



***CLINICAL  
APPLICATIONS***  
**E.I.S-01-USB System**

***Electro  
Interstitial  
Scan***



Electrical Bio Impedance Analysis:  
Tissue and microcirculation

**SOFTMED**  
*TECHNOLOGY*

**Manufacturer, Specification**  
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|                                       |
|---------------------------------------|
| Medical system for diagnostic class 1 |
|---------------------------------------|

## APPLICATION ON MEDICAL PRACTICE

The applications of the EIS system provide of the results (see folder results and help in interpretation).

### .Positioning of EIS device in cardiology and Neurology

**Table 1. Positioning of EIS device as a supplementary examination in cardiology**

|  | Electrical activity | Coronary | Arterial Blood pressure | Volume | Heart Tissue (O <sub>2</sub> / Microcirculation) |
|--|---------------------|----------|-------------------------|--------|--|
| EKG                                      | X                   |          |                         |        |  |
| Arteriography or EB CT                   |                     | X        |                         |        |  |
| Tools for Measurement for blood Pressure |                     |          | X                       |        |  |
| Ultrasonic                               |                     |          |                         | X      |  |
| EIS                                      |                     |          |                         |        | X  |

Except in heart attack (in this case all these examinations are positives), each examination will be positive or negative in function of its specificity.

For example, you can have diagnoses of atherosclerosis with EB CT, and EIS negative, because EIS do not evaluating the diameter of the coronary, but the blood flow into the coronary.

And you can have diagnoses of atherosclerosis with EIS, and with the EB CT negative, because the problem is not the diameter of the coronary, but the high viscosity of the blood or thrombus into the coronary.

For the arterial blood pressure measurement, the EIS indicate the pressure of the vessels by mathematical calculation of the results of the microcirculation (starling equation).

**Table 2. Positioning of EIS device as a supplementary examination in neurology**

|          | Electrical activity | Brain structure | Cerebral blood flow | Nerve cells activity | Brain Tissue (O <sub>2</sub> / Microcirculation) |
|----------|---------------------|-----------------|---------------------|----------------------|--|
| EEG      | X                   |                 |                     |                      |  |
| MRI      |                     | X               |                     |                      |  |
| CAT Scan |                     |                 | X                   |                      |  |
| MEG      |                     |                 |                     | X                    |  |
| EIS      |                     |                 |                     |                      | X  |

Which are the applications of these data on medical practice?

The applications of EIS system come from its specific site.

1. New diagnoses approach in neurological or psychological disorders:

The Neurological or psychological disorders or diseases can not be diagnoses by other examination, because the visualization is on the brain tissue. So, before the EIS system, the diagnosis was symptomatically.

Only the EIS system can visualized this disorders or diseases and therefore we change the therapeutic approach

These applications were validate by clinical investigations see [www.softmedtechnology.com](http://www.softmedtechnology.com)

| Disorders /Diseases          | EIS marker (s)   | Indicator              |
|------------------------------|--|------------------------|
| Stress                       | Interstitial catecholamine   | Increased              |
| Insomnia                     | Neuronal excitability of frontal lobes                               | Increased              |
| Unipolar depression          | interstitial serotonin<br>mitochondrial activity                     | Decreased<br>Decreased |
| Unspecified depression       | interstitial serotonin<br>norm mitochondrial activity                | Increased              |
| Stress adjustment depression | Interstitial catecholamine<br>Neuronal excitability of frontal lobes | Increased<br>Increased |
| Bipolar depression           | Interstitial Dopamine  | Increased              |
| ADHD Children                | Interstitial Dopamine  | Increased              |
| Emotional disorders          | Neuronal excitability of limbic system                               | Decreased              |
| Chronic fatigue              | Interstitial catecholamine   | Decreased              |

2. Visualization of the Pains: Except for a physical trauma, most pains are a tissue ischemia or microcirculation vasoconstriction and these parameters are measured only by the EIS system:

| Pains     | EIS marker (s)  | Indicator  |
|-----------|---|--|
| Headache: | 1.Intracranial artery<br>2.Digestive origin<br>3.Spine (Cervical Arthritis) | Acute:<br>1.Pressure increased<br>2.ipH alkaline<br>3.Yellow<br>Chronic<br>1.Pressure decreased<br>2.ipH acid<br>3.Blue              |
| Digestive | All digestive organs  | Acute:<br>ipH alkaline<br>Chronic<br>ipH acid  |
| Back      | 1. Spine modeling<br>2.Muscular excitability<br>3. Kidney(s)                | Acute:<br>1. vertebra in yellow<br>2. increased<br>3. ipH alkaline<br>Chronic:<br>1. vertebra in blue<br>2. decreased<br>3. ipH acid |
| Chest     | 1.Heart modeling<br>2. Muscular excitability                                | Acute:<br>1.tO2 reduce<br>2.increased<br>Chronic<br>2.increased  |

