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21st Century Neuro Technology





21st medicine is leading the field in scientific and medical communities in many areas around the world. This section presents an overview of the changes taking place, a description of three specific fields of new technology, and recommended equipment in each field, including the CES Ultra™.

T a b l e o f C o n t e n t s

	<u>Page</u>
21st Century Neuro Technology	3
The Wave of the Future – Transitioning from ‘Chemical Medicine’ to ‘Energy Medicine’	4
CES (Cranial Electrotherapy Stimulation)	6
CES Ultra™	9
How to Use and Purchase the CES Ultra™	12
Electromedicine and Bio–Electrotherapy	14
WellnessPro® 2010 Bio–Electrotherapy System	17
WellnessPro® 2010 Bio–Electrotherapy System – Frequently Asked Questions	19
Neurofeedback	22
Neurofeedback – Frequently Asked Questions	26
The NeurOptimal® Professional Neurofeedback System	30
Video Tour of How of the NeurOptimal® System Operates	31
Neurofeedback Case Studies	32
Revolutionary Treatment for Post–Traumatic Stress Disorder – Trauma Releasing Exercises (TRE™)	40

21st Century Neuro Technology



There is a fast-paced transition taking place globally today in many scientific, medical and mental health fields. Simply stated, this transition is a movement away from 'chemical' medicine to a new discipline called 'energy' medicine.

These changes represent an enormous shift from the old way of viewing the brain and the body to a completely new way of approaching conditions and disorders. These changes will have a profound effect in every area of health and rehabilitation.

These emerging fields offer new solutions for recovery. The advancements are also found, in many cases, to bring enormous relief for many problems previously considered untreatable.

The new disciplines in energy medicine, or electromedicine, offer technology and equipment that is completely safe, drug-free and cost-effective. And many of the extensive tests and procedures used today for diagnostics will no longer be necessary.

Every problem is approached in the same manner. This is based on the fact that all chemical reactions and functions in the brain and body are primarily electrical, or electromagnetic, in nature.

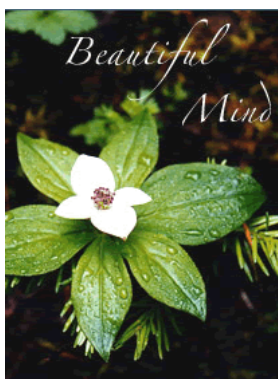
The new technology that makes up electromedicine is completely non-invasive. Recovery is quicker and changes are permanent because worn out systems – rather than being repaired – are simply and easily replaced with healthy systems.

The three technologies described in this section represent the most advanced and cost-effective in their field. Each system is preceded by a discussion of its field followed by a description of the specific system chosen for the Reclaiming Our Wounded Warriors® recovery program.

Together these three systems present a comprehensive and systematic way of integrating 21st century neuro technology into existing programs in every medical, mental health and rehabilitation facility in the world.

The Wave of the Future

Transitioning from 'chemical medicine' to 'energy medicine'



Electromedicine is based on one fundamental premise – all major life processes are electromagnetic in nature. As of January 2001, the Internet was listing almost 3,000 websites and over 2.3 million pages on this remarkable technology. In Europe, discoveries in electromedicine are the subject of popular, mass market publications. Research in the field of electromedicine has boomed within the past thirty years.

A Paradigm Shift in the Scientific Community

- An important and critical change has taken place in the scientific community. As a result, 'energy medicine' is an alternative to 'chemical medicine.' This shift is based on the fact that all chemical reactions are primarily electrical or electromagnetic in nature.
- Dr. Robert O. Becker was one of the most prominent physicians and authors studying energy medicine in the past century. In 2004 he wrote: "We are now in the process of revising the past century's biochemical concept, under which all major life processes are chemical in nature, to one that proposes that such processes are electromagnetic in nature."
- Electromedicine, or electrotherapy, is the use of electrical microcurrents to provide the trigger that stimulates repair, growth and regeneration in all living organisms. This technology is extremely safe. No electricity or electrical energy ever goes into the brain or the body.
- The application of the correct form of electrical intervention is the powerful tool used for initiating the endogenous mechanisms for repair on the inside and outside of the body.

Image Impressions of the Electrical Patterns in the Body

- Graphs, or "image impressions," of electrical energy patterns or waves in the body can be measured in a number of ways today: ECG/EKGs (electrocardiogram – measures the heart), EMGs (electromyogram – nerve conduction velocity testing), EEGs (electroencephalogram – electrical activity of the brain), CT scans (Computed Tomography – images of inside the body produced by a computer to produce an from X-ray or ultrasound), MRIs (Magnetic Resonance Imaging – magnetic forces are used to obtain detailed images of the soft parts inside the body), and brain mapping (QEEG, or Quantitative EEG -- measures electrical activity of the brain).

- All of these tests give a greater perspective of the internal energy happening within the body.
- Electromedicine augments the recovery processes within a body by measuring and using the electrical energy patterns in the body to reduce pain, anxiety, depression, chronic pain mental health problems, insomnia and much more. This electrical intervention results in accelerated healing by using electrical stimulation, called electrotherapy, that is applied externally.
- The body's electrical energy will self-repair damage to the body. The repair process requires a closed-loop system. A specific signal is generated, called the current of injury (COI), which causes another signal to start the repair. The COI signal gradually decreases over time with the repair process, until it finally stops when the repair is complete.
- All of the body's senses (smell, taste, hearing, sight and touch) are based on a pulse or vibrational signal system. The body controls the activity of cells responding to the senses by producing specific direct current electrical environments in their vicinity. It also appears to be the primary primitive system in the brain, controlling the actions of the neurons in their generation and receipt of nerve impulses.

21st century medicine technology is creating a global paradigm shift from 'chemical medicine,' which uses prescription pharmaceuticals as the primary form of treatment, to 'energy medicine,' which uses the body's own natural resource – electromagnetic energy. 21st century medicine, called electromedicine or energy medicine, includes such fields as the neuro sciences, electrotherapy, bio-electrotherapy, cranial electrotherapy stimulation, and other emerging disciplines.

In Europe, discoveries in electromedicine are the subject of popular, mass market publications. Research in the field of electromedicine has boomed within the past thirty years, and most notably in the past 10 years. At present we will see perhaps some of the most dramatic changes in only a few years to come. These changes will completely alter how the brain and body are perceived and how medical services are provided.

- Electromedicine is the use of electrical microcurrents to provide the trigger that stimulates repair, growth and regeneration in all living organisms.
- The application of the correct form of electrical intervention is the powerful tool used for initiating the endogenous mechanisms for repair on the inside and outside of the body.

Our medical culture shuns innovative technology. As a result the U.S. lags far behind the rest of the world in medical technology. Outside the U.S. advanced 21st century technology has been successfully used for many conditions and disorders. For example, this technology has been very effective in relieving the symptoms of Post-Traumatic Stress Disorder (PTSD) and Traumatic Brain Injury (TBI).

There are three 21st century neuro technology systems that are presented in this section. They are the basic services provided in the Reclaiming Our Wounded Warriors® program. The three system used in the program represent not only the best in its respective field but the most cost-effective as well. Each of the three disciplines are described, with background information and research findings, followed by a description of the specific equipment chosen from that field for the Reclaiming Our Wounded Warriors® program:

- the CES Ultra™ device comes from the field of cranial electrotherapy stimulation.
- the WellnessPro 2010® system comes from the field of bio-electrotherapy; and
- the NeurOptimal® neurofeedback system comes from the neuro sciences.

Each system functions basically in the same manner because they restore and normalize electrical functioning in the brain and the body. When this balance is achieved symptoms disappear. This technology is beginning to take hold in many places around the world because of its low cost, the elimination of expensive tests and diagnostics, and the speed of recovery.

Cranial Electrotherapy Stimulation (CES)



Cranial electrotherapy stimulation, or CES, is a completely safe, non-addictive and non-invasive treatment. Within the last ten years there has been a better understanding of the connection between brain function, neurotransmitters and electrical stimulation. CES helps restore emotional balance, returning optimum pre-stress functioning.

CES is widely regarded as safe, effective and natural 21st century alternative approach to prescription pharmacological treatment. It is a unique and viable “bio-electric” approach which seems to enhance the homeostasis of the biological central nervous system. CES units are completely safe and non-invasive. It's important to stress that there is absolutely no electricity going into the body at any time.

CES is a simple approach to stress management. It employs mild battery-powered electrical stimulation through clip-on electrodes attached to the earlobes, or pre-gelled electrodes placed behind the ears. Current flow is limited so that the most a user will experience during the process is a slight tingling sensation. If a tingling sensation is felt, the level on the unit is turned down until there is no sensation. CES gently adds energy back to all parts of the brain, helping a return to the optimum state in effect before stressors were activated. Results are cumulative and lasting and there are no side effects.

CES acts by indirectly stimulating brain tissue in the hypothalamic area, causing the brain to manufacture various neurohormones and restoring them to pre-stress homeostasis. Increasing or decreasing the amplitude does not impair the effectiveness of the treatment.

CES has an unblemished safety record. Published literature on the subject shows no negative effects or major contraindications from its use, either in the U.S. or in other parts of the world. The National Research Council has deemed CES a non-significant risk modality.

Is there any electric voltage that goes into the brain?

It's important to understand the difference between electro shock therapy and the technology available today through cranial electrotherapy stimulation and other emerging fields.

Electro shock therapy induced a Grand Mal seizure, or electrical storm, in a patient's brain. This appeared to have a temporary quieting effect but the results of the treatments did not last and the use of electro shock therapy declined.

