

ABSTRACT

Bioresonance treatments have emerged as a treatment method that has been used quite frequently recently in the world and in our country. It was first developed by the German Dr Franz Morell, a medical doctor, homeopathy and acupuncture physician, and Erich Rasche, an electronic engineer, in the 1970s. Although the idea that small electrical vibrations could create certain biological effects in the whole human was put forward with the first studies, the idea that these vibrations were actually immeasurably small and that the "white noise" measured when there was contact between the device and the person was actually just an assumption in those years. Resonance therapies see the living organism as a system consisting of electromagnetic vibrations and these treatments, which are carried out with the help of devices, aim to make energy-based changes in the organism. Basically, bioresonance or bioenergy stimulation treatments consist of a combination of two different methods, homeopathy and acupuncture, which are accepted as traditional and complementary medicine methods and anti-obesity properties, and recently for its anticancer activity against various types of cancer. For this reason, the basic principles of these two methods are important in order to basically explain the use and purpose of the bioresonance device. Bioresonance is the resonance of the acupuncture system (acupuncture meridians) in the body with the bioenergy (frequency) of the homeopathic preparation (or the bioactive substance placed in the device) placed at the entrance of the device without using any acupuncture needle or any other acupuncture method. The function of the device (like a radio) consists of transmitting the frequencies known to be emitted by the substance-specific substance to its surroundings to the body side. The aim here is to try to change the meridian system/energy circulation in the body (which can also be called electronic homeopathy and as we know from homeopathy) by using the energetic properties of substances. Experience gained over time, it has been thought that calling this method as the stimulation of bioenergy is a more accurate definition than all other names. In this review, it is aimed to explain the working principle, features, differences, usage areas and studies in the literature of this treatment method.

Keywords: Integrative medicine, electroacupuncture, homeopathy, bioresonance.

INTRODUCTION

Resonance is a physics term of French origin. For the sake of clarity, the term resonance can be explained as the harmonization of two frequencies. The process performed in resonance therapies is a treatment model that aims to interact with the body with external vibrations and create a change in the energetic nature of the body. There are different types of devices and methods with different technologies under the name of resonance therapies (1).

Bioresonance was first introduced and developed in the 1970s by the German doctor of medicine, homeopathy and acupuncture Franz Morell and electronics engineer Erich Rasche. This developed device consisted of a transmitter in electrical contact with homeopathic medicines and a receiver that received this signal which was in contact with the person's acupuncture point. When this system was activated, the electrical resistance of the person's acupuncture points was also measured (with the help of a separate device) (2).

What this device showed was that there was a change in the electrical resistance of the acupuncture point when the bioresonance system was activated and the appropriate drug was placed in the device and the signal was sent. It was concluded from this observation that the efficacy of the homeopathic medicine was via very low electromagnetic vibrations (between 1 Hz and 106 Hz available at that time) and that this effect could be demonstrated by changes in resistance on one's acupuncture

points, and that such low-level electrical vibrations were a part of information transfer in humans (1)(3)(4). This view, which was put forward as a theory in 1975, also formed the starting point of bioresonance devices.

Although the idea that small electrical vibrations could create certain biological effects in the whole human being was put forward with these early studies, the idea that these vibrations are actually immeasurably small and that the “white noise” measured when there is contact between the device and the person was actually just an assumption in that period. In the following years, further theoretical explanations of this phenomenon and its mechanism were made by the German professor of biophysics Fritz-Albert Popp. Popp was the first to demonstrate that the low frequency electromagnetic vibrations emitted by the human body could be explained by the Bio-photon theory. While explaining bio-photons, he argued that living things emit electrical vibrations at very low frequencies and that these vibrations (photons) are a high-level control mechanism for life (5,6,7,8).

Basically, bioresonance or bioenergy stimulation treatments consist of a combination of two different methods, homeopathy and acupuncture, which are accepted as traditional and complementary medicine methods. For this reason, the basic principles of these two methods are important in order to explain the use and purpose of the bioresonance device.

Acupuncture

Acupuncture was first introduced to the West by Dabry (1853) and Morant (1927) (9)(10).