### 3. Screening of disorders or diseases:

The tissues and microcirculation parameters and acid base balance will be the consequence of disorders or diseases.

|  | EIS marker (s)                | Indicator                              |
|--|-------------------------------|--|
| <b><u>Disorders / Diseases</u></b>       |                               |  |
| <b><u>Cardiovascular disorders</u></b>   |                               |  |
| Hypertension                             | 1.Baroreceptor                | 1.Increased pressure                   |
|  | 2.Frontal lobes               | 2. Increased the neuronal excitability |
|  | Metabolic Alkalosis           |  |
| Arteriosclerosis                         | 1.Value Mitochondria activity | 1.Increased                            |
|  | 2.t02 of Heart left ventricle | 2.Increased                            |
|  | 3.Metabolic alkalosis         |  |
| Arrhythmia                               | 1.Catecholamines              | 1.Increased                            |
|  |                               | 2.Increased                            |
| <b><u>Oncology</u></b>                   |                               |  |
| All localisations before treatment       | Metabolic acidosis*           |  |
| <b><u>Endocrine disorders</u></b>        |                               |  |
| Type I Diabetes                          | 1.Value Mitochondria activity | 1. Reduced                             |
|  | 2. Metabolic acidosis         |  |
| Type II Diabetes                         | 1. Insulin production         | 1.Increased                            |
|  | 2. Metabolic alkalosis        |  |
| Hypothyroid                              | 1.Value of thyroid            | 1. Reduced                             |
|  | 2.TSH                         | 2. Increased                           |
|  | 3. Mitochondria activity      | 3.Reduced                              |
|  | 4.Respiratory Alkalosis       |  |
| <b><u>Gastrointestinal disorders</u></b> |                               |  |
| Gastritis :                              | Stomach                       | Acute:<br>1.ipH alkaline               |
|  |                               | Chronic<br>2. ipH acid                 |
| Pancreatitis                             | Pancreas                      | Acute:<br>1.ipH alkaline               |
|  |                               | Chronic<br>2. ipH acid                 |
| Hepatitis                                | Liver                         | Acute:<br>1.ipH alkaline               |
|  |                               | Chronic<br>2. ipH acid                 |

#### **\*Oncology:**

The tests carried out at the Botkin hospital in 2003 made it possible to determine an important specificity (80%) for cancer. However, this specificity was calculated around only one parameter: the pH of interstitial fluid (metabolic acidosis). This specific parameter has also been confirmed by several respected publications (62) (63).

However, the sensitivity scoring is very low and therefore the EIS scan, as a screening, can not be considered to be a validation and marker for cancer. However, the EIS scan has validity as a therapeutic follow up (i.e. as in cancer treatment with chemotherapy) to determine the effectiveness of treatment, and to find associated side effects caused by the treatment. This has been confirmed by the pre study made in Gustave Roussy Institute (France 2002).

#### 4. Early follow up and visualization of lifestyle (nutrition, smoking, no exercise or too much sport ....)

The tissue and microcirculation parameters and acid base balance are the reflections of a lifestyle. The strong point of the EIS system is the nutritional analysis. The system evaluates all the parameters including the true acid base balance calculated upon the cells environment.

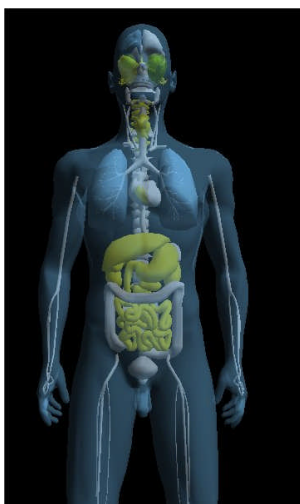
| Life style                      | EIS markers  | Indicator                                    |
|---------------------------------|--|--|
| Vegetarian strict               | 1.Digestive system<br>2.Metabolic acidosis                         | 1.ipH acid                                   |
| Protein excess<br>And sedentary | 1.Digestive system<br>2.Heart ventricles<br>3..Metabolic alkalosis | 1.ipH alkaline<br>2. to2 reduced             |
| Milk                            | Digestive system   | ipH acid                                     |
| Sedentary                       | Metabolic alkalosis  |  |
| Fat food<br>And sedentary       | 1.Digestive system<br>2.Heart ventricles<br>3..Metabolic alkalosis | 1. ipH alkaline<br>2. to2 reduced            |
| Sport                           | Metabolic acidosis   | Davenport in<br>Sport control<br>measurement |
| Smoking                         | Metabolic alkalosis  |  |
| Alcohol                         | 1Liver<br>Metabolic acidosis if<br>chronic                         | 1.If chronic: ipH<br>acid                    |

#### 5. Early follow up and visualization of all therapies

Because the effects of any treatment or any lifestyle change will begin showing on the cellular level, then in interstitial fluid and tissue microcirculation, only the EIS system provide the earlier visualization.

