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WAVE EFFECTS OF MEDICAL LEECHES

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The idea of **herudotherapy wave effect** appeared as a result of practical application of medical leeches. During the sessions of herudotherapy or right after them many patients experience strange effects, fever, movement of various flows through the spine – warm, cold, sensations of different color flows, of momentary pricking, pulsation, or discomfort in different parts of the body. Patients clearly knew the state of pulsation in the places where the leeches were applied before, although in a particular session the leech was applied to a different point. It is known that once the application of a leech caused short-term reactions (several seconds) similar to titanic convulsions.

As a result, patients become interested and anxious, and, naturally, wish the doctor-herudotherapist explain this effect.

First time we tried to explain these effects on the basis of the new effect of herudotherapy in 1993, assuming that there was the phenomenon of **energy and informational influence** (EII) of herudotherapy on the human organism. We applied classical variant of Acobane method (acupuncture method) in this work. In 1995 Moscow researchers I.P. Kulikov and G.I. Nikonov acknowledged using “frame technique” that after herudotherapy sessions a patient’s biofield changed its size. Unfortunately, it is difficult to reproduce these results because of expressed subjective dependence of the results on the characteristics of operator (bioenergotherapist). We have applied the Kirlian method (or “gas discharge visualization” technique – GDV) for further investigation of EII phenomenon.

Instrumental methods based on the Kirlian effect are nowadays ones of a few enabling to estimate not only the state of some organ or system, but the state of the whole organism in the interaction of particular parts with one another .

As a result of such an approach it has been acknowledged that herudotherapy possesses expressed EII upon patient, and the registration of dynamics of change of glow area of GDV-grams in the process of herudotherapy gives important diagnostic information on the state of health of a patient, including the stage of clinical manifestation of a disease.

As soon as experimental proofs of the existence of EII phenomenon have been gathered using gas discharge visualization (GDV) technique, it has become more and more obvious that the nature of EII phenomenon has wave character, i.e. either **acoustic** or some other effect might be in its basis.

Such effects of herudotherapy would enable to explain the abovementioned subjective sensations, experienced by many patients during herudotherapy sessions, and would moreover enable to give scientific interpretation to these sensations.

Acoustic effect of herudotherapy was first experimentally proved by our group.

The present work summarizes experimental data received within recent 10 years of

research and within the last two years at Physical and Technical Institute of A.P.Ioffe of Russian Academy of Sciences. The latter has led us to the discovery of **energoinformational (wave) effect of herudotherapy** based on the phenomenon of acoustic emission of *Hirudo medicinalis* – medical leech.

The proof of **energoinformational (wave) effect** of herudotherapy enables to correctly approach quantitative estimation of the reaction of human organism on wave influence of a leech and try to classify various types of energoinformational reactions of patients to the influence of medical leech and distinguish four types: **superergic, hyperergic, normergic, and hypoergic**.

Moreover, these works has become the basis for the creation of the conception of **human energy and informational diseases**.

Materials and methods.

“GDV Camera” instrument was used for the research. Diagnostics of patient’s state was carried out before a herudotherapy session, right after it and in 30 minutes after the end of a herudotherapy session. I.e. initial, intermediate (right after the end of session) and final (in 30 minutes after the end of session) GDV area was determined. Leeches were applied to the mucosa near anal orifice of patients.

Analogous approach was realized investigating white mongrel rats. Preliminary experiments demonstrated that the most reproducible materials could be obtained registering the GDV glow of animal’s tale. Leeches were applied to the area of anal orifice of experimental animals, and a corresponding amount of blood was taken from control animals with an imitation of pain syndrome. Experimental and control group consisted of 5 animals, which remained the same during the whole experiment. The observation period made up 5 months; herudotherapy sessions were carried out once a week during the whole observation period. A hemorrhage volume was determined by way of weighing the leech before and after a herudotherapy session. Then certain amount of blood of a control animal was taken into Eppendorf test tube, i.e. the experiments were maximally standardized. GDV parameters were taken with the help of “GDV+” device from animal’s tale before, right after, in one hour and in two hours after a herudotherapy session.

