and Jahnke (technical).

In the bioelectronic regulatory test multiple readings are carried out following a steady stimulus. Low frequency currents are used, being applied to the acupuncture points during the initial measurement and the response to the stimulus is recorded during a second measurement period. Decoder thermography is the second component of bioelectronic function diagnosis. It is based on measurements of resistance carried out all over the body. Electrodes are connected to the forehead, hands and feet, enabling a so-called allround measurement to be made. In decoder thermography the second step does not simply involve registering resistance readings on the skin. Stimuli in the form of impulses are also administered to display the response to these impulses in graph form. According to the function situation of the tissue in the sections examined, both the negative and the positive batches of impulses, along with the return current, are modulated to varying degrees. This supplies information, for example, about severe vagotonia (exhaustion, hypergic, or anergic reactions) as well as a sympathicotonic reaction (e.g. in the case of allergies or inflammation). The type of transient effect in the structure of measurement and the form of return current also supply additional information. A drop in return current is taken to indicate severe tissue exhaustion.

According to Bergsmann, the electrical readings obtained in the decoder thermogram represent the colloid chemical properties of the mesenchymal stroma as defined by Pischinger/Kellner: A sol state indicates that the tissue is softer and more fluid. Increased absorption of water increases the internal surface. A gel state, on the other hand, signifies drying and stiffening of the tissue. The internal surface is reduced as a result of the release of water and loss of charge. The structure of the colloids depends on the general tissue metabolism, and thus on the ratio of acids to bases, on the concentrations of oxygen and carbon dioxide, etc. It thus presents an integral resultant of the complex biological activity, including in particular the tensions produced by emotional factors, which can be detected in the

neurovegetativum. For example, anxiety, fright, and other sympathetic reactions in the sol state are reflected by appropriate changes in the decoder thermogram.

The diagnostic methods available to conventional medicine are incapable of registering such changes.

b. The Vegatest method represents a further advance in electro-acupuncture, and is the result of work by Schimmel and co-workers. They reduced the number of measurement points to one and reversed the measurement principle, by including to a certain extent in their cycle of measurement the "organs" that had previously been measured "in their non-impaired form" from acupuncture points. Measurements are no longer carried out at a number of "impaired" and "non-impaired" acupuncture points, and this is something that beginners in particular find difficult to implement. Instead, one single, healthy acupuncture point, from which readings can be reproduced, is utilized as a source of information. The varied statements, previously obtained from measurements at a larger number of acupuncture points, are now achieved by determining the effect of a specific number of test substances incorporated in the measurement cycle, and which are capable of influencing the readings. Because all measurements take place at only one or only a few acupuncture points, the Vegatest method has practical applications, saves time, and is responsive. It is still being refined and improved. One other feature is the substantial reduction in the time required for an examination compared with the EAV method introduced by Voll, or the BFD developed by Schmidt/Jahnke.

A number of other bioenergetic regulatory methods are listed below, but they cannot be dealt with in further detail here: Schwamm's thermography, energetic terminal point diagnosis according to Mandel, Kirlian photography developed by Mandel, the acutestmatic method developed by Kief, the neo-bioelectronic diagnosis and therapy developed by Schramm, and segment electrography developed by Schimmel.

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### **Comparison between electroacupuncture methods and methods used in conventional diagnosis and therapy**

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Electro-acupuncture is based on the fact that impaired functioning of the organism can be identified by bioelectronic means on the surface of the body. Thus electro-acupuncture is an excellent means of augmenting clinical medicine, enabling an assessment not only to be made of morphological findings, but also of the bioelectrical situation, and thus the energetical situation of the human system. This method is particularly successful in cases where, due to a lack of available opportunities, clinical diagnosis and therapy are still unable to identify the causes of impaired health. Conventional clinical diagnosis is, as a rule, confined to the treatment of findings that can be established morphologically. This is particularly apparent in the identification and treatment of toxic deposits or homotoxins in mesenchymal connecting tissue. Electro-acupuncture methods are also important for detecting focal infections, for identifying vegetatively stigmatized over-reactions in the form of allergies, and for identifying certain chronic diseases which are normally resistant to therapy based on existing knowledge in clinical medicine.