The visualization allows understanding and mastering of this technique and rapid progression.

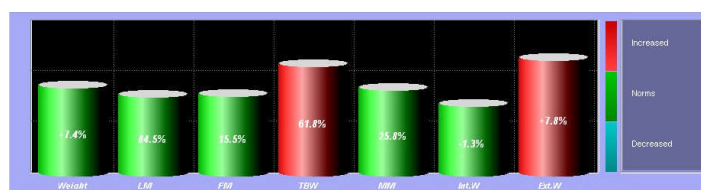
#### Visualization of some examples of treatment follow up with EIS system



##### Effect of corticoid treatment (15 days)

You can see in organs (digestive inflammation) ①

and in the body composition the extra cellular water increased (edem) ②



①

②

### Effect of oxygenation (20 minutes)

You can see in the effect in digestive system (vasodilatation)

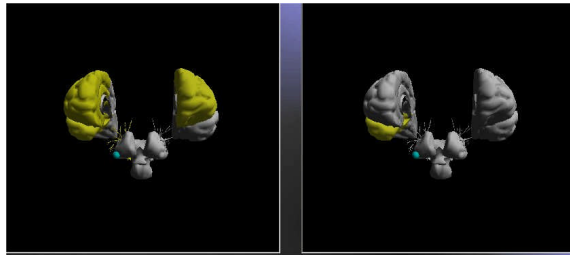
and in the brain (neuronal excitability increased)

①

②

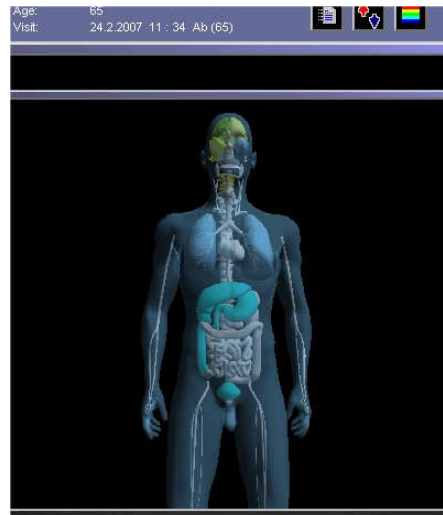
①

After Before

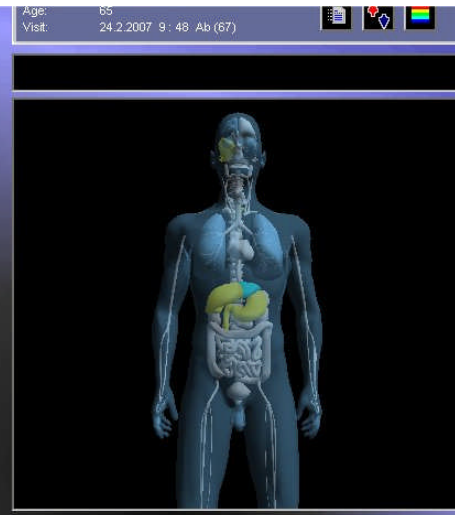


②

After



Before



### Effect of antibiotherapy (treatment of Escherichia coli after 1 week)

You can see the vasodilatation of organs and reduction of infection.

After

Before

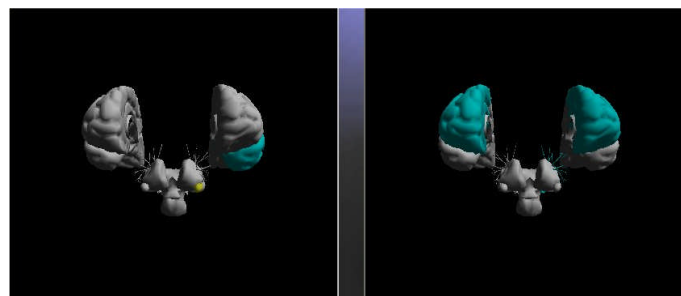


### Effect of antidepressant (IRSS after 45 days)

The neuronal excitability became normal

After

Before

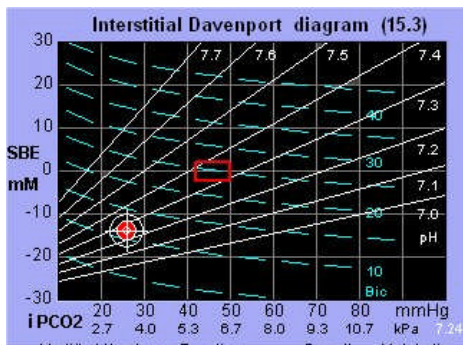




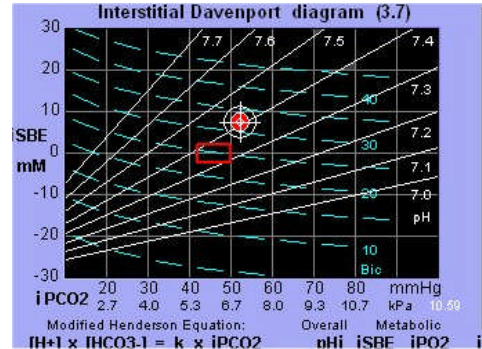
### Effect of chemotherapy (after 1 week)

