

# ASYRA RESEARCH ABSTRACTS

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There is a number of studies that have been published, indicating the effectiveness of Electro Dermal Screening. There follows a number of abstracts from studies, but for the full papers please contact us.

## **Asyra and Blood Chemistry**

Drawing from a clinical pool of 1,800 patients, E.Alan Jeppsen, M.D., and Steven G. Osguthorpe, N.D., conducted a double-blind study of over 600 randomly assigned patients, of which 100 were used as control subjects. This study, “*Effectiveness of the Asyra in Assessing Sub-Physiologic Thyroid Levels in Women 35 to 65 Years of Age,*” yielded a 97 percent correlation with blood chemistry.

## **Reproducibility of Point Readings**

There were 34 subjects measured on two occasions in this study with 44 points measured 4 times on each occasion for a total of 11,968 readings. The results showed a mean deviation of 0.70 respectively. The readings were taken by Mark Galloway a long-time and accomplished practitioner in this field. Nancy R. Roberts, Ph.D., C. Norman Shealy, M.D., Ph.D., William A. Tiller Ph.D. “*Are there Electrical Devices that can Measure the body’s Energy State Change to an Acupuncture Treatment?*”

## **Electromagnetic Applications in Medicine**

NIH – OAM Panel Report

*National Institutes of Health, Office of Alternative Medicine January 14, 1993*

**Editors:** Beverly Rubik, Ph.D. and Robert G. Flower

**Panel Members:** Robert O. Becker, M.D.; Carlton F. Hazlewood, Ph.D.; Abraham R. Liboff, Ph.D.; and Jan Walleczek, Ph.D.

**Objective:** To overview the emerging science of bioelectromagnetics (BEM); to report on the accomplishments of BEM research as reported in the literature surveyed; to summaries how BEM can provide a better understanding of fundamental mechanisms of communication and regulation at levels ranging from intracellular to organismic; to discuss how BEM may offer a unified conceptual framework that explains how alternative medical practices work (such as homeopathy, acupuncture); to recommend further research that would validate BEM and develop diagnostic and therapeutic applications; and to outline barriers to BEM research and recommendations to overcome them.

**Data Sources & Study Selection:** The panel reviewed research and findings in a random survey of 132 research papers of articles published in several medical and scientific journals and books, and papers presented at symposiums from 1972 – 1993. Most sources were published from 1990 – 1993. Journals ranged from Bone to Cancer and to Radiation Research.

**Data Extraction:** Relevant examples of research findings were used to explain concepts of BEM, its current and potential diagnostic and therapeutic applications, and how BEM could lead to further understanding of fundament life processes.

**Results of Data Synthesis:** The NIH – OAM panel stated that “bioelectromagnetics essentially underlies biochemistry in that chemical reactions of biological importance are mediated by the electromagnetic force.” After reviewing the scientific literature, the p panel concluded that an integrated program including both

clinical research and basic research in BEM is necessary and proper. Factors considered in making this recommendation were: 1) certain BEM-based modalities that offer distinct benefits (such as non-invasive application) over current approaches already in limited clinical use; 2) elucidation of the physical mechanisms of BEM medical modalities is the most powerful key to developing efficient and optimal clinical intervention; 3) studies prepared for three federal agencies (OTA, NIOSH, and EPA) have recommended independently that research on EM field interactions in humans should receive high priority; 4) BEM offers the possibility of more economical and more effective diagnoses and new non-invasive therapies for medical problems, including those considered intractable or recalcitrant to conventional treatments.

**Conclusions:** The panel recommends that highest clinical research priority be given to arthritis, psychophysiological states (including epilepsy), wound healing and regeneration. Sample protocols and studies are given as examples of research that could be conducted. The panel also outlined basic research opportunities and recommended general principles to be applied to basic BEM research. Criteria for both clinical and basic research are given as well.

## **On the Evolution and Future Development of Electrodermal Diagnostic Instruments**

*circa, 1985*

**Authors:** William A. Tiller, Ph.D., Professor (Department of Material Science and Engineering, Stanford University, Stanford, CA)

**Objective:** To trace the modern development of electrodermal instruments for a better understanding of origins and potentials. Those potentials have already culminated in the invention of ECG, BEG, and EMG technologies. In this paper, Dr. Tiller reviewed electrodermal development to apply modern theories of electrical engineering to medical science and the battery-like effect of given points on the human body. He explores capacitance at those points.