The Chinese suggested that in every living thing there is a flow of energy responsible for life. They called this energy the Chi force. Chi flows through the body in channels called acupuncture meridians. Acupuncture treatment basically works by interfering with the resistance points (acupuncture point) on these energy channels. The acupuncture point is a specific point on the skin that reflects the ailments in the internal organs. The same acupoint can also be used to treat disorders in that organ. The location of each point is specific and has certain definite therapeutic properties. Treatment at these points can prevent the development of diseases in the relevant organs. Most acupuncture points lie along the acupuncture meridians. Each acupoint can be used to treat a variety of diseases, as it affects several organs both through the prime meridians and their flanks (11).

Some acupuncture meridians are negative in orientation while others are positive in orientation. The Chinese define them as Yin and Yang. Apart from this, in the principle of acupuncture the Five Elements (symbolic names: fire, earth, metal, water and wood) energy longitudes; full and empty organs theories are used for treatment (12). Basically, in the light of these theories, the acupuncture philosophy suggests the theory that an organic pathology may trigger a psychological disorder and that a psychological disorder may be the cause of an organic pathology (13).

Homeopathy

The most important principle of homeopathy is the alike cures the alike (*similia similibus curentur*) principle. This principle forms the basis of treatment. According to the principle of similarity, the substance that causes some complaints in a healthy person treats the patient who comes with the same complaints at very low doses. This situation is similar to vaccination, but vaccination is done to healthy individuals and as a result, protective antibodies against the virus in question develop. In homeopathy, the patient with some complaints is given the substance (diluted) that causes the same complaints. The

determination of the appropriate substance depends on the patient's complaints. If there is no complaint, no medicine is given. Therefore, in homeopathy, there is no preventive remedy for a disease or that can be given preoperatively (14).

The second principle is the minimal (infinitesimal) dose. The word "infinit" means infinity. Homeopathic remedies are systemically diluted millions of times, resulting in the substance often no longer detectable. The patient receives the frequency of the drug, or rather its information. The drugs given in this way do not have side effects. As the dilution increases, the transition from the material level to the frequency level increases and the effect of the homeopathic medicine (high potencies) made with such high dilutions is expected to be deeper (15).

The third principle is the principle of Individuality. Regardless of the diagnosis made according to this principle, it is important with which subjective findings the patient experiences the disease in question. For example, the medication given to five of the 5 patients with a diagnosis of hay fever will be different. Because besides the general findings of hay fever, the time of increase or decrease of the complaints, the patient's nutrition, the connection with the patient's psychology, the patient's temperament and additional complaints will be different. All these differences help to find patient-specific treatment (16).

The fourth principle is the principle of Integrity. Not only the patient's complaints, but also accompanying complaints, information about lifestyle (nutrition, sleep, sexual life), disease history and temperament are handled, and the treatment is done as a whole, mental, emotional and physical, by finding the medicine that fits all the symptoms (17).

The fifth principle is Proving. All of the substances used in homeopathy have been tested on healthy people. Volunteer subjects used the drugs and noted their findings in detail. These records were collected in books called *Materia Medica*, which contain information about drugs (18).

Thanks to these studies, important information has been obtained about what and how each drug treats at low doses, as well as the toxic effects of the substances.

Basic Working Principle of the Device

Bioresonance devices work with a principle prioritizing the combination of these two principles, in short, the acupuncture system (acupuncture meridians) in the body, without using any acupuncture needle or any other acupuncture method, the homeopathic preparation (or the bioactive substance placed in the device) that is placed at the entrance of the device carries by its own nature resonance with the bio-energy (frequency).

The function of the device (like a radio) consists of transmitting the frequencies known to be emitted by the substance-specific substance to the body. The aim here is to try to change the meridian system/energy circulation in the body (which can also be called electronic homeopathy and as we know it from homeopathy) by using the energetic properties of substances. Experience gained over time tell us that calling this method as the "stimulation of bioenergy", is a more accurate definition than all other names.

This phenomenon emitted by the human body, formerly called "white noise" and later explained by "bio-photon" theories, can also be defined as bio-energy, and the effects created by the devices used for this purpose can also be called "bio-energy stimulation".