We assumed that the **acoustic emission of a leech on the tissues of the body** could be a mechanism of treatment. Experimental investigation of the effect of acoustic waves emitted by leeches in the process of sucking the blood was carried out in the laboratory called “Physical basics of predicting destruction of solid bodies” of the A.P. Ioffe Institute of Physics and Technics of Russian Academy of Sciences.

A piezoelectric converter GT-200 produced by “Globaltest” company, Saratov, Nizhni Novgorod region, was applied as a sensor of ultrasonic vibrations. An elastic wave coming to the sensor was transformed in it into an electrical signal. Afterwards this signal came to the preliminary and main amplifiers. Amplification factor of amplification path was 60 decibel. At the same time the signal came to the block of formation of oscillograph pulse driver. A rectangular pulse was formed in this block; it came to oscillograph and enabled to reliably launch the received signal. The mode enabling to record 2048 points in one signal and 265 levels in amplitude was used in the work. Oscillograph C9-8 was connected with an IBM PC with the help of a standard interface IEEE-488. PRIEM software developed by senior staff scientists of the abovementioned laboratory S.A. Stanchitz enabled to transfer digital information from the oscilloscope memory into the computer. As a result binary files, each corresponding to an oscillo-gram, were generated by computer hard disk. Osc –98 program developed by S.A. Stanchitz allowed restoring an oscillo-gram form from binary

files in computer and carry out spectral analysis of binary files by means of fast Fourier transformation.

Piezoelectric converter GT-200 was attached to the back wall of an ear conch of a person with the help of glue. The ear was tightly clasped to the head by means of elastic bandage. A medical leech sucking the blood was applied to the opposite side of the ear conch.

Results and discussion

Special tables of Korotkov were used for the analysis of results received with the GDV technique. These tables enable to determine the zones (or systems) of organism which react most of all to the disturbance process (in the given case - herudotherapy). These tables correspond to topology of various organs and systems represented in phalanges of fingers, which had been obtained basing on numerous statistical investigations.

Fig. 1 shows GDV images of fingers before and after a herudotherapy session (a) and results of their computer processing (b) for patient U.A., 11 years.

Diagnosis: convulsive readiness of brain, focus of excitation in the left cerebral hemisphere according to EEG data.

Initial state according to GDV data (fig.1a): expressed energy deficit. Practically no glow of fingertips, a typical picture of a pronounced psychological stress.

Powerful energy outbursts can be seen in the right hand, which corresponds to the area of intestines, organs of small pelvis, pulmonary and endocrine systems.

State after a herudotherapy session according to GDV data (Fig.1a): principal change of the whole picture – strong increase of energy in all systems, removal of stress component, clearer manifestation of diagnostic characteristics. The received picture is characterized by significant heterogeneity of energy, weak supply of the head area, blocks of energy circulation in all systems, weak work of gastrointestinal tract, and unbalanced endocrine system. Aggressive outbursts in the area of small pelvis and lungs.

Fig. 1b demonstrates positive dynamics of growth of fingertips' glow areas after a herudotherapy session. Most significant growth of the glow area is registered in the first finger representing the head area, i.e. the zone where the cause of the disease is located – focus of convulsive readiness of brain.

Fig 2 represents GDV images of fingertips before and after a herudotherapy session (a) and results of their computer processing (b) for patient M.A., 62 years.

Diagnosis: adenoma of prostate (gland), Courvoisier's gallbladder.