You can see in Davenport Diagram before the treatment (metabolic acidosis) and after the treatment (metabolic alkalosis)

**Before**



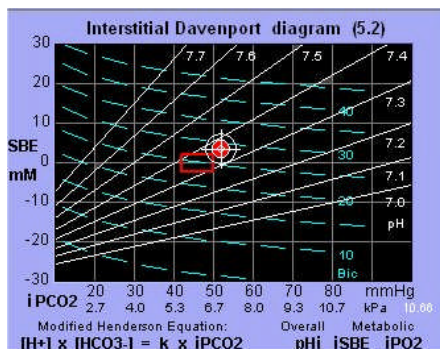
**After**



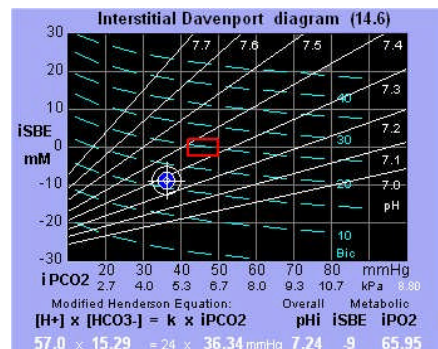
### Effect of hypo tensor and anti agregants (after one month)

In davenport Diagram before the treatment (metabolic alkalosis) and after the treatment (metabolic acidosis)