Cranial electrotherapy stimulation (CES), along with all the advanced equipment used in the Reclaiming Our Wounded Warriors®, is safe and non-invasive. Nothing goes into the brain. There is no electromagnetic energy, charge or voltage of any kind. That's the miracle of this exciting emerging technology. The nature of all electrotherapy equipment is that it simply

balances energy in the brain and the body. When a balance in the energy systems are achieved symptoms disappear.

CES works by slightly stimulating the Vegas nerve. The Vegas nerve can be reached easily because it lies just beneath the skin's surface at both ear lobes. This is a vital nerve because it goes directly into the Reptilian brain which the oldest part of the brain. This part of the brain reacts in the same way a reptile's does to danger in what is called the "fright and flight" response.

The cranial electrotherapy stimulation unit used in this program is called CES Ultra™. The CES Ultra™ is powered by a 9-volt battery. The battery turns the machine on and off and no voltage or electromagnetic energy goes into the brain or body. Even when the CES Ultra™ is turned to maximum intensity, it is not harmful. The same is true of all of the equipment used in the "Reclaiming Our Wounded Warriors" program. All of the equipment used in the Reclaiming Our Wounded Warriors® program is backed by decades of researched. All of the equipment is also FDA cleared.

The symptoms from PTSD and many other conditions and disorders are the result of an imbalance in this energy field. Once balance is re-established the brain can then maintain that balance itself, and symptoms, no matter how old or severe, simply cease. And the changes are permanent.

CES has many uses and successfully treats:

- Depression
- Tension and anxiety
- Anxiety Disorder (the chief component of Post-Traumatic Stress Disorder)
- Sleep problems
- Chronic pain
- Tension headaches and migraines
- Addiction recovery

Anxiety

This most immediate impact of CES is the reduction of anxiety. For most, it is experienced in the course of treatment; for others, hours, or several days after. CES leaves a feeling of both relaxation and alertness. The effect differs from pharmaceutical treatments in that people report feeling their bodies as lighter and more relaxed and their mind more alert and clear.

Addictions

A major use of CES is in the drug abstinence syndrome in which people are withdrawing from various substances of addiction – nicotine, alcohol, prescription drugs, cocaine or heroin.

Depression

CES has a dramatic effect on relieving depression and mental health problems. Depression and mood swings become less frequent, as do irrational anger, irritability, and poor impulse control. Mental confusion due to stress begins to subside. The ability to focus and concentrate on work becomes easier and more efficient. Cognitive processing is visibly enhanced. As concentration and memory improve, recalling information and learning in an accelerated manner return to normal pre-stress levels.

Sleep disorders

Sleep patterns begin to normalize within the first day or two, with less and shorter periods of awakening during the night, faster onset of sleep after going to bed, and a greater feeling of being rested upon

awakening. CES users often report an increase in vivid dreaming, resulting from compensation for lost REM sleep. As sleep patterns normalize over the next two or three nights the vivid dreaming becomes less frequent.

Chronic pain

A recent study of 202 chronic pain patients treated for 30 minutes or less in several medical clinics with microcurrents probes on or near the pain site on the body, plus CES across the head, showed that their pain was reduced by an average of 50% or more, and 17% were entirely pain free at the end of the 30 minute treatment period. Interestingly, those who had been in pain longest showed the greatest gains.

How is a CES unit used?

Most CES units are portable, allowing its use just about anywhere and under a variety of circumstances such as watching TV, doing the dishes, or at the office. The recommended usage is 30–45 minutes once or twice daily for the first month. Once symptoms are reduced or eliminated entirely, the frequency may be reduced to two or three times weekly, and then less than that.

Background

CES has been an international treatment modality for more than 50 years. Thousands of people worldwide continue to receive its benefits. The most extensive work on CES is presently being conducted at the Pavlov Institute in St. Petersburg, Russia. But by no means is its use restricted to that part of the world.

Current estimates are that there are between 50 – 100,000 units in use globally. East European nations soon picked up CES as a treatment modality, and its use spread worldwide. By the late 1960's, animal studies of CES had begun in the United States at the University of Tennessee and what is now the University of Wisconsin medical school. These were soon followed by human clinical trials at the University of Texas medical school in San Antonio and the University of Wisconsin medical school. More studies followed.

Research

There are approximately 1,000 articles on CES therapy. There is in addition a wealth of physiological and bio-engineering data on electro-sleep and electro-anesthesia.



Enjoy experiencing one of the true miracles of 21st century energy medicine.

**CES Ultra™ is the Premier Drug-Free System for
the Relief of Symptoms of Post Trauma Syndrome
and Mild Traumatic Brain Injury**

“CES is the doorway to good health. It works as an important adjunct in programs invoking nutrients, hormones, and medications. Its multiplicity of health benefits include: induction of relaxation response; exertion of control over frontal lobe behavior; modulating hormone levels; a possible antidote to electromagnetic field radiation. When amino acid supplementation is coupled with CES therapy, this combination is a potentially potent therapeutic regimen for anti-aging.”

Eric Braverman, M.D., Director, PATH Medical.



The pocket-size unit CES Ultra™ unit measures only 2.4" x 4"



The sturdy compact carrying case measures 6" x 7".

Advantages of the CES Ultra™

Stress is our nation's #1 health problem.

It is the source of the anxiety, depression, and insomnia plaguing millions of Americans. Stress accounts for more than two-thirds of family doctor visits and is an important risk factor in all major illnesses. Left unchecked, it is a killer.

CES, or cranial electrotherapy stimulation, is one of the many 21st century devices that are a completely safe, non-addictive and non-invasive treatment. Employing mild electrical stimulation, CES helps restore emotional balance, returning optimum pre-stress functioning.

CES is a successful and natural 21st century alternative approach to pharmacological treatment for stress management, anxiety, depression, insomnia and the general treatment of mental and physical illnesses. It is a unique and viable “bioelectric” approach which seems to enhance the homeostasis of the biological central nervous system — the tendency for intrinsic balance within a system.

The symptoms from PTSD and many other conditions and disorders are the result of an imbalance in this energy field. Once balance is re-established the brain can then maintain that balance itself, and symptoms, no matter how old or severe, simply cease. And the changes are permanent.

Advantages of the CES Ultra™

- stabilizes the equilibrium of the central nervous system
- relieves depression by elevating moods and helps restore emotional balance
- reduces tension by developing the “relaxation response”
- relieves anxiety disorder – the primary symptom of Post-Traumatic Stress Disorder
- normalizes sleep patterns
- it is a completely safe, non-invasive and non-addictive treatment
- easy to use, compact, and portable
- FDA registered

CES has many uses and successfully relieves symptoms of:

- anxiety Disorder (the chief component of Post-Traumatic Stress Disorder)
- anxiety
- depression
- insomnia

Anxiety Disorder/Anxiety

This most immediate impact of CES is the reduction of anxiety and the many symptoms of Anxiety Disorder. For most, it is experienced in the course of treatment; for others, hours, or several days after. CES leaves a feeling of both relaxation and alertness. The effect differs from pharmaceutical treatments in that people report feeling their bodies as lighter and more relaxed and their mind more alert and clear.

It has been widely reported that the symptoms from Post-Traumatic Stress Disorder (PTSD) are significantly relieved by CES, many other conditions and disorders are the result of an imbalance in this energy field. Once balance is re-established the brain can then maintain that balance itself, and symptoms, no matter how old or severe, simply cease. And all the changes are permanent.

Depression

CES has a dramatic effect on relieving depression and mental health problems. Depression and mood swings become less frequent, as do irrational anger, irritability, and poor impulse control. Mental confusion due to stress begins to subside. The ability to focus and concentrate on work becomes easier and more efficient. Cognitive processing is visibly enhanced. As concentration and memory improve, recalling information and learning in an accelerated manner return to normal pre-stress levels.

Insomnia

CES is the most effective intervention for insomnia and sleep disturbances that comes in many forms. Sleep patterns begin to normalize within the first day or two, with less and shorter periods of awakening during the night, faster onset of sleep after going to bed, and a greater feeling of being rested upon awakening. CES users often report an increase in vivid dreaming, resulting from compensation for lost

REM (rapid eye movement) sleep. As sleep patterns normalize over the next two or three nights the vivid dreaming becomes less frequent.

Other Uses for CES

There are many other symptoms that accompany not only the above but there is also a marked decrease in the symptoms of other conditions and disorders.

A recent study of 202 chronic pain patients treated for 30 minutes or less in several medical clinics with microcurrents probes on or near the pain site on the body, plus CES across the head, showed that their pain was reduced by an average of 50% or more, and 17% were entirely pain free at the end of the 30 minute treatment period. Interestingly, those who had been in pain longest showed the greatest gains.

CES has been reported to enhance successful addiction recovery. A major use of CES is in the drug abstinence syndrome in which people are withdrawing from various substances. CES has been reported to relieve withdrawal symptoms such as cravings, anxiety and pain

CES also has applications in the following areas:

- Natural disasters and catastrophic events
- Crisis & suicide hotlines
- Medical, healthcare & rehabilitation services and facilities
- Drug & alcohol rehab programs and facilities
- Other substance abuse programs and facilities
- High risk jobs
- Police & fire departments
- Airline pilots
- Air traffic controllers
- K-9 units
- High impact sports

How is a CES unit used?

Most CES units are portable, allowing its use just about anywhere and under a variety of circumstances such as watching TV, doing the dishes, or at the office. The recommended usage is 30–45 minutes twice daily for four weeks. Once symptoms are reduced or eliminated entirely the frequency may be reduced to two or three times weekly. Use at intervals on an as-needed-basis.

Is there any electric voltage that goes into the brain?

It's important to understand the difference between electro shock therapy and the technology available today.