Initial state according to GDV data (Fig.2a): weak energy field with many holes, pronounced irregularity of glow, blockage of energy circulation in all systems. Zones:

Cerebral zone – weak energy field with marked background. Insufficient energy supply of all head systems;

Throat – thyroid gland – absence of glow, separate points;

Spine – strong outbursts in thorax zone, blockage of energy flow in other spinal sections;

Gastrointestinal tract – pronounced blockage of all sections of intestines;

Reproduction system – deficit of energy flows in combination with singular outbursts and stress rings in forth finger of the right hand;

Endocrine system – state of pronounced disbalance;

Vascular system – state of pronounced disbalance;

Respiratory system (area of lungs) – pronounced deficit of energy flows.

State of stress after a herudotherapy session according to GDV data (Fig.2a):

significant change of the whole picture. Growth of energy in all systems. Pronounced outburst in the area of reproduction system. The strongest reaction: head zone, zones of organs of small pelvis, endocrine system.

Basing on the observed results (a typical picture of change of GDV parameters under the influence of medical leeches from many patients examined), an irregular dynamics of change of GDV parameters in the process of EII of leech on the human organism was found. This process had several stages, quite typical for a whole series of patients, which allows proposing a hypothesis on trigger character of observed effects of leeches, which cause specific reactions in the organism of patients.

At the same time, psychogenic influence of doctor on the presented results, i.e. suggestive effect in the system “doctor – patient”, can't be left out. In order to solve this problem experiments with white mongrel rats were carried out.

Fig. 3 represents results of 10 successive measurements for experimental and control rats. The graphs demonstrate quite good reproducibility of results (limits of deviation from average value make up 6 – 14%, which is a good result for such a measurements).

Fig.4 show that if the value of glow area of GDV-grams of experimental rats exceeded analogous value for control rats only by 35 % in the first experiment (23.01 and 06.02), this difference made up from 300% to 500% in subsequent experiments. (13.02, 24.04 and 08.05). These results demonstrate that after several leech sessions the influence of leech to rat increases.

So we may conclude the leech therapy influence doesn't depend on patient's consciousness and doesn't result from suggestion (suggesting healing effect to patient), but is a consequence of influence of medical leech on human and animal organism.

Discovered acoustic emission of medical leech, lying in the basis of the EII phenomenon, enabled us to approach quantitative estimation of this phenomenon, i.e. the problem of classification of patients by their ability to react EII.

After a leech was applied to the ear, the equipment started registering acoustic signals, which had been absent before applying the leech. The experiment lasted 45-50 minutes. 500-550 signals could be recorded during this time. All the registered signals lied within frequency range 40-250 kHz. After the process of sucking the blood was over (when the leech fell away) the device registered ultrasound emission for another 5-6 minutes, and then it stopped, fig.5.

We examined 240 patients, including 56 men (23,3%) and 184 women (76,7%). These results are represented in fig.6. Quantitative estimation of these results enabled us to classify patients by their response to applying the leech – “energy-informational response”:

Super-ergic effect – maximal growth of area of fluorescence (glow), making up more than 10% with respect to the initial state (fig.7);

Hyper-ergic effect – growth of fluorescence area makes up from 5,1% to 10%;

Norm-ergic effect – growth of fluorescence area makes up from -1% to 5%;

Hypo-ergic effect – growth of glow area makes up from -1,1% and lower, i.e. we record the increase of glow area value.

Basing on the results received a conclusion can be made that the types of energy-informational response of patients to the influence of leeches are different: most often we meet norm-ergic type of reaction (**39%**), hypo-ergic type – **32%**, hyper-ergic - **15%**, and super-ergic – **14%**.

Actually, we developed the test, which enables to qualitatively and quantitatively estimate the state of the main functional systems of organism as a result of stimulated influence of medical leech on human organism, based on the phenomenon of acoustic emission.

We call this test **herudotest**.

It is worth mentioning that during long-term observation of patients in the process of herudotherapy (several months) we observe pronounced EII of all patients regardless of their initial reaction to the influence of leech.

Apparently, EII is one of the most powerful medical effects of herudotherapy, since it has the character of system influence on all human organs.

What does this division give us in practical sense? A lot.