Bioresonance devices designed to affect this basic theory and the bio-energetic field mentioned here have been used by therapists with a holistic approach for 50 years all over the world. Before we move on to scientific studies showing the effectiveness of this method, we need to explain the process with these devices a little more. Although there are some differences between the working principles of these devices, the general operating modes of the devices are basically in few ways.

APPLICATION MODE – 1

MODE A: In cases when there's no change in the information of bio-energetic information of the input cartridge (the place where the substance is placed): These are called applications made in A mode. It works by giving the energetic information of homeopathic medicines to the system (Fig.1).

MODE A – HOMEOPATHIC UPLOAD

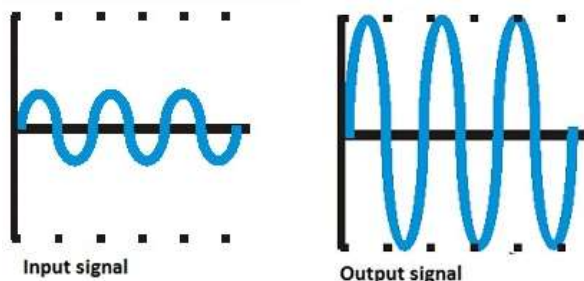
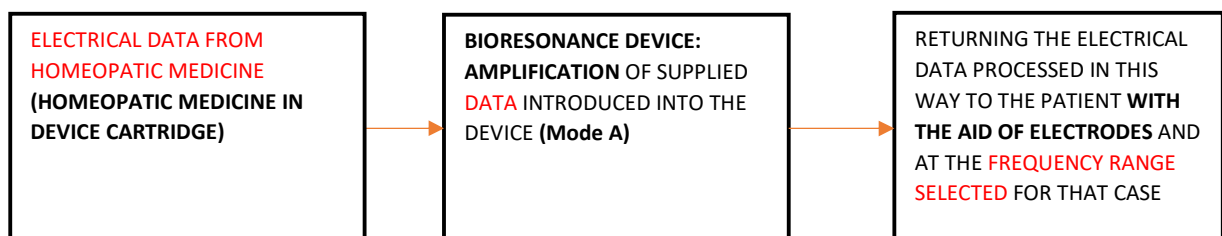


Figure 1. The scheme of operation of the bioresonance device in mode A

Application example for this mode

Interfering with bioenergy (bio-photons) through examples of homeopathic medicines: For this, homeopathic medicine is placed inside the device (in the inlet cartridge where the substance to be used as a frequency sample is placed) and the device is operated with the knowledge of this homeopathic medicine. The device transmits the energy/electrical vibration emitted by the homeopathic medicine to the person (with the help of the electrodes in the person's hands) in A mode, that is, without changing it.

APPLICATION MODE – 2

AI MODE: Treatments in which the bio-energetic information defined by the input cartridge (the part where the substance is placed) or the input electrode (electrode-antenna placed on the body) is

inverted at stationary phase (inverted frequency information to form a mirror image). These are called Ai mode (invert).

The hypotheses underlying this are:

- chronic
- chronic degenerative or
- acute diseases
- and non-physiological changes in the body

are accompanied by non-physiological electrical vibrations.

As the basic mechanism of bioresonance, pathological/blocking vibrations are erased by mirror images added to the system with the help of the "inversion/inverting" process performed with the device (3). The process of erasing information by means of inverted copies follows the analogy in physics that when an inverse (full mirror image) is added to a wave, the first wave will be erased by interference (Fig.2.).