Electro shock therapy induces a Grand Mal seizure, or electrical storm, into a patient's brain. This appeared to have a temporary quieting effect but the treatment's effects did not last long and the use of electro shock therapy declined.

The CES Ultra™ is safe and completely non-invasive. Nothing goes into the body or the brain at all. There is no electromagnetic energy, charge or voltage of any kind. That's the miracle of this exciting emerging technology. The nature of all electrotherapy equipment is that it simply balances energy in the brain and the body. When this balanced is achieved symptoms disappear.

How does the CES Ultra™ Work

The CES Ultra™ works by slightly stimulating the Vagus nerve. The vagus nerve can be reached easily because it lies just beneath the skin's surface at both ear lobes. This is a vital nerve because it goes

directly into the Reptilian brain which the oldest part of the brain. This part of the brain reacts in the same way a reptile's does to danger and is called the "fright and flight" response.

CES Ultra™ is powered by a 9-volt battery. The battery turns the machine on and off and there is absolutely no voltage or electromagnetic energy that goes into the brain or body. Even when turned the CES Ultra™ to maximum intensity, it is not harmful. The device is backed by years of research and is FDA cleared. Slight stimulation of the vagus nerve is applied through ear clips or self-adhesive electrode gel pads. There is a gentle tingling sensation; if uncomfortable the dial is simply lowered. The vagus nerve goes directly into the "reptilian" or the oldest part of the brain. The "fright and flight" response engages and causes the brain to replay the trauma over and over exactly as it happened.

The CES Ultra™ is Easy to Use

The CES Ultra™ is typically used two to three times a day for 45 minutes over a period of several weeks, after which time the frequency may be reduced. The CES Ultra™ is compact and portable and can be used anywhere and at any time.

The CES Ultra™ can also be used for longer periods of time. One recommended usage is 3 hours a day for the first two weeks, after which time the frequency may be reduced. The unit can actually be used for any amount of time each day with any danger.

The CES Ultra™ is completely safe and positive results can be experienced almost immediately, though for some it may require longer. For lasting benefits, the CES Ultra™ should be continued at intervals on an as-needed basis.

Initial Usage

- Pleasant experience of calm
- Gradually induced relaxation response

First Two to Three Days

- Elevation of mood
- Decreased nervous energy and frenetic behavior
- Normalization of sleep patterns
- Faster onset of sleep on going to bed
- Fewer and shorter periods of waking at night
- A feeling of being rested upon waking in the a.m.

Week One

- Diminished depression and mood swings
- Fewer episodes of irrational anger and irritability
- Greater sense of balance, centeredness and calm
- A pleasant, detached state & quieting of the mind
- Improved impulse control

Weeks Two and Three

- Diminished mental confusion
- Heightened clarity and alertness
- Increased mental energy
- Heightened ability to focus
- Improved task concentration
- Normalized information recall
- Accelerated learning

After Week Three

- Symptoms continue to diminish and disappear over a period of weeks and months.
- For some it may take longer to experience relief from symptoms. Just continue to use the unit and the changes will take place.
- For some it may take longer to experience relief from symptoms. Just continue to use the unit and changes will take place.
- For lasting benefits, the CES Ultra™ should be continued at intervals on an as-needed basis.

What distinguishes the CES Ultra™ from other CES units?

The most significant research on CES is based on the traditional 100Hz; a much smaller portion on micro frequencies – those less than one Hz. The CES Ultra™ is currently the only unit on the market featuring both. Other units may claim to carry the 100Hz, but do not have an accurate rendition of the configuration on which most of the research is based.

There are also certain “underground” instruments on the market, many of which can be found on the Internet. Contrary to their often stated anecdotal claims, most have no scientific evidence behind them. Many are nothing more than low-cost pulse generators of dubious quality, and have not been fully evaluated for either efficiency or safety. They are not registered with the FDA. Often billing themselves as “for research purposes only,” they do not have permission to present themselves as “medical devices” or make any medical claims.

The CES Ultra™ is the most advanced CES instrument currently available. For those suffering from depression and anxiety, it means relief with none of the unpleasant side effects of prescription drugs. For those seeking nothing more than a good night’s sleep, it is an alternative to habit-forming tranquilizers.

For a public increasingly concerned with the effects of stress on physical health and emotional well-being, it provides a way of addressing stress in a safe and effective manner.

The CES Ultra™ is a treatment modality whose time has come.

Electromedicine and Bio-Electrotherapy



Leading-edge 21st century energy medicine and brain technology

Electromedicine and bio-electrotherapy in its various forms are fast becoming one of the primary safe, efficacious and cost-effective treatments of choice as we entered the 21st century. Brain technology exists outside the U.S. today and has been successfully treating head injuries and many other physical and mental health conditions worldwide for forty years. As of January 2001, the Internet was listing almost 3,000 websites and over 2.3 million pages on this remarkable technology; and, it is the subject of popular, mass market publications.

Just as there are circulatory systems for blood and lymph, the human body has an additional circulatory system for electricity. Many tissues in the body are semiconductors and that there is an electrical "current of injury" that must be present for healing to take place.

Scientists have made a paradigm shift from chemical medicine to energy medicine. There is general acceptance and use of external electrical energy. The focus now will be on the function of electromedicine in augmenting the healing process within the body.

Research in the field of electromedicine has been used worldwide for the past thirty years. The past five years, however, have seen the greatest breakthroughs. Dr. Robert O. Becker was one of the premier physicians and authors studying energy medicine in the past century. In 2004 he wrote, "We are now in the process of revising the past century. We are moving from a biochemical concept, under which all major life processes are chemical in nature, to one that proposes that such processes are electromagnetic in nature. Because the practice of medicine is a direct descendant of each new scientific paradigm we now have energy medicine as an alternative to chemical medicine. This new paradigm rests quite solidly on the fact that all chemical reactions are basically electrical or electromagnetic in nature."

Dr. Becker developed his theory of biological control systems based on concepts derived from physics, electronics, and biology. He postulated that the first living organisms must have been capable of self-repair otherwise they never would have survived. The repair process requires a closed-loop system. A specific signal is generated, called the current of injury (COI), which causes another signal to start the repair. The COI signal gradually decreases over time with the repair process, until it finally stops when the repair is complete.

Doctors look at EKGs, EMGs, EEG and all graphs of electrical energy patterns or waves in the body registered and printed. Taking it a step further are CT Scans, MRIs, brain mapping and image impressions generating a greater perspective of the internal energy pictures happening within the body.

Modern research into low intensity electrical stimulation of the brain was begun by Leduc and Rouxau in France (1902); in 1949, the Soviet Union expanded research of CES to include the treatment of anxiety as well as sleeping disorders.

Devices from electromedicine seem to work against all pathogenic organisms so accurate diagnosis is not required. And, these devices are easy to use by the average person. They are safe enough to be used on children and animals.

Background

Electrotherapy has been in use for at least 2000 years, as shown by the clinical literature of the early Roman physician, Scribonius Largus, who wrote in the *Compositiones Medicae* of 46 AD that his patients should stand on a live black torpedo fish for the relief of a variety of medical conditions, including gout and headaches. Claudius Galen (131 - 201 AD) also recommended using the shocks from the electrical fish for medical therapies.

Low intensity electrical stimulation is believed to have originated in the studies of galvanic currents in humans and animals as conducted by Giovanni Aldini, Alexandero Volta and others in the 18th century. Aldini had experimented upon himself with galvanic head current as early as 1794 and reported the successful treatment of patients suffering from melancholia using direct low-intensity currents in 1804.

In the 1960s and 1970s, it was common for physicians and researchers to place electrodes on the eyes, thinking that any other electrode site would not be able to penetrate the cranium. It was later found that placing electrodes on the earlobes was far more convenient, and quite effective. The overwhelming majority of the scientific research is extremely positive. No significant lasting side effects have been reported.

Bio–electrotherapy and its uses today

The most important use of electrotherapy is for pain control. In the 1970s the “gate control theory” of pain was confirmed in which counter stimulation could effectively close a spinal “gate” to peripheral pain messages attempting to ascend the spinal-thalamic tract to the brain. Micro current devices now attempt to alter or eliminate the pain message by inducing healing at the pain site.

Other uses for electrotherapy include:

- Stabilizes the equilibrium of the central nervous system.
- Relieves depression by elevating moods and helps restore emotional balance.
- Reduces tension by developing the “relaxation response.”
- Relieves anxiety disorder – the primary symptom of Post–Traumatic Stress Disorder.
- Normalizes sleep patterns.
- Relieves pain.
- Treats addictions by reducing cravings, pain and anxiety.
- A completely safe, non–invasive and non–addictive treatment.
- FDA cleared.
- Easy to use, compact, and portable.
- General treatment for mental and physical illnesses
- Electromagnetic bone healing devices are utilized to heal non–union fractures.
- Muscles can be stimulated to produce contraction so that persons with paralyzed muscles can maintain muscle tone in unused limbs.

- Other disabled persons use bio–electrotherapy devices in learning to walk again, or in developing new skills in using their arms or hands.
- Electrical stimulators are now widely implanted in the body, such as cardiac pacemakers, electrical stimulators in various parts of the brain to prevent such things as fine tremor of the hands or whole body seizures, and dorsal column stimulators to interdict pain from various causes.
- Electroacupuncture has been used since the early 1970s when it was introduced from China via Hong Kong. One of the latest innovations in this area is the electro–acupuncture face lift.
- Multi–frequency generator promotes health by stimulating all cells in the body.
- A recent survey of 2,500 patients indicated that 94% of those suffering from arthritis reported significant improvement, as did 100% of those suffering from carpal tunnel syndrome, 94% of those suffering from chronic fatigue syndrome, 93% of those suffering from chronic pain at various sites on their body, 91% of those suffering from fibromyalgia, 98% of those suffering from migraine headache, 93% of those suffering from back and neck pain, and 89% of those suffering from Temporomandibular Disorder (TMD).