Long-term observation of patients demonstrates that **super-ergic** variant of reaction is typical of patients with rapid type of clinical reaction to treatment. I.e. a doctor can predict with certain high probability that for such patients clinical improvement will take place quicker than for patients with **norm-ergic** variant of reaction to a medical leech.

Patients with hypo-ergic type of reaction often have spine diseases, i.e. different variants of vertebropathy (pronounced osteochondrosis, result of spine trauma, especially in sacral zone).

Here it is worth recalling that in the works of Aurveda (ancient medicine of India) the human spine was considered as the main channel of energy flow – sushumna. Therefore, many forms of somatic pathology result from the pathology of spine.

Thus, the received results enable to conclude:

New unknown before phenomenon of acoustic influence of medical leeches on the tissues and the organism as a whole was found. This phenomenon is the basis of EII of medical leeches on the human organism, followed by resonance effect. Thus, that involves the change of GDV glow and other parameters, registered by other techniques.

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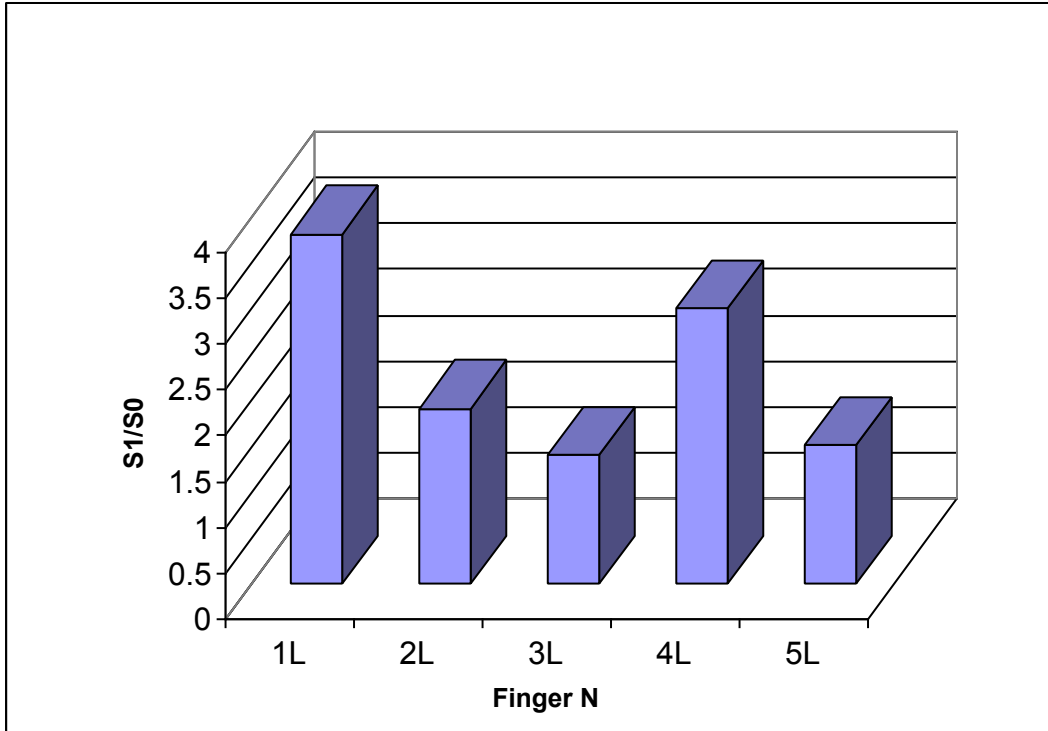


Fig. 1. GDV-grams of fingers before and after leach treatment (a) and relative changes of Area (pixels). Patient U.A. 11 years old.