Ai MODE – DELETION

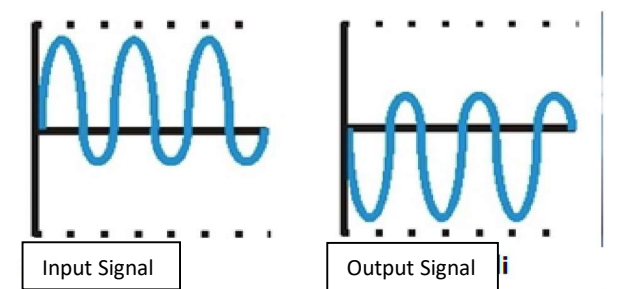
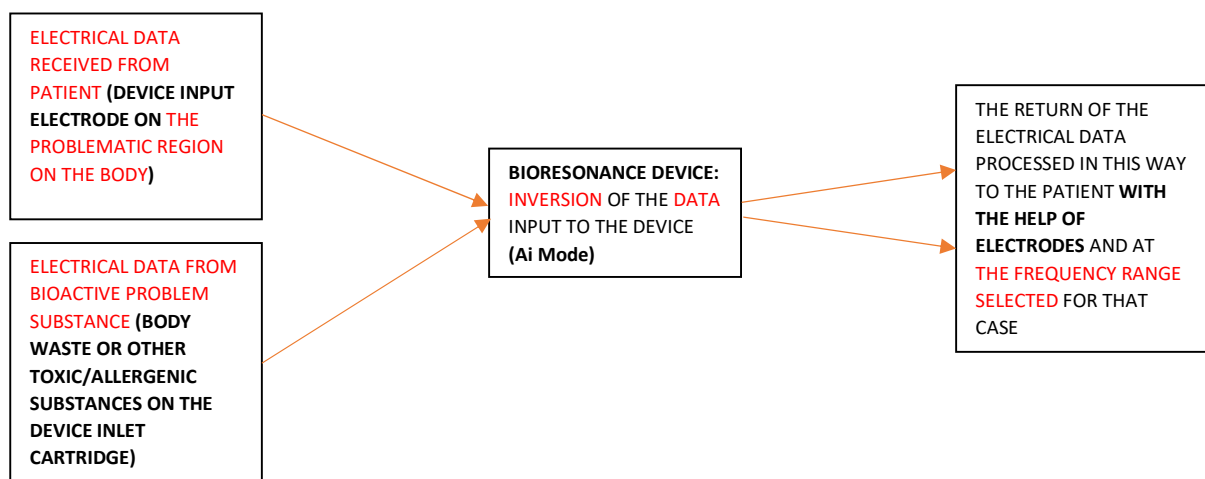


Fig.2. Working scheme of bio-- resonance device in Ai mode

Application example for this mode

- a) **Interfering with the bioenergy (bio-photons) through the problematic body secretions of that person:** For this, a pathological body secretion sample (for example, discharge from an infected wound) is placed inside the device (into the inlet pad where the substance to be used as a frequency sample is placed) and the device is operated on this data. The device works through the energy/electrical vibration that the pathological body secretion or waste spreads around, but this time the device inverts (creates a mirror image) by keeping the frequency phase constant over the frequency/energy it receives from this data. The aim is to provide the elimination of pathological frequencies by giving a full mirror image to the system.
- b) **Interfering with the bioenergy (bio-photons) through the data received from the antenna/electrode placed on the problematic/diseased body parts:** For this, an electrode connected to the device as an input is placed on the disease/problem area on the body and the device is operated in this way. This time, the device inverts (creates a mirror image) by keeping the frequency phase constant over the frequency/energy it receives from the body (over the problem area). The aim is to eliminate the pathological frequency (energetic disorder) by giving a full mirror image to the system.
- c) **Interfering with bio-energy (bio-photons) through substances that are thought to be addicted or polluting the person's body.** For this, the relevant substance is placed in the device and the device is operated over this data. The device works on the energy/electrical vibration emitted by this substance, but this time the device inverts (creates a mirror image) by keeping the frequency phase constant over the frequency/energy it receives from this data. The aim is to eliminate the pathological frequency (energetic pollution) by giving a full mirror image to the system.

The above-mentioned operations can be performed over the entire frequency range where the device is active, as well as over the frequency ranges decided by the therapist. The effect of the procedure can be measured by physicians who make acupuncture point resistance measurements by using different devices produced for this purpose. The device is not an active therapeutic but a catalyst that can create changes in the energetic state of the body. This method can only be used to stimulate the self-healing mechanisms of the person. In the whole of bio-energy, it is not possible to create an effect that can be defined as a side effect, except to strengthen the balance of the person. Therefore, no side effects were reported in any of the scientific studies presented below.