By making the regulatory behavior of the human system visible at a specific time, e.g. using decoder thermography, it is possible to show whether and how quickly the organism is capable of responding to or compensating for a stimulus applied to it. This enables important conclusions to be drawn regarding individual resistance. The degree of intactness of the basic regulatory system or the system of comprehensive defense can be determined according to the rate at which equilibrium returns and the degree of remote effects, connected with the response to a specific stimulus. The decoder also enables tendencies towards allergies, the effects of stress situations, existing weakened resistance, chronically degenerative states, and enterodysbacteria to be identified. Conventional medicine does not offer any opportunities or any

methods for identifying these important interconnections. In fact, electroacupuncture, using decoder thermography, is the only means by which this is possible. If the organs are functioning normally, readings obtained from measurements at the acupuncture points will correspond to the individual mean value for the patient.

Where a significant deviation from this mean value occurs this indicates impaired functions in the related organ systems. From a therapeutic viewpoint, the most important fact is, however, that the introduction of drugs into the measurement cycle alters the readings. Once the readings have been normalized as a result of the introduction of the drug to the measurement cycle, information can be provided about the interference factor producing the change in the reading. Thus the major advance offered by this method is that, unlike the methods used in conventional medicine, the action of homoeopathic remedies too, even up to their highest potency, can be determined and applied for selective therapy. This is necessary in the case of acute disease (humoral phases according to H.-H. Reckeweg) and chronic effects of toxins (cellular phases according to H.-H. Reckeweg) and with the ensuing impairment in the regulatory functions of the vegetative system too.

Selective therapeutic treatment can be applied using the information obtained from electro-acupuncture measurements: homoeopathic potencies made from organic preparations such as nosodes (manufactured from sterilized bacterial toxins, diseased organs, bodily secretions, and similar prepared remedies), which are capable of neutralizing toxins (homotoxins) in the body in the sense of a reverse effect (regression according to H.-H. Reckeweg). Of course, other homoeopathic and natural remedies can also be used in ampoule form for testing and therapeutic application.

The location of focal disorders of a maxillo-dental nature forms an important diagnostic area for electro-acupuncture. Conventional dental medicine and diagnosis using X-rays are often not

able to identify such disorders, due to the fact that the X-ray image and viability tests are still not able to provide entirely reliable information. Disorders in the organism as a whole are often due to decayed teeth, chronic maxillary inflammations, or the presence of incompatible material, as amalgams, etc. This is due to the energetic interaction between the teeth and bodily organs, between the teeth and sections of the spinal column, and between the teeth and glands. As a result of experience gained with electro-acupuncture, collaboration between general practitioners or internists and suitably equipped dentists with experience of electro-acupuncture has proved to be indispensable in the treatment of chronic diseases.

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#### **Criticism of electro-acupuncture as a screening method**

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No complete explanation has yet been found for the phenomena of bioelectronic regulatory diagnosis, which also includes electro-acupuncture. This area also includes the principles of drug testing. Although the reliability of the process in complying with measurement guidelines has been proven, no complete explanation of its physiodynamics has yet been offered. Up to now any attempts to provide an explanation can be considered only as models, and are based on findings obtained from physics and electronics. They seek to communicate a concept that allows for a more realistic link with phenomena that are now widely used in everyday practice.

Mention should be made of yet another criticism: the allocation, in an anatomical sense, of individual sections of organs to individual acupuncture points is purely speculative. Thus one acupuncture point on the meridian is intended to represent the pylon, while another represents the glomerular conditions, etc. Linking the acupuncture system with anatomical concepts in such a mechanistic way ignores the fundamental differences that exist between the principles of conventional and biological medicine. For example under the Chinese system the term "kidney" refers to overall

excretory activity, i.e., it is primarily functional and is intended to be much more comprehensive in scope than the corresponding anatomical term "kidney".

Furthermore, interpretations of findings obtained by electro-acupuncture, in common with other methods involving measurement conducted on the skin such as thermography, are open to the criticism that the results may be significantly influenced by the effects of perspiration. The response to this objection is that the production of perspiration is also a product of the vegetative regulatory system and thus acts as an indicator of the vegetative situation of the particular point.