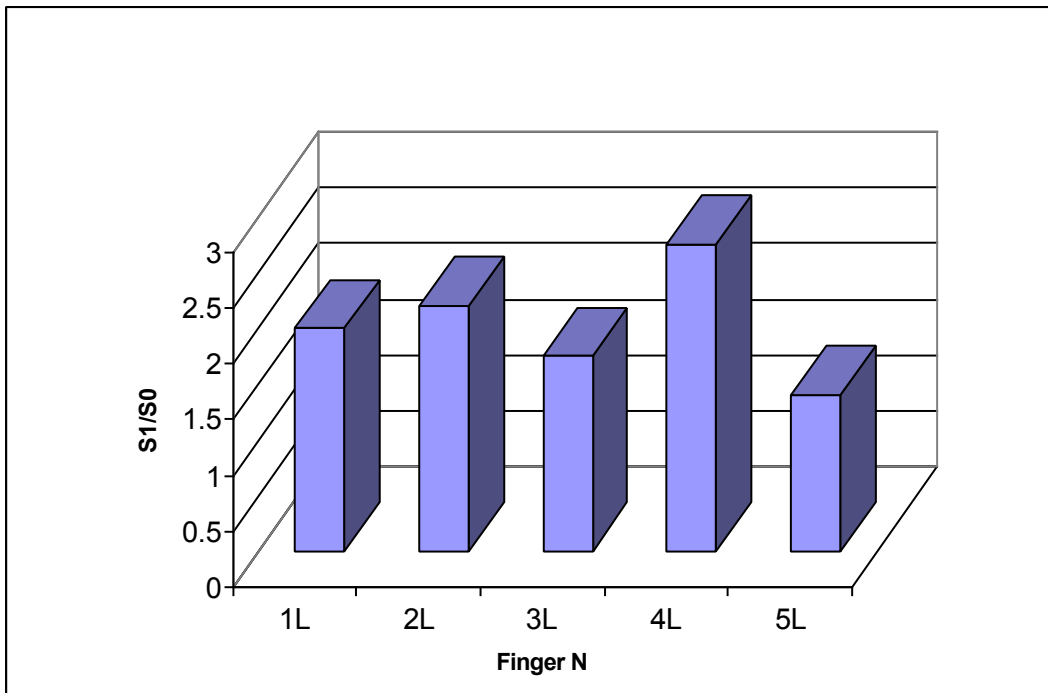


Fig. 2. GDV-grams of fingers before and after leach treatment (a) and relative changes of Area (pixels). Patient M.A. 62 years old.