**Data Sources & Study Selection:** Dr. Tiller references 63 studies in electrodermal research, and includes appendices for diatherpuncture functionality and dielectric response in human skin.

**Data Extraction:** The author traces the two domains of electrodermal studies, involving macro and micro electrodes. Dr. Tiller summarises the macro electrode studies conducted during the 1940s, and provides a corresponding summary for micro electrode studies conducted between 1950 and 1985. He also tracks the development of electrodermal diagnostic devices over these time periods.

**Results of Data Synthesis:** There does appear to be experimental support for, and a possible theoretical model to explain, connectivity between the organs and their specific polarisation's. There also appears to be important differences of skin measurements between the hand-held moving electrode modality and the fixed, multiple electrode, automatic switching modality.

**Conclusions:** Dr. Tiller concludes that there are several effective electrodermal techniques in present use that, we understand — both how they work and what they measure. After reviewing the research of the past five decades, Dr. Tiller believes that new applications of electrodermal diagnostics will be developed to supplement or complement current uses that are already standard practice in clinical medicine (such as ECG, EEG, and EMG technologies). Dr. Tiller concludes that these new devices could significantly reduce health care costs.

# **Nuclear Medicine and Acupuncture: A study on the Migration of Radioactive Tracers after Injection at Acupoints**

*American Journal of Acupuncture, Vol. 20, No. 3, 1992*

**Writers:** Jean-Claude Darras, Pierre de Vemejoul, and Pierre Albarède, C.H.U. Necker – Enfants Malades, F-75 743 Paris Cedex 15, France.

**Objective:** This paper reports on the authors investigation of the pathways of acupuncture meridians in the human body through the injection of radioactive tracers (isotopes) at acupuncture points.

**Design:** The radioactive tracer used was the most common radioactive tracer, technetium-99m (<sup>99m</sup>Tc), as sodium pertechnetate. The experiment was conducted with a gamma camera, a Siemens SAM (small-area mobile) digital scintillation camera. Image analysis was conducted by a computer system built into the camera. Morphological studies and quantitative dynamic studies were conducted.

The morphological studies consisted of analytical and differential studies. For the analytical studies, the radioactive tracer is injected at a control point located outside any acupoint. Then, another injection is given at an acupoint.

The differential analysis was conducted in order to establish the specific and unique characteristics of the pathways observed in the analytical studies and thus eliminate a vascular or lymphatic explanation. To investigate the vascular pathways, two radiotracers of different energies and therefore discernible by spectrometry were utilised: Technetium-99m was injected as an acupoint and Thallium (<sup>201</sup>Tl) was injected in a small vein situated next to that acupoint. To study the possible relationship between the lymphatic pathways and those demonstrated by the radiotracer, the same dose (20 MBq) and volume (0.05ml) of pertechnetate was simultaneously injected at an acupoint and the first interdigital space of the foot. A quantitative study of the previous data was conducted after selecting two mirror regions of identical shape and size on the leg along the Liver meridian (an acupuncture meridian) and similar “background noise regions” outside the pathways. Sequential study and stimulation studies were conducted as part of quantitative dynamic studies. The goal of the sequential study was to evaluate the speed of radiotracer migration along preferential pathways. In healthy control subjects and patients with unilateral renal pathology, two sodium pertechnetate injections of identical volume and activity were given simultaneously at the left and right acupoints K-7. In the stimulation study, mechanical, electrical, and thermal stimulation were performed on certain acupoints after the injection of radiotracers to study the migration of the radiotracers.

Laboratory experiments conducted in collaboration with the Cytology Laboratory of the Military Hospital of Percy in Paris tested modifications of granulocyte membrane potentials during stimulation of an acupoint using either a needle or a laser beam. The cell membrane potential was measured with a fluorometric method on blood sampled one minute after the end of injections or stimulation's, and compared with control blood from the same subject.

**Setting:** The work was conducted on patients from the Department of Urology and from the Acupuncture Department of Biophysics and Nuclear Medicine from the Necker Hospital in Paris. Each experiment was repeated several times.

**Patients and Other Participants:** The work was conducted on over 250 healthy control subjects and on 80 patients with renal pathology.