In summary, electromedicine and bio–electrotherapy are fast becoming one of the primary safe, efficient and cost–effective treatments of choice as we entered this century.

WellnessPro® 2010 Bio–Electrotherapy



Research Findings in the U.S. and Europe

Electromedical Technologies, manufacturers of the WellnessPro® Bio–Electrotherapy device, and their partner university research centers and clinics in Europe, along with participating doctors and clinics in the, have overseen treatments using the WellnessPro® with outstanding results in the reduction of pain in a wide range of acute and chronic conditions that cause minor to severe pain that is difficult to control.

Below is a partial list of conditions that have been known to cause pain.

- AIDS related pain
- Arthritis – osteo & rheumatoid
- Back pain – acute and chronic
- Back pain/sciatica
- Bell's palsy
- Broken bones
- Cancer
- Carpal tunnel
- Chronic Fatigue
- Disc injuries/tendonitis
- Fibromyalgia
- Headaches/migraines
- Herpes/shingles
- Joint pain
- Multiple Sclerosis
- Neurological disorders
- Nerve entrapment
- Neuropathy
- Plantar Fasciitis
- Post–op pain
- Soft tissue regeneration pain
- Spinal cord injuries
- Sports injuries
- TMJ
- Wound pain

University and medical studies have found that bio–frequency technology positively effects the production of ATP and sodium pump effect in the Krebs cycle of the cell, thus enhancing the cell's ability to stimulate its regenerative, instead of a degenerative, phase.

In 1991, two research scientists, Dr. Erwin Neher and Dr. Bert Sackmann won the Nobel Prize in Physiology and Medicine*, by detecting electrical currents of a trillionth of an ampere in the membrane, on the surface of a cell. These and other findings help support and substantiate the viability of the WellnessPro technology over many other devices on the market that use outdated technology, are not laboratory tested for safety and efficacy, and not FDA cleared, and produce tremendous inaccurate frequencies with little to no results for the patient.

In addition, the WellnessPro "Deep Pulse" technology (image see on the right side of the page) ensures that you get the best and most accurate delivery of frequency to the affected area possible...

Additional research findings have shown increase range of motion, a decrease healing time and progressive wound healing through the use of bio–electrotherapy.

The Nobel Assembly was awarded the Nobel Prize in Physiology and Medicine in 1991 jointly to Erwin Neher and Bert Sakmann.

The two German cell physiologists Erwin Neher and Bert Sakmann together developed a technique that allows the registration of the incredibly small electrical currents (amounting to a picoampere – $10^{-12}A$) that passes through a single ion channel. The technique is unique in that it records how a single channel molecule alters its shape and in that way controls the flow of current.

Each living cell is surrounded by a membrane which separates the world within the cell from its exterior. In this membrane there are channels, through which the cell communicates with its surroundings. These channels consist of single molecules or complexes of molecules and have the ability to allow passage of charged atoms that is ions. The regulation of ion channels influences the life of the cell and its functions under normal and pathological conditions. The Nobel Prize in Physiology or Medicine for 1991 was awarded for the discoveries of the function of ion channels.

Cells in the nervous system communicate with each other by means of these electrical signals of around a tenth of a volt that rapidly travel along the nerve processes. When they reach the point of contact between two cells – the synapse – they induce the release of a transmitter substance. This substance affects receptors on the target cell, often by opening ion channels.

Neher and Sakmann conclusively established with their technique that ion channels do exist and how they function. They have demonstrated what happens during the opening or closure of an ion channel. They also showed how the channel regulates the passage of positively or negatively charged ions. This new knowledge and this new analytical tool has during the past ten years revolutionized modern biology, facilitated research, and contributed to the understanding of the cellular mechanisms underlying several diseases, including diabetes and cystic fibrosis.

Frequently Asked Questions about WellnessPro 2010® Bio-Electrotherapy System

What is the WellnessPro 2010® Bio-Electrotherapy System?

The WellnessPro 2010® bio-electrotherapy system is a non-pharmacologic approach to pain control. It can also be used for trauma injury rehabilitation and muscle and connective tissue problems.

How does it work?

The WellnessPro 2010® bio-electrotherapy system acts by indirectly stimulating brain tissue in the hypothalamic area, causing the brain to manufacture various neurohormones and restoring them to pre-stress homeostasis.

Is the WellnessPro 2010® safe?

The WellnessPro 2010® has an unblemished safety record. A broad reading of published literature on the subject shows no negative effects or major contraindications from its use, either in the U.S. or in other parts of the world. The National Research Council has deemed WellnessPro 2010® an insignificant risk modality.

The unit's sole source of current is a nine-volt battery. Its intensity is limited to 1.5 milliamps – more than is required to run a small toy or a penlight. Even when turned to maximum intensity, it is not harmful. It is suggested, however, that until you become fully acclimated to the unit, you maintain the amplitude at a lower setting.

How is the current transmitted?

The WellnessPro 2010® is powered by a nine volt battery. It uses pre-gelled electrodes that sit below each ear and snap on or attach to the end of a lead-wire that plugs into the jack of the unit. Another option is ear-clips that have with felt or conductive rubber electrodes which attach to each earlobe. It also can use adhesive electrodes.

What is it like?

Most people are pleased to discover that the WellnessPro 2010® is an easy and pleasurable experience. The most you will ever feel is a gentle tingling sensation with the higher frequencies and light-headedness with frequencies less than one hertz. If the sensation proves too strong, you simply reduce it by a simple turn of the knob.

Increasing or decreasing the amplitude does not impair the effectiveness of the treatment. Research shows WellnessPro 2010® to operate effectively at both lower and higher levels of stimulation as well as below the sensate threshold. A common approach is to turn the amplitude to the point of sensation, turn it down slightly below that point, and leave it there for the remainder of the session. Your own comfort level always dictates the amplitude.

Is the WellnessPro 2010® user friendly?

The WellnessPro® unit is easy to use: (1) Turn the unit on. (2) Press "Reset." (3) Press "Auto." (4) Enter the auto code treatment program to be used. (5) Hold one steel rod in each hand making sure that your thumb are just below the top of the rod. (6) Press "Run." (4) Set the amplitude. If you feel a slight tingling, turn the amplitude down until it's comfortable.

Does the WellnessPro 2010® work for everyone?

Nothing works for everyone. But the WellnessPro 2010® bio-electrotherapy system is effective for most people.

What immediate results can I expect?

Most people experience a response almost immediately after treatment, others, after several days. This relaxed but alert state will usually remain for an average of 12 to 72 hours after the first few sessions. With regular use it is possible for the patient to habituate to this preferred state of consciousness.

How does the WellnessPro® affect sleep?

The WellnessPro® is positively indicated in the treatment of insomnia. Sleep patterns begin to normalize within the first day or two, with less and shorter periods of awakening during the night, faster onset of sleep after going to bed, and a greater feeling of being rested upon awakening in the morning. WellnessPro 2010® users often report an increase in vivid dreaming, resulting from compensation for lost REM sleep. As sleep patterns normalize-within the next two or three nights it should become less frequent.

What additional long-range changes should I expect?

Depression and mood swings become less frequent, as do irrational anger, irritability, and poor impulse control. Mental confusion due to stress begins to subside. The ability to focus and concentrate on work becomes easier and more efficient. Cognitive processing is visibly enhanced. As concentration and memory improve, recalling information and learning in an accelerated manner return to normal pre-stress levels.

When should the WellnessPro® be used?

The WellnessPro® may be used upon waking in the morning and/or on going to bed at night and/or during the day in particular situations. It can be used both as an adjunct to meditation each morning or during stressor moments occurring unexpectedly in the course of a day – those times when you “lose it.” Using the unit in those situations even for as little as ten minutes can help curb that anxiety. In addition to activating actual bio-electrical changes, it serves as a reminder that you can be with yourself in a different way and that you have the power to change your emotional state and are willing to create the time and the space to do so. Ultimately, each person finds how to best incorporate the WellnessPro® into their daily routine.

Where can it be used?

WellnessPro 2010® units are portable and easy to use. They can be used just about anywhere and under a variety of circumstances. You can use it anywhere – outdoors or indoors, at home while watching TV, lying in bed, at the office, in the car (as a passenger). Results are generally enhanced by setting aside a special time for its use.

What is the suggested length and frequency of treatment?

The length of each of the 1,000 auto code settings is indicated in the manual that comes with the unit. The unit will automatically return to READY when the session is over. You can then enter another auto code. Use as many auto codes as you want in a single day, but don't use the same codes two days in a row. Skip a day in between the same auto code settings. One approach is to write down the auto codes you want to use. Use half of the auto codes the first day of and the second half of the auto codes on the second day. On the third and fourth days repeat day one and day two. Once symptoms are reduced or eliminated entirely, the frequency can be discontinued. If any symptoms return, for any reason, simply begin using the same auto codes as in the first treatment sessions. Work closely with your physician/healthcare professional to determine the role WellnessPro 2010® plays in your overall treatment program.

Are there any contraindications for its use?

There are no known contraindications for use of WellnessPro 2010® bio–electrotherapy system. It's important to be in a relaxed position, sitting up or lying down, so the steel rods can be held easily. Do not use the WellnessPro 2010® while driving or operating dangerous or complex equipment.