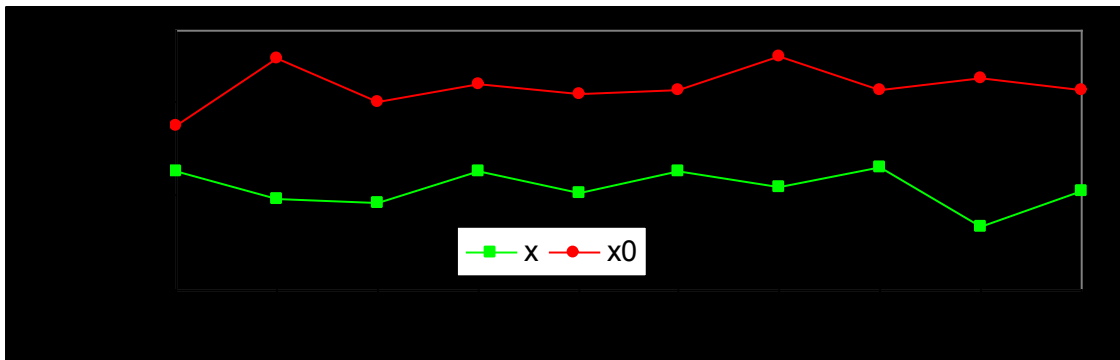
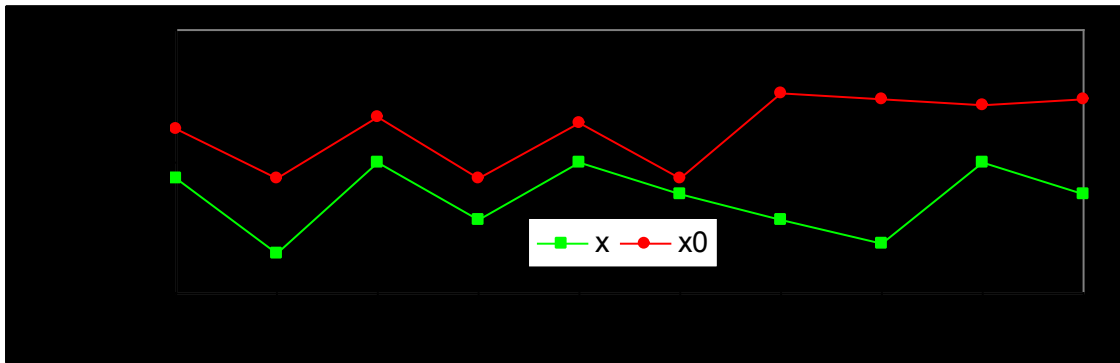
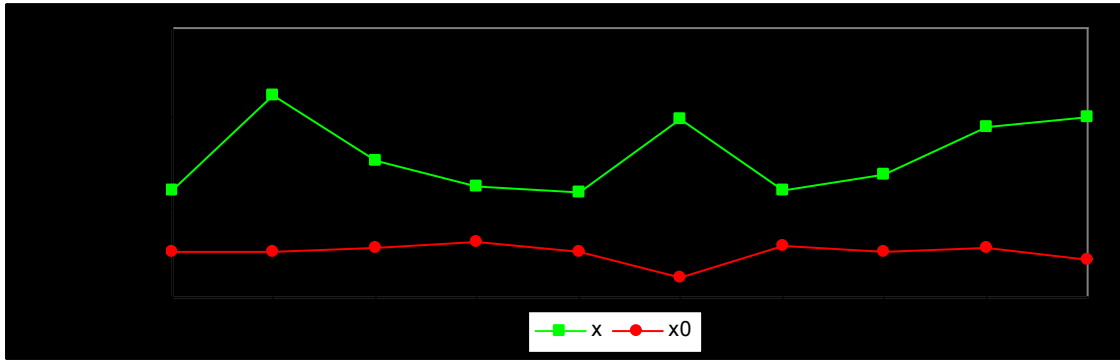
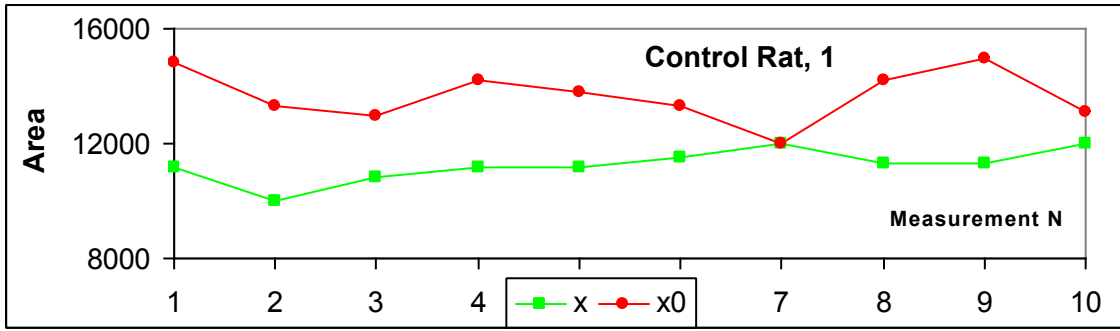


Fig. 3. 10 measurements of GDV Area (pixels) for control and experimental groups of white rats. x – initial; x0 – after bleeding (control) of leach sucking (experimental).