**Interventions:** Not applicable to this study.

**Main Outcome Measures:** The authors expected to find that the preferential pathways taken by the radiotracers coincide with the acupuncture meridians as described in Chinese traditional medicine and that these pathways are distinguishable from either lymphatic or vascular routes.

**Results:** Morphological studies found those tracer migrations from acupoints in both healthy and sick patients followed the same identical pathways with those described as “meridians” in Chinese traditional medicine. The results suggest that these pathways are different from vascular and lymphatic pathways. The quantitative dynamic studies found that in injections at bilateral K-7, there was a faster diffusion on the healthy side, and slower diffusion on the diseased side. In inflammatory organ disease, there was increased migration speed of the radiotracer in the meridian of the related organ. A reduced tracer migration speed is indicative of a degenerative disease, such as cancer. Such findings could be used as the basis of a therapeutic evaluation or diagnosis.

The laboratory experiments with cell membranes suggests that acupoint stimulation could be used to provoke constant and reproducible change in cellular physiology.

**Conclusions:** The migration speed and patterns of a radioactive tracer along pathways which coincide with the Chinese acupuncture meridians show that these routes have neither a vascular nor a lymphatic origin. These pathways are very likely related to the connective tissue diffusion following the neurovascular bundles along the extremities. Findings suggest the hypothesis of the intervention of a neurochemical mechanism in information transmission.

## **Quantitative Analysis of Electrical Skin Conductance in Diagnosis: Historical and Current Views of Bioelectric Medicine**

*Journal of Naturopathic Medicine (1996: Volume 6, Number 1)*

**Author:** Barbara Brewitt, Ph.D.

**Objective:** To review past electromagnetic skin conductance research for new analyses, and to present the author's current clinical data and findings using electro-dermal screening.

**Data Sources & Study Selection:** Dr. Brewitt reviewed past research into measuring bioelectrical parameters, specifically the work of Harold S. Burr and associates (Yale, 1930-1940), Dr. Reinhold Voll (1940), S.G. Sullivan (et al, 1985), and O. Bergsmann and A. Woolley-Hart (1973). Dr. Brewitt summarized this previous research, then ran her own tests to clarify electrical conductance measurements using de facto EDS instrumentation.

**Data Extraction:** Relevant research findings from 71 research papers provide insight into electro-dermal research (between 1938 and 1994). Dr. Brewitt recreated Burr's work using quantitative time series analysis (Fourier) to confirm or challenge Burr's conclusions that electrical conductance measurements significantly distinguished between health and disease states. Dr. Brewitt first conducted this research on mice and then on patients coming to the University Health Clinic for treatment. Patient groups were defined under chronic inflammation and degenerative conditions, with control groups for both. The electrical conductance measurements were analysed by Dr. Brewitt through the EDS device LISTEN (BioMeridian™ International Orem, UT), which provided a standard 5.0 volts of direct current (D.C.) and standardized measurements over a one second time period.

**Results of Data Synthesis:** Electrical conductance measurements on patient groups were analysed for differences at immune-related points between non-viral, non-cancer controls and patients with various clinical

symptoms involving the immune system. Control patients were found to have normal range in both the peripheral immune and spleen areas. Patients with chronic inflammatory conditions (carcinoma in situ, chronic and symptomatic Epstein Barr infection, rheumatoid arthritis, leukemia) had higher-than-normal electrical conductances in peripheral immune system points, with normal ranges for spleen points that were, however, statistically different than the control group. Patients with degenerative diseases (cancer, AIDS) had electrical conductances at spleen points below the normal range. Dr. Brewitt found that early stages of cancer, chronic viral infection (Epstein Barr and human immunodeficiency virus) and chronic inflammatory diseases are characterised by hyper – conductances at skin points associated with lymphatics, joints, and connective tissue compared to the same points in controls. In contrast, terminal stages of cancer and AIDS are characterised by lower than normal electrical conductances, especially at the spleen points. Given reliable electrodermal screening instruments, early diagnosis of several significant disease states via measurable changes in electrical conductances may be possible, making it possible to provide early and more effective natural treatment. **Conclusions:** Historically and currently, EDS instruments characterise differences between inflammatory and degenerative conditions. Electrical conductance data reviewed correspond with histological reports. In clinical practice, EDS instruments are useful as diagnostic supplements to blood tests, radiographic images, and case histories. The integration of reliable and valid bioelectric medical instruments into the clinical setting augments the ability to rapidly evaluate tissue. This is especially relevant for patients suffering from HIV infection, where accurate evaluation of the lymph nodes and spleen have been found to be more effective than blood testing. Bioelectric medicine offers clinicians new quantitative methods for evaluating subtle electromagnetic changes in humans.