As with the use of any medical device, the physician/licensed practitioner should be informed of any medication or neurotransmitter blockers you are taking as well as the employment of cardiac pacemakers or other electronic devices. The WellnessPro® is not a substitute for professional consultation.

What research is there as to its effectiveness?

Electromedical Technologies, manufacturers of the WellnessPro® bio–electrotherapy system, and their partner university research centers and clinics in Europe, along with participating doctors and clinics in the U.S., have overseen treatments using the WellnessPro 2010® with outstanding results in the reduction of pain in a wide range of acute and chronic conditions that cause minor to severe pain that is difficult to control.

What is the current legal status of the WellnessPro 2010®?

WellnessPro 2010® is an over–the–counter device, available without a prescription.

Why haven't I heard more about the WellnessPro 2010® Bio–Electrotherapy System?

WellnessPro 2010® has been a relative unknown and under–used technology due to the fundamental Western bias on behalf of prescription pharmaceuticals. Within the last ten years, there is a better understanding about the connection between brain function, neurotransmitters and electrical stimulation. As our knowledge of this area grows and new research findings emerge, so too will the popularity and increased usage of the WellnessPro 2010®.

Sources:

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Neurofeedback



Neurofeedback is a primary component of 21st century energy medicine. Forty years ago it emerged and remains the primary technology from the field of the neuro sciences.

Brainwave patterns can be measured

The energy in the cortical functioning of the brain are called “brainwave patterns” and can be measured by an electroencephalograph (EEG) Neurofeedback was developed through the identification of brain waves of different frequencies, and the deliberate training up or down of their amplitudes. Neurofeedback balances the electrical activity in the brain and increases the brain's energy and functioning. When this happens symptoms are completely gone or reduced significantly.

The brain can correct imbalances in electrical energy, or brainwave patterns can be measured

The brain is a self-regulating, self-renewing system. When given the right tools, cortical functioning can correct itself easily, naturally and permanently. When the brain's electrical energy is corrected, the brain's energy systems become balanced and symptoms disappear in a short period of time.

The brain sends messages to the body through electrical impulses transmitted by the central nervous system. When the brain is injured due to illness, stress, diet, allergies or accidents, these electrical impulses (brainwaves) are disturbed. This creates abnormal rhythmic patterns. As the brain continues to transmit these abnormal patterns, imbalances are created in the body and symptoms appear.\

Neurofeedback measures energy levels in the brain and then “rewires” an injured brain to balance energy levels. When this is done, symptoms quickly disappear. Neurofeedback can treat multiple conditions and disorders at the same time, thus significantly reducing recovery time. .

The individual is provided with "feedback" through auditory and visual stimuli, and they begin to learn to produce different brainwave patterns. Neurofeedback is not a remedial program but rather creates new neural pathways and permanent changes. Neurofeedback is the most effective brain technology in the world today. Because it uses the brain's innate ability and desire to learn, with neurofeedback their brain is on its way to recovery in a very short amount of time.

Studies have shown that a variety of neurological disorders are significantly relieved by this process, including depression, anxiety, ADD, attention deficit hyperactivity disorder, Post-Traumatic Stress Disorder (PTSD), closed-head injuries, Pervasive Developmental Delay (PDD), Sensory Processing Disorder (SPD), headaches, stroke, and even learning disabilities.

All neurological disorders originate in the brain.

Neurofeedback is a leading-edge and broad sweeping EEG/brain training technology that has been used internationally since the early 1970s. Neurofeedback is not known in this country, but is used in Canada, Europe, Japan and Australia.

- Changing your brain waves can significantly change your life, affecting your well being in numerous ways.
- The brain is a self-regulating, self-renewing system.
- When given the right tools, cortical functioning can correct itself easily, naturally and permanently.

Neurofeedback has been reported to provide relief for most neurological condition and disorders, such as:

- | | | |
|---|--|---------------------------------------|
| • Traumatic Brain Injury (TBI) | • Sleep disorders | • Depression |
| • Post-Concussive Syndrome (multiple concussions from accidents, high impact sports, war zones) | • Addictions | • Anxiety |
| • Post-Traumatic Stress Disorder (PTSD) | • Memory | • Cerebral Palsy |
| • Acute and chronic pain | • Focus | • Autism |
| • Carpal Tunnel | • Concentration | • Aspergers Syndrome |
| | • ADD/ADHD | • Pervasive Developmental Delay (PDD) |
| | • Hyperactivity and impulsivity | • Tourettes Syndrome |
| | • Language and auditory processing disorders | |

The Reclaiming Our Wounded Warriors® program

- Neurofeedback is the most sophisticated system chosen for the Reclaiming Our Wounded Warriors® program. (www.reclaimingourwoundedwarriors.org) It has been found to be the most beneficial service for Post-Traumatic Stress Disorder and Traumatic Brain Injuries (TBIs).
- Neurofeedback trains the brain to quickly, safely and easily balance its own electrical activity. When cortical energy is restored the brain can then function naturally and completely the way it is suppose to.

Advantages of neurofeedback

- Neurofeedback is the world's premier rehabilitative technology today for neurological symptoms and disorders.
- Neurofeedback is the most advanced technology training for traumatic head injuries, addictions and the full anxiety-depression-bipolar spectrum.
- It has also been reported to be efficient for catastrophic physical trauma, chronic pain and Post-Traumatic Stress Disorder...
- Neurofeedback measures energy levels in the brain and then "rewires" an injured brain to balance energy levels.
- Neurofeedback can successfully correct a number of disorders at the same time – head injuries, addictions, and co-occurring disorders such as learning disabilities, memory loss, behavioral problems, mental health and behavioral disorders. Neurofeedback training is highly effective when it is used for multiple conditions at the same time.

- Symptoms simply disappear in a short period of time.
- Neurofeedback can be used while on medication. Children and adults are able to gradually taper off, and even discontinue their medications after beginning the neurofeedback program, if that is indicated.
- Neurofeedback can be integrated easily into an existing program for head injuries and alcohol or addiction recovery facility.
- No costly diagnostics or outside tests are needed to determine what the central nervous system (CNS) needs.
- The neurofeedback system is continually monitoring what the brain is doing, microsecond by microsecond, and the inherent intelligence of the brain re-normalizes on its own.
- Neurofeedback training is easy to learn, easy to use and easy to teach.
- Training can begin immediately because it reduces, or eliminates altogether, the combative and impulsive behavior associated with severe head trauma.
- Neurofeedback training supports and enhances all other therapies and activities in any facility.
- Training is completely non-invasive, pain free and drug free.
- Neurofeedback training also strengthens the immune system.
- Neurofeedback can also be easily integrated into an existing treatment programs for serious head injuries as well as addiction recovery
- Recovery time is greatly shortened because it works directly with the central nervous system. It uses the same principals as recently developed hearing implants for infants, children and adults who are deaf. The implant does not remediate the non-operant hearing center, but instead creates an entirely new one through the implant itself with external wires that attach to a cellular phone size device.
- Neurofeedback produces no side effects because of working at the same time with multiple frequencies as the brain naturally balances itself. You end up alert and relaxed, feeling alive and quiet at the same time. While we occasionally do see some odd effects pop up, they have always been transient and are always related to the problems the client came in with.
- Improvements are permanent because the methodology “hard wires” new and completely healthy functioning neural pathways, just as in the case of the hearing implants, rather than trying to remediate injured or damaged-beyond-repair areas of the brain. Just like riding a bicycle as a child, the brain built a new neural pathway called ‘riding a bike.’ That neural system remains permanently in place, which is why a person can get on a bicycle thirty years later and quickly ride as well as they did as a youngster.
- Neurofeedback training is done in a relatively short period of time. Individual sessions are 40 minutes long and, in generally, twenty to thirty sessions will eliminate, or greatly relieve, the overall effects of a brain injury. More sophisticated neurofeedback systems have reduced the number of sessions, even for the most severe head injuries, no matter how old the injury, sometimes to only fifteen to twenty sessions.
- The timing of the sessions is completely arbitrary. Neurofeedback training can be done on a daily basis or spread over time, for example, weekly or one or two sessions a month for those who are not in commuting distance to a VA facility. The brain can’t distinguish the time difference between sessions; it only knows that it is doing the best thing it likes to do, which is learning. The brain is

learning how to function as it did before, and better, by using this leading-edge neurofeedback system to build new neural networks with this leading-edge system from Canada.

Historical Background

Neurofeedback is the leading-edge brain technology that has come into its own over the past two decades.

- Its history extends back well into the late 19th Century when scientists realized that the electrical activity of the brain could be read. But it was many decades before it was understood that you could significantly change your life by changing brainwave frequencies, affecting your well-being in many kinds of ways.
- In 1968, the first clinical trials for neurofeedback were completed at UCLA, followed by FDA clearance.
- The US military began using neurofeedback in the early 1970s at the U.S. Military Academy at West Point. At the same time NASA began integrating neurofeedback into its training program for astronauts and space shuttle crews.

Canada's Prison System

- Canada was also one of the first to use this breakthrough brain technology and in 1973 began using neurofeedback in their prison system for alcohol and drug addiction recovery.
- It was discovered that 35% of addicts had serious, undiagnosed head injuries, as well as profound learning disabilities. Neurofeedback has been reported to be a very successfully way of retraining the brain in cases of head injuries, addictions and learning disabilities – all at the same time. Prison recidivism was reduced from 94% to an unprecedented 15%, and has maintained that level to this day.

The Menninger Clinic

The Menninger Clinic, a renowned psychiatric facility that pioneered breakthrough treatments since 1926, introduced neurofeedback in the 1970s for addiction recovery as well as a wide range of mental health disorders.