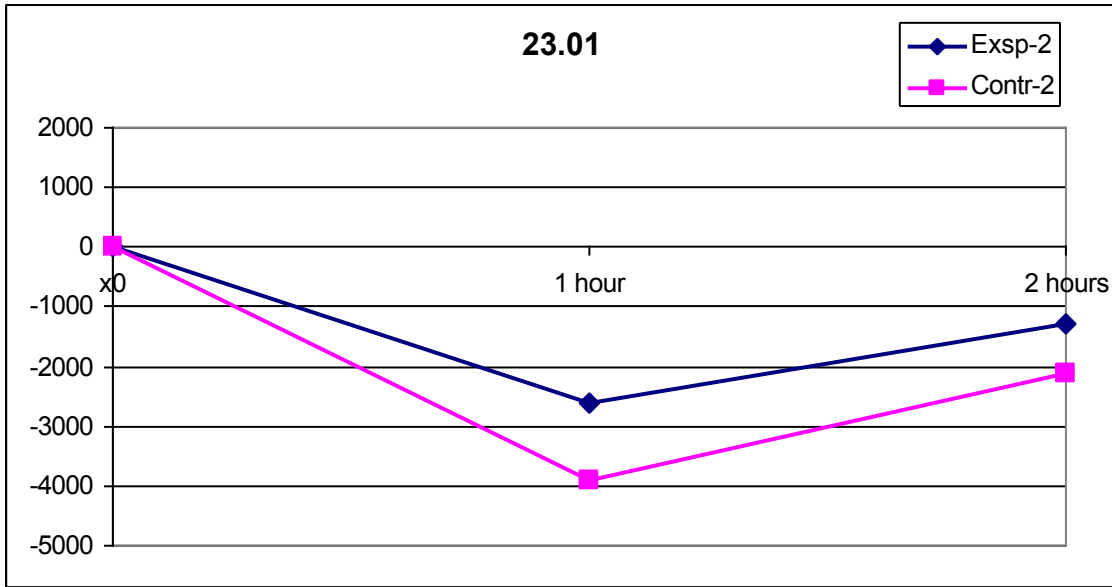


Fig. 4. Relative change of GDV Area for control and experimental groups of white rats after bleeding of leach sucking at different days. Averaged on 5 rats.
x0 – initial; 1 hour and 2 hours after bleeding (control) of leach sucking (experimental).