And finally, criticism is justifiably levelled against claims that test results obtained with electro-acupuncture can be reproduced at will. There is no doubt that many errors can occur in the location of points as well as in the positioning of the electrode stylus and the pressure applied to it, resulting in varying readings even in cases where the examination is conducted by a skilled person. This method therefore requires a great degree of understanding and practice. This is bound to be a subjective factor. Given a sufficient experience and interest, however, if decoder thermography is applied as a controlled system it can be learned and operated by anyone. A great deal of practice is necessary before the acupuncture points can be accurately and reliably located, before they can be identified, and before such points can be evaluated by measurements. Regular practice is necessary in order to attain the necessary degree of reliability when measuring such points. This is because so-called scar interference fields can be identified using stimulus current measurement.

In summing up it can be stated that there is an increasing awareness that suitable consideration must be given not only to the diagnostic methods used in conventional medicine, but also to the physical bioelectronic methods of biological medicine. According to Pischinger and co-workers at the Ludwig Boltzmann Institute in Vienna this is due to the following reasons:

1. The functions of the basic system are based on bioelectrical and energetical principles.
2. Electrical tests enable non-invasive reaction tests to be carried out, which can be repeated at any time, do not subject the patients to undue stress, and do not involve laboratory work.
3. The results are immediately available. This is of major importance in efforts to record reaction processes.
4. Changes in energy fields occur long before morphological and serological findings are available, thus supplying information about the preclinical stages of a disease. Consequently, bioelectronic methods, which also include electro-acupuncture, are ideal where prophylactic means are involved in efforts to identify preclinical phases, to reveal vegetative dystonia, to identify and treat focal disorders and diseases, toxicoses, intoxication and diseases resistant to therapy. In other words, they are invaluable in cases where such disorders are a significant feature of the basic system and where diseased organs cannot be clinically detected or have proved resistant to previous therapy due to an inability to investigate and treat the basic system in conjunction with the organ in question.

Electro-acupuncture is an ideal method for visually displaying the responsiveness of the basic system by registering the bioenergetic situation within such a system, in terms of time, space, and condition. Certain non-specific reactions are always present in the basic system and these can also be registered. They include, for example:

- a. Disruption of the overall regulatory functions.
- b. Reduction in the threshold of responsiveness.
- c. The appearance of discrepancies between one side of the body and another or between the feet or hands.
- d. Prolonged recuperative phases following stimulus or illness which

can be diagnosed, as can specific impairment of the regulatory functions in various organs as a result of the effect of interference fields, focal or noxious (toxic) influences.

Electro-acupuncture permits statements to be made that are more comprehensive than any available up to now with other methods, particularly those used in conventional medicine. Consequently the results obtained with electro-acupuncture cannot always be confirmed through clinical methods of examination or laboratory tests. This is because the energetic changes that can be recorded using electro-acupuncture precede changes in the cells or organs for which evidence can be supported morphologically. Consequently, associated physical bioelectronic methods are used to support diagnosis carried out by electro-acupuncture, especially for comparative examinations. These methods include the electro-skin test, which uses the same equipment, and the thermo-regulatory test.

Both of these test methods enjoy clinical recognition and if used immediately following electro-acupuncture can provide the necessary degree of re-

liability. The results of an examination can therefore be regarded as reliable.

Even its critics admit that bioelectronics is not entirely without its uses, and has been successfully used on numerous occasions. Any skepticism about the more widespread use of such methods is based on the fact that in addition to previous objections, the following shortcomings are also associated with electro-acupuncture:

1. It still lacks an adequate theoretical basis.
2. The objectiveness of the findings is not yet proven.
3. The test sequence is not standardized nor is it systemized.
4. The measurement values cannot be easily reproduced.
5. Only single measurements are made.
6. The apparatus itself contains defects.

One of the aims of my remarks has been to illustrate to you that such reservations are now largely groundless. Electro-acupuncture has proved to be eminently suitable as a screening method when used by general practitioners and dentists. In both diagnostic and therapeutic terms

it offers an ideal supplement to the range of facilities available to general practitioners and also augments the diagnostic methods available to them in conventional medicine. In particular, it is indispensable as a screening method in cases where the aim is to register changes in function as an impairment of the regulatory system and where suitable methods must be selectively used not only for diagnosis but also for treatment before the availability of morphological findings.

Consequently, electro-acupuncture as a primary method will not only prove to be of value alongside the diagnostic methods used in conventional medicine, but will acquire greater recognition as our knowledge increases and as we find out more about the phenomena associated with the energetic and cybernetic methods by which the human system is regulated.

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