## **EDS: Auto-regulation & Cell Signal Enhancement Bridges / ISSSEEM Magazine**

*Volume 7, Number 2 / Summer 1996*

**Author:** Barbara Brewitt, Ph.D.

**Objective:** To study the dynamic diagnostic perception of EDS in relation to negative and positive feedback at cell receptors and cell signalling through membrane receptors and channels.

**Data Sources & Study Selection:** The author references 14 research studies using some form of electrodermal screening in relation to quantifying cellular changes in both healthy and diseased patients.

**Data Extraction:** Dr. Brewitt conducted baseline research over 12 months between a healthy control patient and a patient infected with the human immunodeficiency virus (HIV). The latter patient was exposed to electrical signals at various skin-conductance points over a period of yet another 12 months. The patient's normalised electrical conductance was studied during both diagnosis and treatment.

**Results of Data Synthesis:** The hypothesis supported by these two case examples is that “health” correlates with a frequent oscillatory period with a low amplitude around a baseline value. Chronic viral illness and other disease states change the electro-magnetic control systems, with consequential loss of coherence. In the case of the HIV patient, auto-regulatory control could be interpreted as a disruption to the positive and negative feedback mechanisms of the immune system. Treatment with electromagnetic fields could entrain lymphocytes to produce more regulated rhythms, and specific electrical frequencies could correspond to growth factors that normally activate G-proteins (critical for transduction processes), possibly inhibiting the HIV virus from further replication.

**Conclusions:** Disease processes disrupt the body's normally balanced mechanisms. Current chemical analysis only captures “snapshots” that measure a brief time frame, creating the appearance of a static state where none exists. By measuring electrical resistance's over time, EDS devices provide clinicians with a dynamic profile

of these normal or distorted oscillatory patterns. The evolving field of “bioelectric medicine” holds great promise for the early diagnosis of significant disease states and for earlier and more effective treatments.

## **Characteristics of Reactive Electroporeable Points on the Auricles of Coronary Heart Disease Patients**

*Clinical Cardiology (16, 415-419, 1993)*

**Authors:** Keijiro Saku, M.D., Ph.D.; Yoshito Mukaino, M.D., Ph.D.; Hong Ying, M.D.; Kikuo Arakawa, M.D., Ph.D. (Department of Internal Medicine, Fukuoka University School of Medicine, Fukuoka City, Japan)

**Objective:** To study the reactive electroporeable points (REPP) on the auricles of patients with coronary heart disease against the shin and shinzo acupunctural points relating to the heart, using a neurometer LC-M. The authors studied the loci of REPP, shin and shinzo in relation to heart disease, and tested the relationship between electrical resistance's in the tissues of the auricle and coronary heart disease.

**Data Sources & Study Selection:** The authors reviewed eight references detailing auricular diagnosis and the physiological interpretations of acupuncture and moxa.

**Data Extraction:** The authors investigated and measured electrical resistance in all areas of the auricle to test for any patterns of auricle sensitivity in heart disease patients. This blind study was conducted from March to August 1989 at Fukuoka University Hospital, Department of Internal Medicine. The authors investigated four different groups: (1) patients with myocardial infarction (AIM); (2) patients with old myocardial infarction and anginal attack (OMI); (3) patients with angina pectoris (AP); and (4) healthy control group. The auricle tests were supplemented with electrocardiograms, ultrasonic coronary exams, and coronary-arterial construction.

**Results of Data Synthesis:** The incidence of positive REPP test results at the shin and shinzo points for subjects with acute myocardial infarction (AIM) were extremely high, and positive test results for patients with old myocardial infarction (OMI) and angina pectoris (AP) were also significant. There was no significant difference in the incidence rates of REPP at the shin and shinzo points between the OMI and AP groups. High incidence of positive REPP test results at the lung and heart III (shinyu) points occurred only in the AIM group, and this was significantly high when compared with the control group.