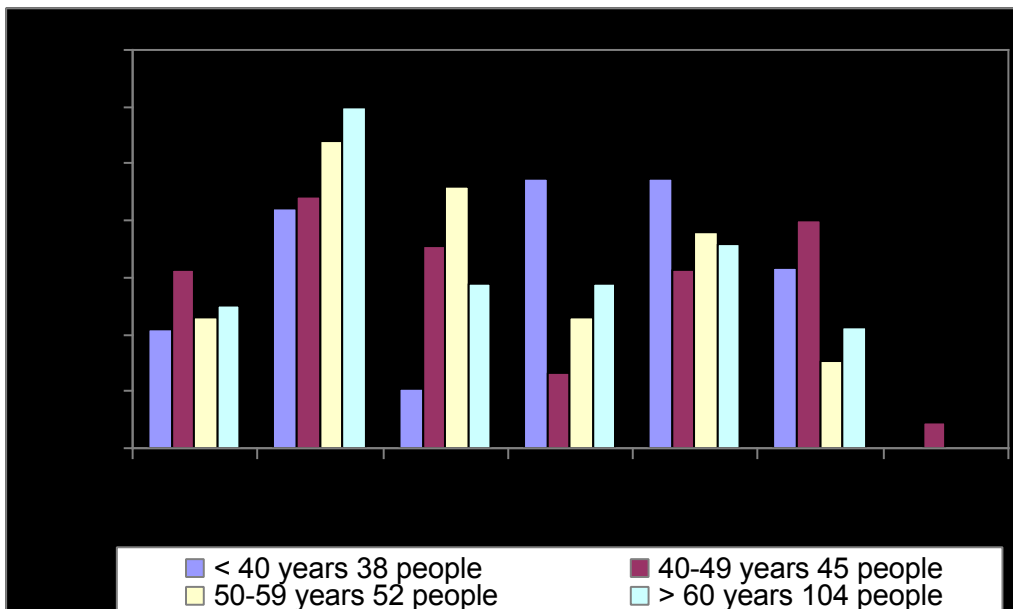
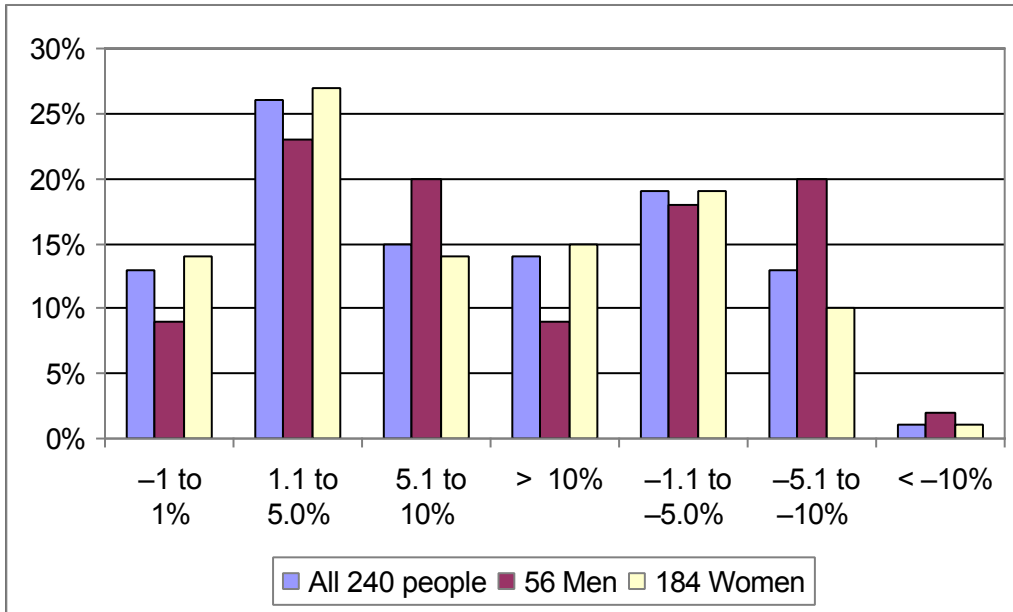


Fig. 6. %% of Leach Therapy Influence to People (A) and Age Dependence of %% of Leach Therapy Influence to People (B).

%% of Leach Therapy Influence to People

Table 1.

	People All		Men		Women	
	240		56		184	
-1 to 1%	30	13%	5	9%	25	14%
1.1 to 5.0%	63	26%	13	23%	50	27%
5.1 to 10%	37	15%	11	20%	26	14%
> 10%	33	14%	5	9%	28	15%
-1.1 to -5.0%	45	19%	10	18%	35	19%
-5.1 to -10%	30	13%	11	20%	19	10%
< -10%	2	1%	1	2%	1	1%

Age Dependence of %% of Leach Therapy Influence to People

Table 2.

People	All	Men	Women	< 40 years	40-49 years	50 - 59 years	> 60 years
	240	56	184	38	45	52	104
0 to 1%	13%	9%	14%	10.5%	15.6%	11.5%	12.5%
1.1% to 5.0%	26%	23%	27%	21%	22.2%	27%	30%
5.1% to 10%	15%	20%	14%	5.3%	17.8%	23%	14.5%
> 10%	14%	9%	15%	23.7%	6.7%	11.5%	14.5%
-1.1% to -5.0%	19%	18%	19%	23.7%	15.6%	19%	18%
-5.1% to -10%	13%	20%	10%	15.8%	20%	7.7%	10.6%
< -10%	1%	2%	1%	0%	2.20%	0%	0%