**Before**

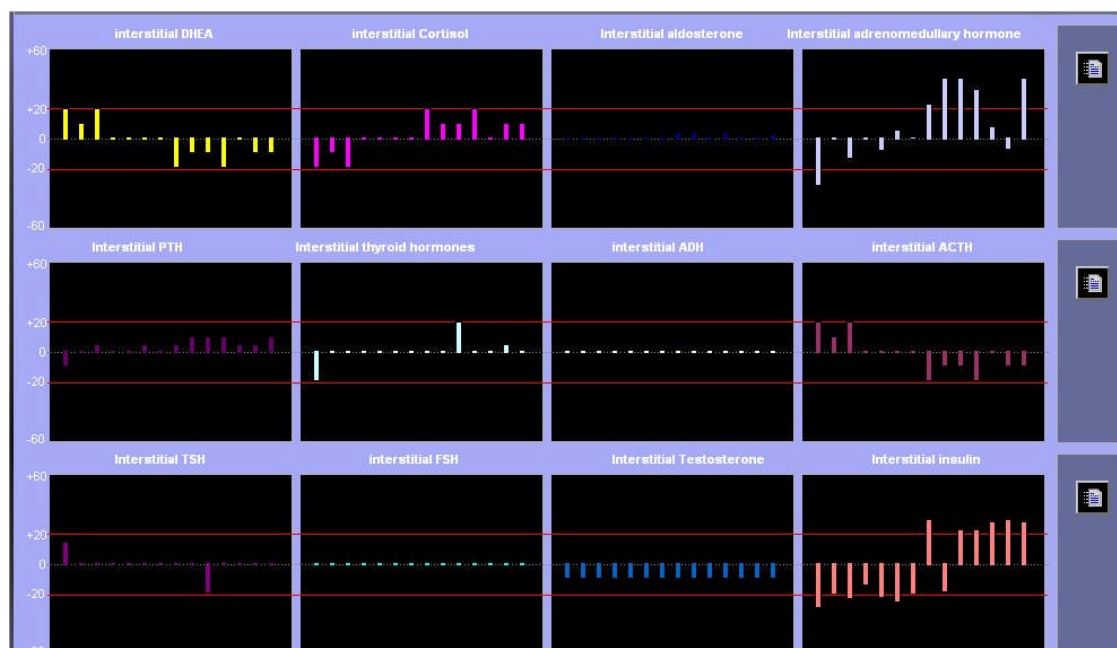


**After**



### Hormonal assessment Follow up (1 year)

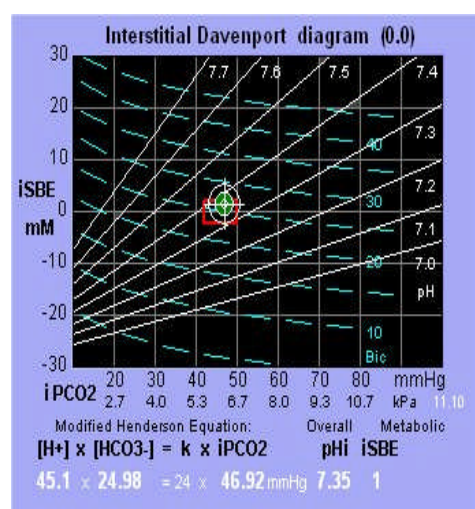
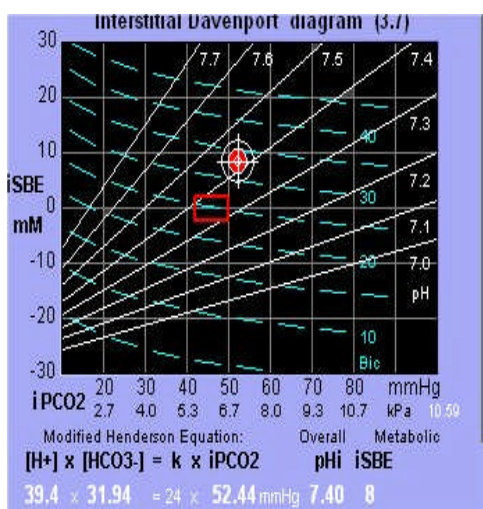
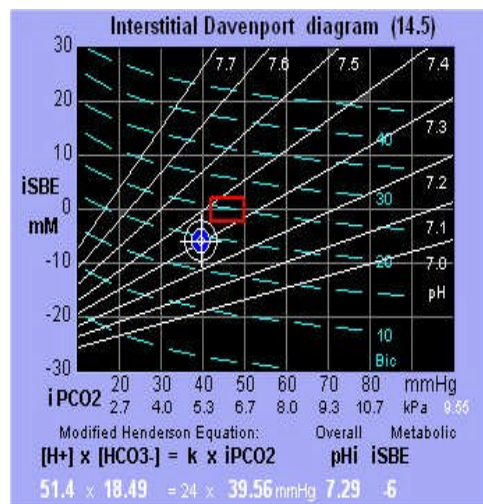
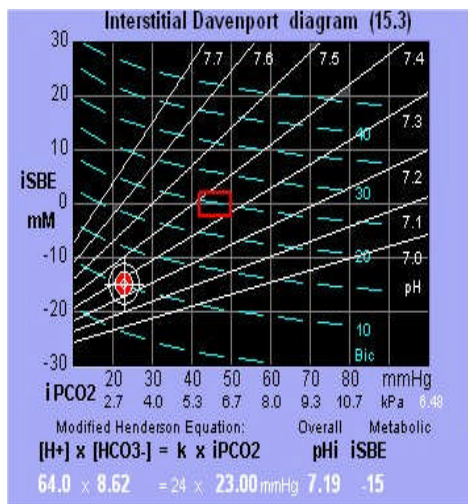
The dose had be change until the stabilisation