Alcohol and Drug Recovery Programs

- Many countries have joined the 21st century by easily integrating this advanced and highly efficient EEG methodology with existing brain injury and addiction recovery programs in rehabilitation centers in Canada, Europe, Australia and Japan.
- Alcohol and drug recovery programs worldwide began using neurofeedback because clinical trials demonstrated that it reduced recidivism by an average of 80%.

The US military and NASA

- The U.S. military and NASA were vitally interested in neurofeedback because of its ability to “train up” the brain, in other words, to provide optimal performance training. Optimal performance training is used internationally with sports teams to optimize performance.
- Today, in this country, in about 20 bases the U.S. military trains all officers in “optimal performance” using neurofeedback prior to deployment to Iraq or Afghanistan.

The continued success of neurofeedback is well-documented by 40 years of peer review research at universities and centers. In over 47,000 research articles and presentations at international conferences, neurofeedback has been proven to be a safe intervention with permanent changes.

Frequently Asked Questions about Neurofeedback

What is neurofeedback? Neurofeedback has been reported to be very effective, especially in conjunction with supporting care (i.e., rehabilitation therapy, counseling, educational intervention, etc.). EEG neurofeedback regulates the CNS (central nervous system) and clears away problems associated with disruption of normal brain wave electrical activity.

Neurofeedback is commonly used for traumatic brain injury, depression, anxiety disorders, panic attack, sleep problems, and learning disabilities such as ADD, ADHD and auditory processing.

Neurofeedback is a safe, non-invasive, painless procedure during which sensors, called electrodes, are placed on the surface of the patient's head. These sensors record and give information about the brain's activation, or energy, level. It's important to understand that the instruments used in this process serve only as a source of information. They read and record the activity in the brain; much like a thermometer tells your temperature. There is nothing that goes into the brain. The information is displayed on a computer screen, together with sounds which change according to the brain's activity levels. Once the patient learns to access and activate the brain more effectively, symptoms of the disorder are significantly reduced or, in most cases, disappear altogether.

Neurofeedback brings substantial improvement by strengthening the brain's overall optimal functioning. The brain functions more efficiently and effectively, and can work up to its true potential after an injury or as recovery from substance abuse.

Neurofeedback training reduces or eliminates the most difficult symptoms following a head injury, such as impulsive or violent behavior; it immediately reduces hyperactivity and anxiety. As more and more encouraging changes take place, self-esteem and confidence significantly increase.

Where is neurofeedback used?

Though neurofeedback is used world wide, it is not known in the US. Yet a growing number of professionals are taking an interest in neurofeedback and are incorporating it into their practices – psychologists, Licensed Social Workers (LCSWs), marriage and family counselors (MFTs), RNs, therapists, neuropsychologists and MDs.

What is an EEG?

An EEG (electroencephalogram) is a study of electrical current, or energy, within the brain and provides a graphical record of the electrical activity of the brain; produced by an electroencephalograph. Electrodes are attached to the scalp. These electrodes are attached by wires to a machine ("encoder") which records the electrical impulses. The results are either printed out or displayed on a computer screen.

Different patterns of electrical impulses can denote various problems within the brain. Neurofeedback uses sophisticated software to alter the brain's EEG frequencies. Neurofeedback interacts with the brain's electrical activity by using "operant conditioning." When the brain's energy is equalized, the symptoms of most neurological disorders are eliminated or significantly reduced.

How many sessions are needed?

How many times do you need to go to the gym before you get in shape? The answer is different for everyone. It could be 10, it could be 40 visits. But you'll know much more quickly whether neurofeedback is working for you.

How long is each session?

Total session time usually runs 40 minutes. Double sessions (80 minutes) are generally done at the same time.

When do you stop the training?

The training continues for two to four additional sessions after the symptoms are eliminated or significantly reduced. This solidifies the changes as a new brain habit.

How long before i notice changes from the training?

You may notice changes after the first session. You will definitely see changes by the third session. Sometimes changes come rapidly and sometimes they seem to slow down, and then pick up again. It varies with everyone. But there are always changes.

Do symptoms ever get worse with neurofeedback training?

Sometimes the symptoms may appear worse after the first one or two sessions. Positive changes will begin rapidly afterwards.

How long does the effect of training last?

New neural pathways are created with important balances in electrical energy, and symptoms simply disappear and the changes. Damaged neural pathways are left alone as new ones created bundles, pathways and networks to make the changes permanent. Over forty years of longitudinal studies have confirmed this.

You get results because your brain is learning, even if you are not doing it consciously. Once your brain knows how to read, ride a bike, assemble a puzzle, it knows how to do all of the things you've learned to do your entire. It may get rusty, but the effects of learning remain.

Sometimes individuals have a few sessions if for any reason there's "brain fog" from any of the conditions above. Neurofeedback trainers see that if the brain has been "trained" by neurofeedback previously, it quickly utilizing the information the neurofeedback system is giving it. It's as if the brain says, "I know what to do with this!" and it goes through all the steps it went through in the weeks of initial training, but very rapidly. You quickly get back into your good place.

Can neurofeedback be used while on medication?

Yes. After training for a while, it is often possible to reduce, or eliminate altogether, medication under appropriate supervision.

How does training transfer to everyday situations?

The experience the brain has while being trained for optimal performance generalizes – so when you're actually not using the neurofeedback system, you can still be more focused, less anxious, be in a better mood, sleep better, etc. And all of the changes are permanent.

Is neurofeedback experimental?

No. Since neurofeedback devices are required to carry an FDA label, their use by licensed health providers is completely permissible. There has been over forty years of research on the many uses of neurofeedback with thousands of papers and articles in professional journals.

When the first research papers were published in medical journals in 1968 after the clinical trials at UCLA, Canada and European countries began using neurofeedback for addictions, head injuries and learning disabilities. In 1973 the U.S. military and NASA began using neurofeedback for optimal performance training.

Why aren't more MDs recommending or offering neurofeedback?

Neurofeedback is used in clinical settings all over the world. However, few M.D.s in the U.S. are really educated about it. This is the greatest obstacle to acceptance. Physicians are hesitant to try modalities that use equipment that they are not familiar with and did not learn in medical school.

Are there any adverse effects?

No. There are no side effects to neurofeedback. It is a completely safe and drug free approach to many conditions that are medicated in this country. There are 40 years of clinical experience with neurofeedback, hundreds of thousands of training sessions and thousands of research papers. There are no known situations where a long-term adverse effect has been identified.

The brain uses its own inner resources as opposed to an external drug. Patients often report a sense of calmness after their sessions.

What EEG frequencies are typically trained? What do the frequencies mean?

There are four frequencies that neurofeedback uses:

Beta frequencies are 12 – 42 Hz and have the following features:

- Alert
- Awake
- Conscious processor
- Thinking
- Concentrating
- Active and attached
- Rational–analytical

Alpha frequencies are 8 – 12 Hz and have the following features:

- Normally conscious
- Relaxed wakefulness
- Calm & quiet
- Dreamily thoughtful

Theta frequencies are 4 – 8 Hz. Excessive theta (slow wave activity) and delta (the slowest wave activity) can be associated with distractibility, inattentiveness or not focusing as well as all of the symptoms of head injuries. Theta frequencies have the following features:

- Normally unconscious
- Internal focus
- Inactive & detached
- Receptive
- Observing
- Intuitive
- REM (rapid eye movement) sleep

Delta frequencies are 0 – 3 Hz and have the following feature:

- Deep sleep

When you see the EEG change, is the brain actually changing?

Yes. The EEG, or the brain's energy levels, is a physiological measure. Neurofeedback trains your brain to change the EEG activity so great optimal functioning is available. When the electrical energy in the brain is regulated, symptoms disappear and all changes are permanent.

Does the EEG always change after a session?

It's not unusual to see a clear change in the EEG's behavior right away. When changes occur more slowly, it simply needs more training sessions for all of the improvements to occur.

How long does the evaluation take?

The NeurOptimal™ Neurofeedback System (see the next section) doesn't require a diagnosis or lengthy evaluation. A pre-training baseline is taken at the beginning of each session. This lasts only 30 seconds. A post-training baseline is taken which last 30 seconds as well. The neurofeedback trainer needs to see a quick snap shot of the brain's electrical activity to determine the level of damage.

Is there any pain or discomfort?

No. There is no physical pain at all. Neurofeedback is completely non-invasive, comfortable and very safe. Small sensors are placed on the surface of the head with clips on the lobes, in order to take readings on the electrical output of the individual's central nervous system. You sit comfortably relaxed during the whole session. There's nothing for you to do.

The NeurOptimal® Professional Neurofeedback System

Neurofeedback is not yet known in the U.S., but it is the most advanced neuro technology used in other parts of the world for head injuries, polytraumas, mental health issues, addictions and many other serious neurological disorders.

- The NeurOptimal® Professional Neurofeedback System was developed by Dr. Val Brown and his wife, Dr. Susan Cheshire–Brown, at the Zengar Institute in British Columbia, Canada. It is the most sophisticated and advanced neurofeedback system in the world. It is ten years ahead of any other existing system, as well as being the most cost–effective.
- The NeurOptimal® Professional Neurofeedback System uses information from the brain about its own activity to re–organize itself. And when it does so, a wide range of difficulties – physical, cognitive and emotional – just drop away and life is easier.
- Neurofeedback is a cost–effective and drug–free intervention that uses a laptop computer and a stand alone flat screen monitor.
- The equipment requires little space and is mobile for easy bedside sessions. Using three individual systems, three patients can be monitored by one neurofeedback trainer or technician.
- The shelf life of neurofeedback equipment is very long. The “zAmp” can last up to 5–10 years; the 22” flat screen monitor has no lapse time; the laptop computer can last up to 4–5 years. The laptop is replaced when new software releases require more memory and speed.