**Conclusion:** The incidence of positive REPP test results at the acupuncture (shin and shinzo) points for the heart for subjects with acute myocardial infarction (AIM) were extremely high, and positive test results for patients with old myocardial infarction (OMI) and angina pectoris (AP) were significant.

## **Specific Desensitisation to Chemicals: A Pilot Study of 100 Patients**

**Writers:** Miklos L. Boczko, M.D., and Lawrence J. Caprio, N.D., 830 Post Road East, Westport, Connecticut

**Objective:** The presence of natural and synthetic chemicals in the environment and their ill effects are becoming a serious health concern. It is estimated that nearly 40 million Americans (1 in 6) presently suffer from allergic symptoms. This study reflects the authors' experience over seven years using a modified Rinkel method of neutralisation in the treatment of chemically sensitive individuals. The authors set out to discover whether their method was an effective way to treat chemical sensitivity.

**Design:** 100 cases were randomly selected from a patient population of 5,813. The pilot study was limited to a few pervasive chemicals. The authors modified the Rinkel technique. First, they did not use interdermal or sublingual challenges of actual substances (as is traditionally done by clinical ecologists). Instead, the instrument they used was a programmed computer system that generated an electrical signal of any one of a

vast array of stored data obtained from the chemical panel. (The standard chemical panel comprises 120 chemicals of which the most important are formaldehyde, hydrocarbons [such as natural gas, auto exhaust, etc.] chlorine, tobacco smoke, perfume, phenol, solvents, and pesticides. Patients were also screened for foods, pollen, mold, candida, dust, and epidermals. When indicated, hormones, neurotransmitters, heavy metals, and other substances were tested. Epicutaneous testing was used for verification.) End points were identified by the suppression of electrical skin conductance. These helped determine the dilution of the self-administered sublingual neutralising dose of the offending substance for each individual patient.

**Setting:** Patients from a private medical and a naturopathic practice over a span of seven years.

**Patients:** All patients involved in the study underwent routine histories and physical examinations, as well as environmental questionnaires. The authors reviewed medical records and laboratory data from the patients' family practitioners. Those patients chosen to participate in the study had the severest symptoms and had encountered little-to-no relief from previous conventional medical treatments. Selected patients were further investigated for specific problems: endocrine, metabolic, neurological, gastrointestinal, and microbiological. The study utilised electrodermal screening — a computerised skin-conductance testing instrument (LISTEN SYSTEM, from BioSource, Inc., Orem, Utah) based on the Voll principle.

**Interventions:** The specific treatment was carried out by self-administered, sublingua neutralising doses of the offending substance. Patients were instructed to administer 2 drops of the solution 3 times a day. This dosage was found to be safe for most patients. Treatment vials were prepared by using 0.4 cc of the neutralising dilution and adding 9.6 cc non-preserved sterile water.

**Results:** Objective electrodermal measurements, subjective reports from the patient, and the necessity for ongoing desensitisation allowed the authors to place patients in the following categories: recovery, improvement, no improvement. In this study, 90% of all patients received some degree of remission (18% full remission, 72% partial) and only 10% reported no improvement.

**Conclusions:** The action mechanism of the authors' method remains unknown. The authors believe that the subcutaneous or sublingual immunotherapy used by clinical cologists works in an entirely different manner than the method tested here. They have concluded, from this study, that their method provides successful, specific treatment for the chemically sensitive patient. That treatment has proven to be non-provocative, non-invasive, safe, and applicable to all age groups, and provides easily reproducible end-point determinations over extended periods of time.

## **Effectiveness of the Asyra (EDS) in assessing sub-physiologic Thyroid levels (free T3 of less 4.0(159)) in women 35 to 65 years of age.**

*August, 2006*

E. Alan Jeppsen, M.D. Steven G. Osguthorpe, N.D.

This study has demonstrated the effectiveness of ElectroDermal screening with both the clinical and laboratory diagnosis in 500 patients with subphysiologic hypothyroid have been compared to 100 normal age adjusted control subjects. The correlation between the EDS measured abnormalities, using standard deviation (SDI) criteria and patients with sub-physiologic hypothyroid state was statistically significant at 99.5% with a  $P < 0.005$ .

Thus EDS has demonstrated its effectiveness, when utilized by a skilled technician, to be a valuable tool for the analysis and diagnoses of subphysiologic hypothyroid levels.