## Follow up of thyroid treatment with Davenport Diagram

TSH 9 before treatment

dose 80µg



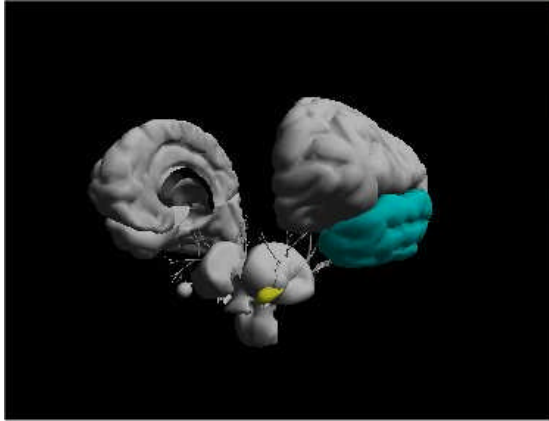
Dose 120µg

Dose 100µg

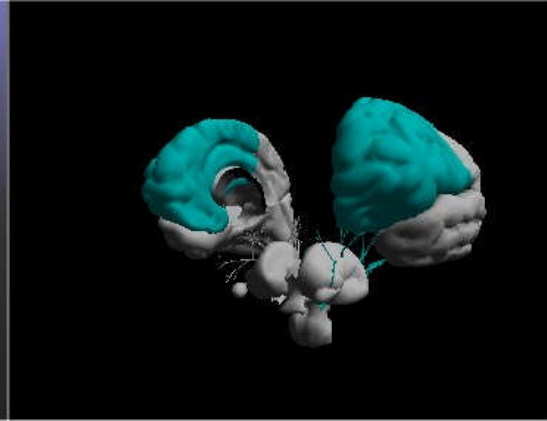


**Effect of auriculopuncture on the brain after 10 minutes** (Right ear: Cosmonaut, O', SPM points)

**After**



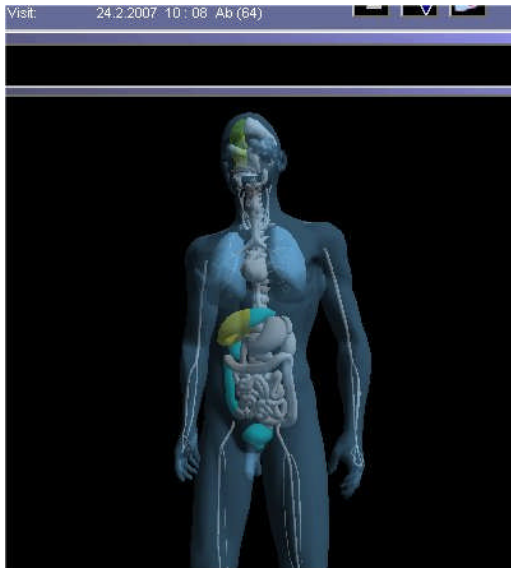
**Before**



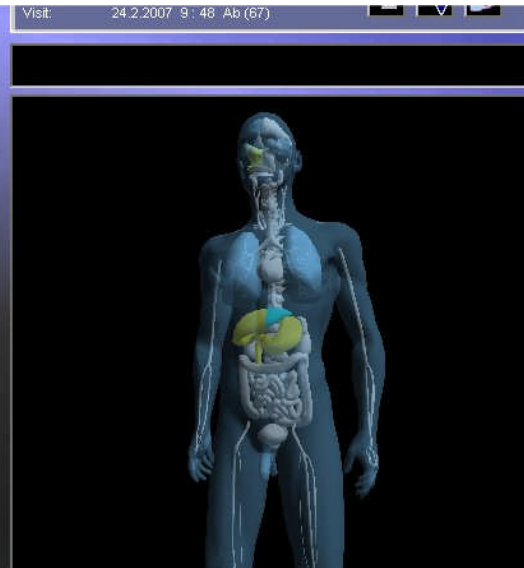
**Effect of Homeopathy after 20 minutes: Nux Vomica 6X**

On the stomach (No effect on Liver)

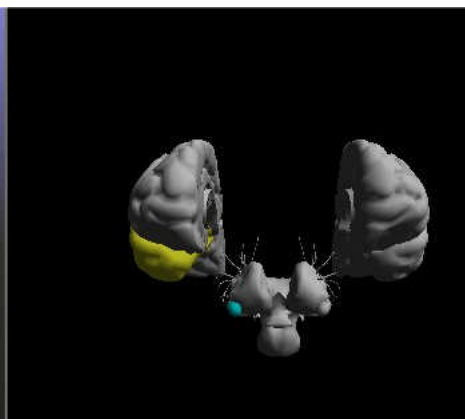
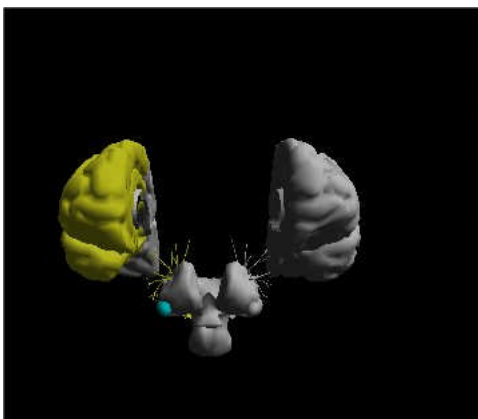
**After**