**The NeurOptimal® Professional Neurofeedback System from Zengar Institute
British Columbia. Neurofeedback has been reported to help most neurological disorders.**



22" external monitor

The NeurOptimal® neurofeedback system comes with a zAmp with two ear clips and one electrode for each side of the head.

For a detailed look at how the NeurOptimal® Professional Neurofeedback System operates

http://www.youtube.com/watch?v=ufJ_x6xfZ4E

Neurofeedback Case Studies

Head injuries

There are no successful recovery programs for head injuries in the US today. Despite decades of dedicated work on the part of medical and rehabilitation personnel, there is no known effective treatment for head injuries, Post-Traumatic Stress Disorder and their devastating side effects.

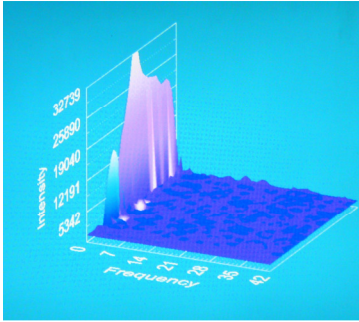
Worldwide neurofeedback is the most successful treatment for Traumatic Brain Injuries, Post-Traumatic Stress Disorder, addiction recovery today. In the past five years alone, the neurosciences and the field of bio-electromedicine have brought medicine into the 21st century.



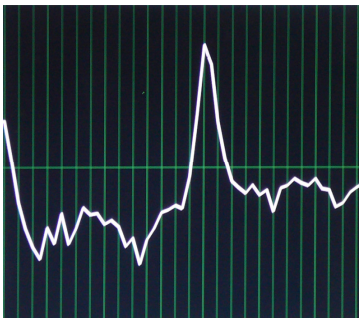
Traumatic Brain Injuries (TBIs) and Post-Traumatic Stress Disorder (PTSD)

These dramatic photos show quick recovery from a mild traumatic brain injury after only 6 sessions. All of the symptoms – acute pain, dizziness, and disorientation, memory problems, unable to focus or concentrate – from her head injury were completely gone without the need for any follow up sessions.

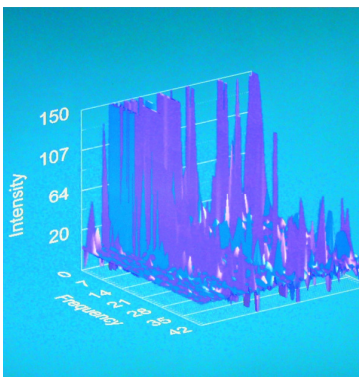
21st century technology has been reported as the most successful way to relieve symptoms of Traumatic Brain Injuries (TBIs) and Post-Traumatic Stress Disorder (PTSD) and other serious neurological disorders. Dramatic changes occur very over a short period of time and are permanent.



This young man, now in his early twenties, was run over by a school bus at the age of thirteen. He lost consciousness for five minutes and, miraculously, appeared to be alright. Soon, he and his parents soon realized that he awoke with a different brain. His severe Traumatic Brain Injury gave him symptoms of serious learning disabilities that included auditory processing problems, problems with memory, concentration and focus. He became increasingly frustrated and his behavior at times was aggressive and threatening. The are “text book” signs of a very bad head injury.

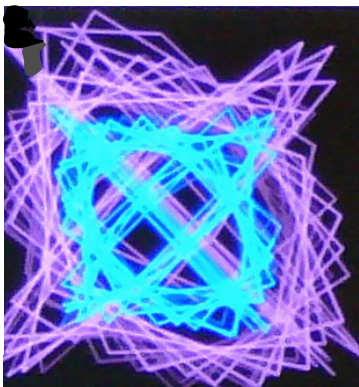


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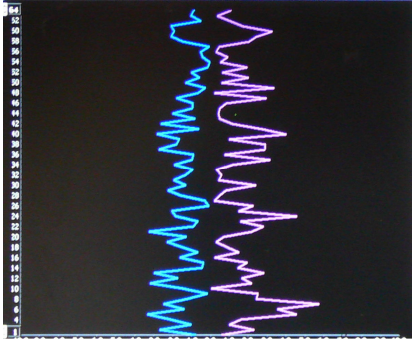
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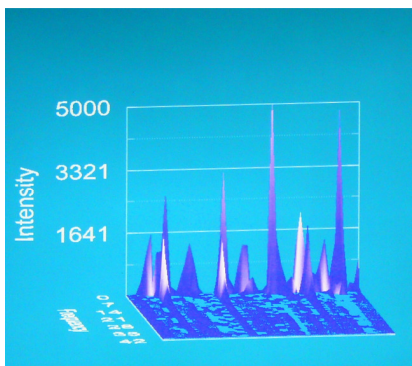
Case studies, cont'd

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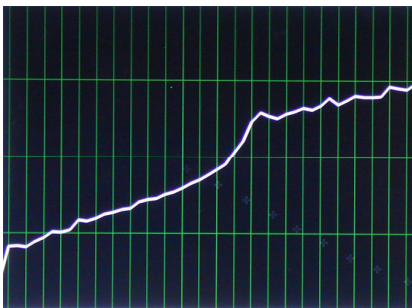
This gentleman, at the age of nineteen, fell 58 feet off the edge of a cliff when hiking with friends. By the time rescuers could reach him he was unconscious and had lost a great deal of blood.

Over a period of 40 years he experienced a spiraling effect of a massive head injury. “Roll out symptoms” became increasingly severe each year. He was an independent contractor but his work became erratic and he could no longer concentrate or even read. He developed a pervasive anger disorder which caused a great deal of disruption in his relationships. His marriage dissolved and he gained a great deal of weight.



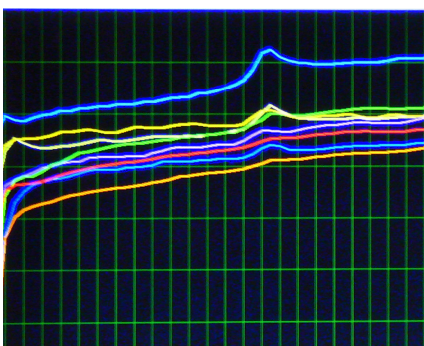
In the case of certain types of severe TBIs, addictions to alcohol and other substances can begin to take over an individual's life. This individual had become eating addicted. As a result his health began to deteriorate. He had high blood pressure and experienced chronic fatigue. Headaches developed and were as devastating as migraines, though he was never diagnosed as having them.

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Dual diagnosis, substance abuse, behavioral and mental health problems

Beginning in February 2007 I began providing neurofeedback treatment to residents of the Santa Barbara Rescue Mission. Neurofeedback provides cost effective and drug free solutions for head injuries and expensive drug therapy for addictions, mental health disorders and learning disabilities. On the next pages are stories of three individuals who were sentenced to the Santa Barbara Rescue Mission by Judge Deborah Talmage, Santa Barbara Country Drug Court. They were repeat offenders – possession, use and sale of drugs but, because their crimes did not involve property or persons, they were given the opportunity for the rehabilitation at the Rescue Mission. The three individuals profiled below have remained out of prison.

I treated many men from this facility at no charge. Three of their stories are presented here.

A neurofeedback program is a weekly, hour-long session consisting of 20 sessions. Each of the individuals described here had multiple addictions, mental health disorders and learning disabilities. In a short period of time they achieved remarkable changes, not atypical from my fifteen years' experience.

These same results have been well documented in the research literature for over 35 years. One of Canada's largest prison systems introduced neurofeedback in the early 1970's to reduce recidivism due to addictions and learning disabilities. The program reduced recidivism from 94% to 15% annually. These results were duplicated in Texas and Kansas.

Neurofeedback is not known in the US but is used widely in Canada, Europe, Japan and Australia. The irony, interestingly and sadly, is that the US military and NASA have used neurofeedback extensively since 1973 for combat readiness and flight crew training.

The three individuals profiled below were part of a program called the Drug Court. The Drug Court gave drug offenders with multiple arrests and who had not committed personal injury or property damage the choice of returning to prison or entering a substance abuse program. Each person in the case studies presented here gave permission for their stories to be told about the relief of symptoms using with neurofeedback training for substance abuse, learning disabilities, and emotional and behavioral disorders.

James

- James, age 38, had been in and out of juvenile and adult criminal facilities since his was a teen. While his resolve was always great, he wasn't able to remain drug free whenever he was released back into the community.
- James was surprised at the speed with which his cravings stopped completely. Cravings were his greatest difficulty in life. Neurofeedback works like individual recording tracks on a CD. Music tracks can be amplified, decreased or eliminated. Cravings come from the immense euphoric chemical bath that addictive substances create. Neurofeedback literally strips this 'track' away from the addictive reptilian, fright-and-flight brain that elicits intense cravings.
- James had also struggled with a learning disability all his life. Over time he developed a great ability to concentrate. He also significantly improved his comprehensive of what he was reading and studying in classes for his high school diploma. He began looking forward to learning.
- A major issue for James was anger management and annoyance toward others, and depression. He became a much calmer and more relaxed person. He found he could just *"let things go"* in ways he had not been able to before. James achieved a very noticeable and exceptionally calm demeanor and ease about him.

- James became further motivated for a successful recovery because he now wanted to make a home for his children. He told me that during the program he decided he wouldn't ever allow himself to become bored so he could continue making progress. He prompted himself by saying, "*Just keep it moving!*" His strong confidence became one of his major characteristics.
- In the fall James called to tell me that he had graduated from the Rescue Mission's high school.