The strength of the hypotheses regarding the mechanism of action

Today, the explanation model described above regarding the mechanisms of action of bioresonance therapies cannot be explained by the classical medical knowledge taught in universities; because the principles of both homeopathy and acupuncture are not a concept that has found a place in the current medical literature. However, the effectiveness of this method has been proven by scientific studies on different disease groups. Even if the mechanism of action of this method is not fully understood with our current knowledge, this method can still be considered as a treatment and the best example of this is homeopathy and acupuncture itself. When the literature is examined, bioresonance has been included in both preclinical and clinical research for a long time.

Preclinical Studies

In the light of these basic principles, different uses of bioresonance have been studied in many preclinical studies to explain the application principles and evaluate its usage areas.

Thomas et al. (2000) on the activation of human neutrophils by electronically conducted phorbol-myristate acetate (PMA); showed that when a source tube containing PMA is placed on a coil connected to an appropriate oscillator, and several meters away another coil with neutrophils in a tube connected to the same oscillator produce superoxide. It was concluded that this effect does not occur when an inactive PMA analog is present in the source tube (19).

Korembaum et al. (2006), 7 homeopathic nosodes were evaluated in a study to confirm the effect of electronic-homoeopathic transcription using absorption spectroscopy. In the comparison made between them, it was concluded that there was a significant difference between them and the placebo group, and electro-homeopathic transfer was possible (20).

Heredia-Rojas et al. (2011) investigated the inhibition of trophozoite growth of *Entamoeba histolytica* and *Trichomonas vaginalis* with Metronidazole electro-transferred water. In this study, it was reported that a statistically significant decrease in the growth of both *E. histolytica* and *T. vaginalis* trophozoites was observed after axenic cultures were treated with water samples processed in a bioresonance device using a special procedure called "substance-to-substance transition" (21).

Areas of Usage

It is seen that bioresonance treatments have been tried in the literature for many different indications in clinical studies. Allergies appear to be the first field of use related to bioresonance, and therefore it is seen that clinical researches are carried out on the subject. However, in the light of the fact that different areas have been tried in preclinical studies and the positive results obtained by practitioners for different indications on a case-by-case basis, studies on the field of use have also been revealed in different areas.

Allergy and Asthma

Yang et al. (2004) divided the patients into two groups in their study on allergic bronchial asthma patients. While the first group received only bio-resonance treatment, the second group received routine treatments (such as anti-allergics, corticosteroids). As a result, the patients were evaluated 6 months after the termination of the treatment and it was shown that statistically significant results were obtained in the group receiving bio-resonance therapy (5).

Huang et al. (2005) in his study on allergic rhinitis and allergic bronchial asthma patients; the patients were divided into 3 groups. In Group 1, only bioresonance treatment was applied in the newly diagnosed patient group (n=63). In the patient group (n=54) who were resistant to the routine treatments in the 2nd group, only bioresonance treatment was applied. In Group 3, only conventional treatments (such as anti-asthmatics, corticosteroids) were given to newly diagnosed patients (n=55). All three groups were evaluated according to normal distribution in terms of age, gender and indication. The patients were re-evaluated 6 months after the end of the treatment. It was concluded that the efficacy in Group 1 and Group 2, which received bioresonance treatment, showed better results than conventional treatments. It was stated by the authors that bio-resonance therapy has no side effects and is at least as effective as

conventional therapies, and its use was recommended in patient groups who did not respond to conventional therapy (6).

Feng et al. (2005) in a series of 150 patients, it was concluded that the use of bioresonance in the treatment of allergy in the pediatric patient group was effective and did not have any side-effect profile (22).

Liu et al. (2013), in a randomized controlled study conducted in 36 patients diagnosed with allergic rhinitis, it was shown that there was a significant difference in symptoms and in dermatophagoides pteronyssinus specific IgG4 levels (23).

Although there is no comprehensive observational or randomized controlled study in the literature, it has been shown that bio-resonance therapy is beneficial in studies related to its use in allergy.