**Before**

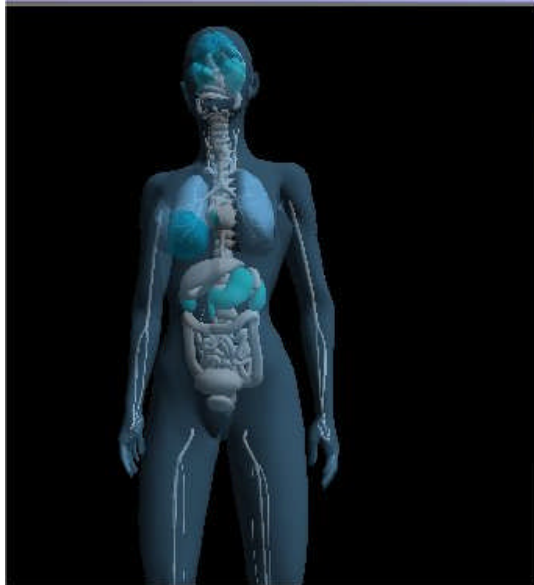


On the brain

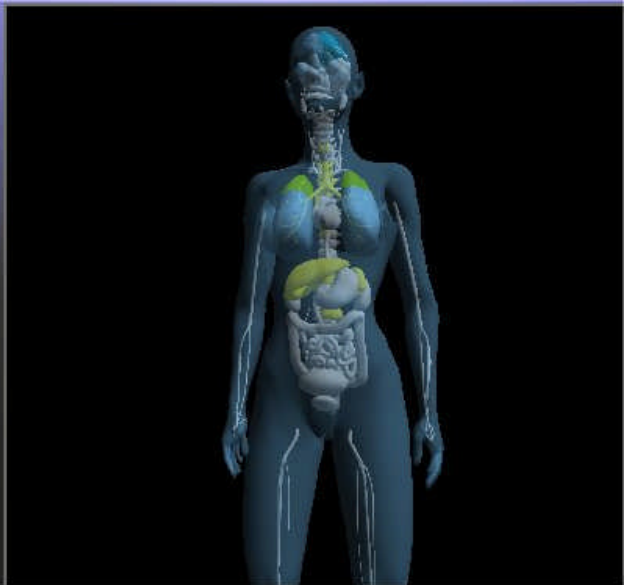


**Biofeedback Effect EIS for reduce the stress (9 minutes)**

**After**



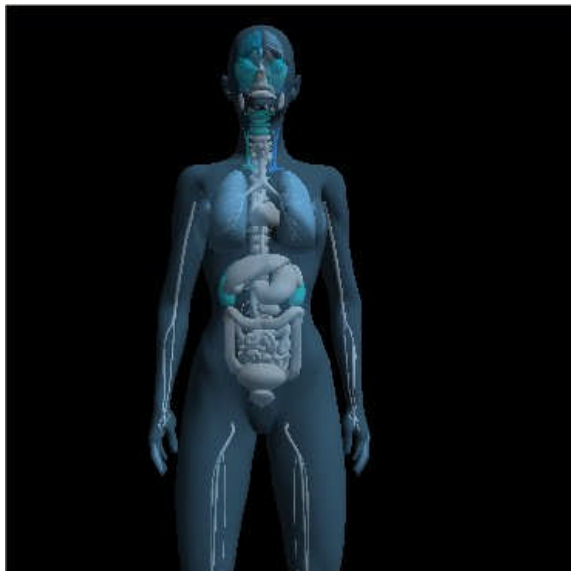
**Before**



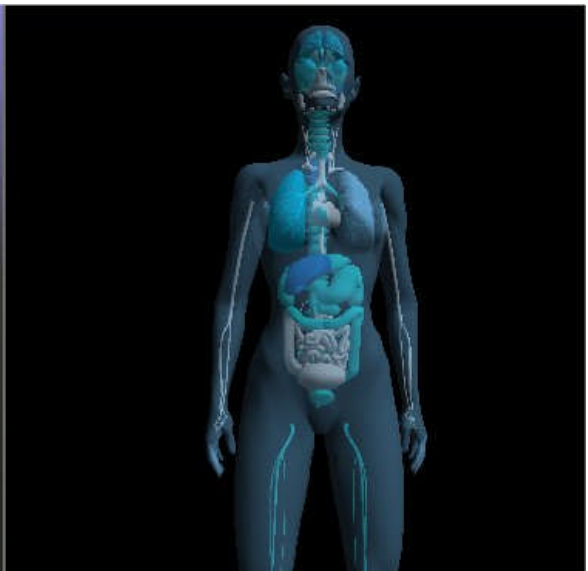
**Nutrition follow up :**

**Effect of one egg by day in the diet for a strict vegetarian (result after 6 weeks)**

**After**



**Before**



## **Conclusions**

In clinical applications, the EIS system provides:

### **Assistance at the consultation**

The patient is not always capable of objectively describing his or her symptoms. Often they exaggerate or under-estimate symptoms or choose not to speak of them because they are taboo or so old that they are part of the daily routine.

In addition, some diseases in development or established present no symptoms.

The EIS system which allows the visualization of parameters of tissues and blood helps guide the consultation and eventually helps to better understand the patient's psychological factors and, through a statistical analysis of the risk involved, to prescribe certain targeted supplementary examinations.

### **Aid to therapeutic decision making**

The modules proposed by the program such as nutrition, micro nutrition, herbal therapy, homeopathy, auricular acupuncture and somatic acupuncture come from analytic software making use of the totality of parameters of therapeutic decisions; the calculations performed by the computer are 1000 times quicker than the human brain (the computer can perform 50,000 operations each second). Nowadays practitioners who practice functional medicine are in the same position as were accountants before the adding machine. The adding machine has not done away with the accountant; it simply allows the accountant to perform his profession differently. The EIS, with its measured parameters and analytic software, can represent the same advance and change the means of exercising the medical profession into one more rational with higher mastery.

### **Therapeutic follow-up**

Through visualization of a tissue's parameters, the EIS is positioned as the first step to visualization for all treatments. Actually, whether the treatment is allopathic or functional (alternative) or nutritional or micro nutritional, the results are quickly seen... firstly at the level of cellular activity of the targeted organ and therefore at the tissue level, much later at the blood level and even later at the structural level (imagery).