Angel

- At only 21 years old, Angel felt he had already lived three life times. His heavy use of alcohol and many addictive substances began at twelve years old. Angel was rebellious, unable to comprehend anything in school and completely lacking in self-esteem.
- Angel was skeptical about the outcomes from neurofeedback, yet he made rapid changes that he could see and feel from the beginning. Typical of individuals in a neurofeedback program, his drug cravings stopped dramatically early on. He reported that the changes he felt in himself were so great, it was like becoming another person.
- Angel had serious learning disabilities, which had kept him away from school. The most dramatic change in Angel was a remarkable ability to focus, concentrate and understand what he was reading and studying. Angel began bringing a book with him, and it was a challenge at times to break him away from it and begin his session.
- Angel's self-image and self-esteem made tremendous improvements. He began to feel that he was a person of genuine intelligence and worth. He felt he was someone who had a future to look forward to.

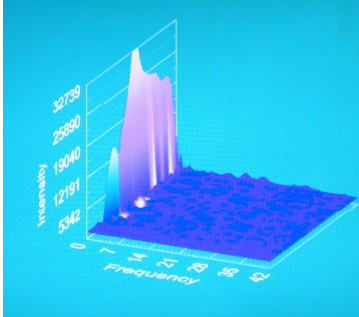
- Angel's appearance changed dramatically. He went from a lost boy with a baby face to a man with hope and confidence. I've seen changes like this many times. As the neurofeedback training 'rewires' the brain, the entire central nervous system begins to mature. When this happens the energy levels of the cerebral cortex reverse from under arousal to a balanced state. Physical characteristics and general appearance begin to catch up with an individual's age.
- Angel also graduated from the Rescue Mission's high school program. He was a run away child in school. He told me he now looked forward to more studies and doing something helpful to others with his life.

William

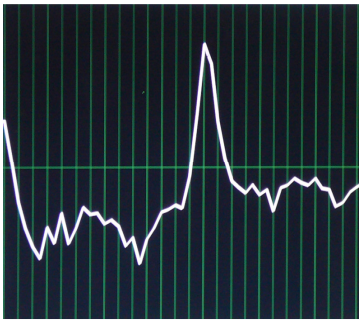
- William, age 32, had many complex issues and had been in jails and prisons for most of his life. He was a rebel without a cause and protested bitterly about the Rescue Mission program. He had tremendous authority issues and complained that everyone was out to get him. His anger and resentment were immense.
- William was on multiple medications for depression, a severe anxiety disorder, vertigo, and a learning disability. Over the course of his neurofeedback program he was able to stop all medication.
- His focus and concentration increased dramatically, but he hated English class. A couple of months into the program, his teacher posted one of his compositions as an example of what she wanted. She encouraged William to write more, which he did, and he reported that he looked forward to English class.
- William is an extremely bright and intelligent person, but his anger and resentment held him back. One of the biggest improvements he made was the shift from belligerence to a greater acceptance of things.
- William, too, became an avid reader. As his ability to focus, concentrate, read and write increased, he began to see education as a road to development and self-improvement.
- During his program, William stopped his anxiety attacks to within three minutes of onset. The attacks then disappeared completely. His severe bouts of vertigo also stopped and he no longer needed medication for these conditions or for his learning disability. He also stopped smoking.
- William became noticeably calmer and his complaints and resentments decreased greatly.
- William's children lived then, and still do, with his sister in Santa Barbara. He sees them each weekend. William must earn the privilege of going away for the weekend. He makes sure he gets it. His change in behavior and attitude were noticeable from the beginning of his treatment. His counselors and teachers remarked to him about the remarkable changes.
- William finished his neurofeedback treatment with a tremendous amount of confidence, improved self esteem, and the ability to create a vision and set goals. Because his cravings for alcohol and drugs had ceased so early in the treatment, he knew he could finish the high school program at the Rescue Mission. It's not a GDE equivalency program but a high school.
- William graduated with honors from high school in the spring of 2008. I was invited by William and Angel to their graduation ceremony.

Traumatic Brain Injuries (TBIs) and Post-Traumatic Stress Disorder (PTSD)

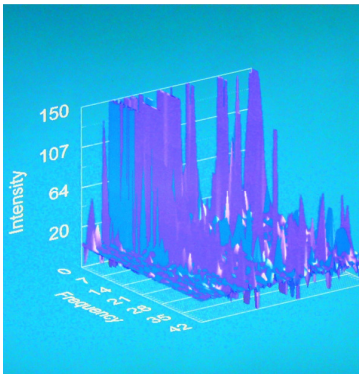
21st century technology has been reported as the most successful way to relieve symptoms of Traumatic Brain Injuries (TBIs) and Post-Traumatic Stress Disorder (PTSD) and other serious neurological disorders. Dramatic changes occur very over a short period of time and are permanent.



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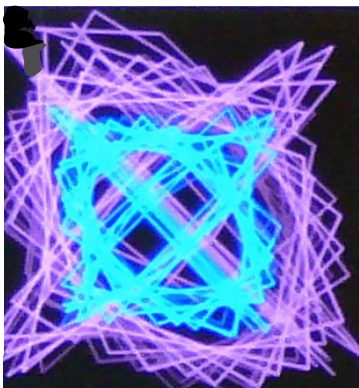


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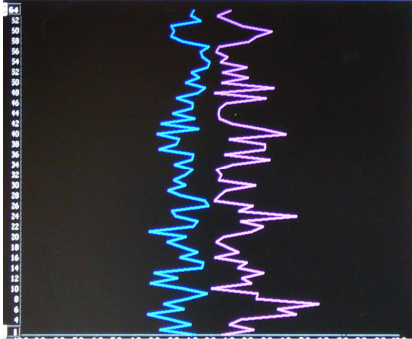
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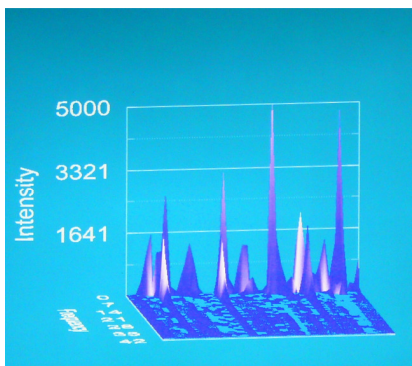
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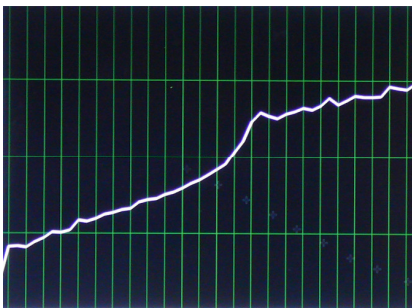
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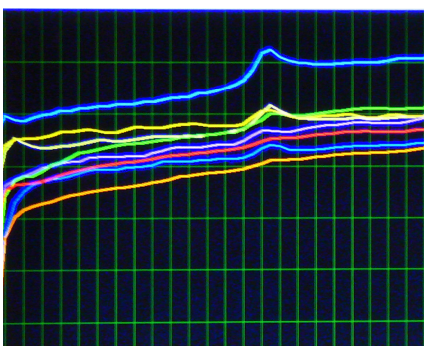
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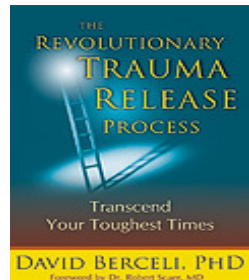
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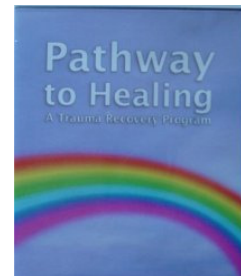
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A Revolutionary Breakthrough for Post-Traumatic Stress Disorder – Trauma Releasing Exercises (TRE™)



Dr. Berceli's Book



DVD –
Trauma Releasing
Exercises

In 2008 Dr. David Berceli published his revolutionary approach for Post-Traumatic Stress Disorder

- Traumatic and painful events continue long after the events have ended. Each event leaves its own mark, etched deeply into the psyche and the body, affecting how well individuals function from that point onwards.
- Dr. Berceli details what stress, anxiety, and trauma can do to physical health and mental well-being.
- Dr. Berceli's revolutionary Trauma Releasing Exercises (TRE™) demonstrate that symptoms from even the most damaging events can be released and become a pathway to a more fulfilling and meaningful experience.
- Dr. Berceli's Trauma Releasing Exercises (TRE™) helps to reestablish psychophysical homeostasis by dramatically relaxing body tension. The exercises are versatile and can be used to affect a wide range of hyperarousal states such as anxiety, irritability, exaggerated, startle response, etc.
- The program can be used as a stand-alone stress reduction and trauma release process or in conjunction with other modalities.
- In 2008 the Chinese Government chose the Trauma Releasing Exercises (TRE™) as one of four modalities to be used in the recovery assistance program of the earthquake survivors of Sichuan Province.

Dr. Berceli is the founder and CEO of Trauma Recovery Assessment & Prevention Services. For fifteen years he has lived and worked in war-torn countries of Africa and the Middle East. Along with individual

trauma counseling, Dr. Berceli has provided specialized trauma recovery assistance to US military personnel, national and international relief agencies, and government and non-government organizations whose staff are living and working in trauma-inducing environments.

The Trauma Releasing Exercises (TRE™) are demonstrated and taught only by individuals who have been certified by Dr. Berceli. Dr. Berceli offers certification programs throughout the year.

Dr. Berceli is a Clinical Social Worker (PhD), Massage Therapist (MT), Certified Bioenergetics Therapist (CBT), Certified Field Traumatologist (CFT), and Spiritual Director (MS).