Pain, Arthrosis

Arthrosis is one of the other indications that bioresonance is reported to be effective in the literature. A controlled study was conducted by Maiko and Gogoleva (2000) on 35 patients on the efficacy of bioresonance therapy in arthrosis patients. According to clinical evaluations, when compared with conventional treatment in which joint pain, joint function, blood analysis, and well-being were evaluated in the study, it was shown that an effective improvement was achieved in 94% of the patients with bioresonance therapy, and this was statistically significant. In addition, when bioresonance therapy and conventional therapy were evaluated and compared with arthrosonography, the success rate was 75% and a significant improvement was observed. They concluded that the treatment effect was longer and more permanent in the group receiving bioresonance therapy. In addition, the authors stated that the tolerance of the patients to bioresonance therapy was good and no side effects were observed (24).

Fibromyalgia

Fibromyalgia is another area where bioresonance is used for pain control. In a controlled study conducted by Gogoleva(2000) on this patient group, they investigated the effectiveness of bioresonance therapy. The patients were examined in two groups. The first group received only manual therapy. In the second group, they compared the group that received bioresonance therapy together with manual therapy. It was observed that an effective treatment was provided in both groups, but it was reported that the efficacy of treatment in the bioresonance group was more significant in all parameters examined. The clinical benefit was achieved significantly earlier, and the effectiveness of the treatment was more pronounced and long-lasting.

With the muscular syndrome index, it has been shown that 37% improvement in the control group and 72.4% improvement in the bioresonance group, and a significant improvement in other co-occurring fibromyalgia symptoms (for example, sleep disturbance and sensitivity to weather changes) when compared to the control group (7).

Other Groups

In a retrospective study conducted by Herrmann et al. in Germany between 1998 and 2008, bioresonance therapy was applied to 935 patients who had no or limited improvement despite receiving

conventional treatments, and the results were reviewed retrospectively. Patients were divided into two groups as bioresonance only and bioresonance + zapper areas. It has been reported that half of the patients are over the age of 56, and approximately one-third are between the ages of 36-55.

Indications classified as:

- a) Allergies (pollen allergy, allergic asthma and food intolerances)
- b) Pain (rheumatism, neuralgias, migraine, polyarthritis, rheumatoid polymyalgia),
- c) Infections (dental inflammations, sinusitis, neuritis, stomach inflammations and various viral bacterial and parasitic diseases)

In the bioresonance-only group of patients, response to treatment was rated as very good to satisfactory in 83.3% (N = 296). Overall positive evaluation of therapeutic efficacy in the area of allergies (N=169) was 88.2%, in the area of pain (N=85) 85.9%, and in the area of infections (N=78) 96.1%. As a result, a maximum of 5 sessions of treatment was sufficient in approximately half of the patients (48.8%). It can be said in general that 10 or more sessions are required for conditions such as active arthrosis, polymyalgia rheumatica, and postoperative neuralgias. There were no side effects that required medical intervention and discontinuation of treatment (8).

Quitting Smoking

Although there is no clear data in our country, it is known that there are many therapists and centers using bi-resonance therapy for quitting smoking.

One of the scientific studies published on this subject is the study of Karadağ et al. on 1338 people. In this study, it was reported that 94.1% of people who received bioresonance treatment found the bioresonance application effective and 80.6% spent the first 7 days without smoking without using any nicotine replacement or other medication after bioresonance. The rate of smoking quitters at the end of one month was found to be 69.13% (25).

Pihtili et al. (2014) in a double-blind randomized controlled study, 100 people were treated with bioresonance and 100 people were given a placebo (although the device seems to work, it actually does not operate). In this study, which was designed as double-blind, the therapist who performed the session did not know what type of treatment was being applied. As a result of this study, the smoking quitters rate of people who were applied active bioresonance in 1-year follow-up was found to be statistically significantly higher than those who received placebo (26).

CONCLUSION

Although it seems to be effective in the studies conducted, there is a need for more scientific studies and more data to be presented. When the studies in the literature are examined, it can be said that bioresonance therapy has the potential to be used for chronic diseases, fight against addiction, especially for supportive purposes in cases where conventional medicine practices are insufficient. Bioresonance treatments are becoming widespread both in the world and in our country with each passing day, and they are also in demand from patients. It can be foreseen that it will become much more widespread in the near future. It also seems to be an advantage that a short-term training is sufficient for physicians to add bioresonance treatments to their clinical practice.

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