In addition, this therapeutic follow-up is non-invasive and very low cost. There are no good or bad treatments. There is only a treatment adapted for each person. With a therapeutic follow-up you can, as quickly as possible, visualize if a treatment is correct for the patient... whether it is effective, adapted and if there are side effects. This aspect is important for the practitioner who can at all times control and master the treatment (efficacy, side effects, dosage) and equally for the patient who can visualize their good prescription and the control of his or her treatment.

### **Patient compliance with their treatment**

The ability to visualize by EIS modeling of organic problems in connection with certain symptoms reassures the patient. In effect, some pains or symptoms which have no explanation at the level of conventional exams can leave the patient feeling hopeless and/or helpless, since practitioners may propose no treatment, or treatments that are often difficult to understand (functional or alternative medicine). By visualizing an improvement of values by EIS modeling, the patient can better accept the treatment.

Likewise, a patient who presents with a pathology and for whom the practitioner prescribes an allopathic treatment of long duration needs reassurance of its efficacy, its correct dosage and eventually that it does not cause side effects that are more dangerous than the illness for which he or she is being treated.

After 7 years of utilization in Europe and in Asia, regularly, The EIS system finds new clinical applications.

It is currently used by all the medical specialities.

### **General medicine**

Complementary with the conventional check up examination (modeling)

Screening and regulation of targeted supplementary examination

Therapeutic Follow up of the drugs (Davenport)

Nutritional advice (nutritional program) and visualization of the effects ( modeling and Davenport)

### **Chiropractics**

Complementary with the conventional osseous examination (Spine modeling)

Muscular excitability visualization

Lactic acid

Pains visualisation in the tissue (ischemia, vasoconstriction)

Follow up immediately after the treatment with the functions FCM and follow up.

### **Pediatricians**

ADHD children (modeling)

Therapeutic Follow up of the drugs (modeling)

### **Endocrinologist**

Screening of hypothyroidism and type II diabetes (modeling, Davenport, biochemical values)

Therapeutic Follow up of the hormonal thyroid treatment and adjustment of the doses (Davenport)

Obesity, type II diabetes (Body composition)

### **Cardiologist**

Complementary with screening of cardiovascular disorders with the conventional methods (Heart modeling)

Therapeutic follow up of the cardiovascular treatment and adjustment of the doses (Davenport)

### **Psychology and psychiatry**

Depression unipolar and bipolar marker (Brain modeling and neurotransmitters)

Therapeutic follow up of the treatment and adjustment of the doses (Brain modeling and neurotransmitters)

### **Gastrology**

Complementary with the conventional methods for screening of digestive disorders (Digestive system modeling)

Therapeutic follow up of the treatment and adjustment of the doses (Digestive system modeling)

Nutritional advice (nutritional program) and visualization of the effects (modeling, Davenport)

**Urology**

Screening of prostate bladder and renal disorders (modeling)

Follow-up of the treatment and adjustment of the doses (modeling)

**Andrology**

Screening of the stress and psychological disorders related to the erectile disorders (ED) (brain modeling, neurotransmitters)

Follow-up of the treatment of the ED and treatment causing ED, adjustment of the doses (Davenport)

**Gynecology**

Screening of the stress and psychological disorders related to the anguish of sterility (brain modeling, neurotransmitters)

Follow up of the sterility treatment (modeling)

Follow up of contraceptive pills (side effects) (modeling, biochemical values, body composition)

**Oncology**

Follow up, early visualization of effectiveness, and the side effects of the chemotherapy (Davenport)

**Laboratory:** blood tests

Further information on the biochemical data (biochemical values)

**Therapists**

Visualization of the therapies and methods (modeling)

Compliance of the client by visualization (modeling)

Understanding of use of various employed methods and indications of these methods (modeling)

**Auricular and somatic Acupuncture**

Help in the research of the points (auriculogram)

Visualisation of the result (Functional control measurement)

Compliance of the patient (modeling)

**Nutritionist**

Body composition

Nutritional and micro nutritional program

Visualisation of the effects of the nutrition (modeling)

**Homeopathy**

Help in the research of products (help in homeopathy)

Visualization of the therapies and methods (Functional control measurement)

Compliance of the client by visualization (modeling)

Understanding of use of the products and implications in physiological tissue and microcirculation parameters (modeling).

**Sports Medicine**

Body composition

Clinical test of effort (Sport measurement control)



Functional check up in complementary with the conventional method

**Pharmaceutical laboratory**

Test of the products by the early visualization of the Treatment (modeling)

**Pains treatment**

Visualization of the pain and follow up of the effect of different therapy in order to reducing it.  
(modeling)

**Manufacturer, Specification developer:**  
***SOFTMED Technology***

