GSRtDCs Biofeedback Cortical Excitation Stimulation Increases Spontaneous Neuronal Firing to Enhance Chess Skill – with Eductor 2015

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Abstract:
22 subjects male and female ages 17 to 61 were asked to compete in 15 different chess games with another subject. Each player was hooked to a harness, one harness was active to the Eductor, and the other was a placebo control. No one knew which was which, so we have a perfect double blind study. They were asked to report any changes in focus and confidence after the therapy.

6 of the subjects were asked to play in 2 games and 2 subjects played in 3 games. In our games the player receiving the Eductor stimulus won each time. Even after losing the first time the player receiving the stimulus in the second game won when they got the stimulus. 2 subjects played 3 games. They lost when they got the placebo treatment and won when they got the treatment. The stimulation group reported increasing insight, play board vision and chess skills.

The Eductor 2015 with single signal generator and double signal generator setting were compared to placebo control testing. Cybernetic autofocusing of micro-current stimulation and biofeedback correction is used to maximize the effect.

There was a measurable chess performance increase in the treatment group. We asked the subjects to report focus, perception, creativity and confidence after the treatment. There was a dramatic 80% increase in confidence and focus.

Many new studies have shown the safety and efficacy of GSR trans-cranial stimulation inducing improved performance in mental acuity. These devices showed superior effect largely due to the autofocused cybernetic loop technology first developed in the 1980’s by IMUNE and first clinically proven in 2002 and proven again in several studies over the last two decades.

The technology has used a single waveform generator for CES since first registered with the US FDA in 1989. After over 35,000 such devices with not one reported significant risk, safety is obvious. Hundreds of studies have shown this technology to be effective, and now a second waveform generator will be tested.

Introduction:
IT HAS BEEN PROVEN IN THE RESEARCH THAT AN ELECTRO-STIMULATION TO THE BRAIN CAN STIMULATE INSIGHT AND CREATIVITY. TRANS-CRANIAL STIMULATION HAS BEEN DONE TO PUT A POSITIVE CHARGE INTO PART OF THE BRAIN FOR DC STIMULATION, AND A NEGATIVE CHARGE TO SEDATE PART A DIFFERENT OF THE BRAIN. THIS tDCs STIMULATION HAS BEEN PROVEN TO STIMULATE INSIGHT. WE NEED TO PROVE THAT IT CAN WORK WITH THE EDUCTOR TO STIMULATE A PERSON TO PLAY CHESS BETTER.

WE HOWEVER APPLY OUR POSITIVE CHARGE TO THE WHOLE CRANIUM AND THE NEGATIVE TO THE ANKLE THUS STIMULATING THE WHOLE BRAIN. WE USE A VARIANT VOLTAMMMETRIC PULSE THAT IS DESIGNED FOR EACH OF A VARIETY OF USES.
IT IS ALSO OUR BASIC HYPOTHESIS THAT A SMALL DC PULSED MICRO-CURRENT APPLIED TO THE CRANIUM CAN STIMULATE OSMOSIS AND THUS IMPROVE SYNAPTIC ACTION AND INSIGHT. THIS EFFECT CAN BE MAXIMIZED WITH AN AUTOFOCUSED CYBERNETIC PULSE. THIS HAS BEEN PROVEN WITH THE EPFX, QXCI, SCIO AND A HOST OF OTHER RESEARCHERS HAVE MADE SUCH TECHNOLOGY. NOW WE ARE TESTING THE NEWEST ADVANCE THE EDUCTOR WHICH HAS AN EXTRA TWO SIGNAL GENERATORS.

WE FIRST USE THE EDUCTOR DEVICE TO MEASURE THE BODY ELECTRIC FOR VOLTAGE, AMPERAGE, RESISTANCE, HYDRATION, OXIDATION AND ACID ALKALINE BALANCE PLUS OUTPUT OF DISSIMILAR CONDUCTION MATERIALS. AND ONCE WE KNOW THE BODY ELECTRIC FACTORS WE CAN APPLY AN APPROPRIATE TAILORED ELECTRO-POTENTIAL SIMILAR SIGNAL TO THE BODY. THEN WE MEASURE THE ELECTRO RESPONSE AND USE IT TO MAKE THE NEXT STIMULATION. THIS MAKES AN AUTO FOCUSED CYBERNETIC LOOP WHERE THE BODY ELECTRIC CAN GUIDE THE DEVELOPMENT OF THE STIMULATION OF THE SYNAPTIC FUNCTION. THIS HAS BEEN SHOWN TO BE ABLE TO INCREASE MENTAL ACUITY.

**Introduction cont-**

The likelihood of non-invasively moderating the activity of the brain using GRS transcranial current brain stimulation (tCS) has been fascinating the researchers in a assortment of fields as it permits to improve cognition in various domains (Fregni et al., 2005; Santiesteban et al., 2012; Schaal et al., 2013; Snowball et al., 2013) or treat many human psychiatric situations (Boggio et al., 2007, 2008; Rigonatti et al., 2008; Nitsche et al., 2009; Terhune and Cohen Kadosh, 2013). There are a quantity of tCS techniques available, including, but not limited to, transcranial direct current stimulation (tDCS), transcranial alternating current stimulation (tACS), and transcranial random noise stimulation (tRNS) (for a review on the tCS methods, see: Nitsche et al., 2008; Ruffini et al., 2013). In tDCS, a slight direct current (DC) is passed from anodal (positive) to cathodal (negative) electrodes located in the head surface in order to target specific brain areas underneath the electrodes (Nitsche and Paulus, 2000; Faria et al., 2011). Initial studies with animals established an intensification in excitation through membrane depolarization in the neurons underneath anodal electrode but an inhibition under the cathodal one (Bindman et al., 1962, 1964; Purpura and McMurtry, 1965). In humans, there is evidence for an increase in excitability in areas underneath the anodal electrode and a reduction underneath the cathodal following tDCS on the motor (Nitsche and Paulus, 2000) and visual cortex (Antal et al., 2004). Although this rationale of higher excitability under anodal and inhibition under cathodal has been used for defining the stimulation protocol in many studies, it remains uncertain if this is so in all cases, as other variables such as the position of the cathodal in relation to anodal (Nitsche and Paulus, 2000; Antal et al., 2004; Moliadze et al., 2010) and the strength of the stimulation (Batsikadze et al., 2013) seem to inhibit with the excitability effects observed under anodal and cathodal stimulation sites.

**Brief History:**

Micro-current Cranial Electro Stimulation MCES is a new advance in Cranial Electro Stimulation CES and energetic medicine. "Electrotherapy" has been in use for over 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 suggested using the shocks from the electrical fish for medical therapies. There is evidence of electro-therapy in ancient Babylon and Egypt. The body works on electro signals and electro stimulation of low current helps homeostasis.

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

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

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 forehead was far more convenient, and quite effective.

CES was initially studied for insomnia and called electro-sleep therapy; it is also known as Cranial-Electro Stimulation and Transcranial Electrotherapy.

One of the mechanism of action for CES is that the pulses of electric current increase the ability of neural cells to produce serotonin, dopamine DHEA endorphins and other neurotransmitters stabilizing the neurohormonal system. Since a slight stimulation of a pulsed milliamp current increases osmosis it is shown that neurhormones work better from the increased osmosis.

It has been demonstrated that through CES, an electric current is engrossed upon the hypothalamic region; during this process, CES electrodes are placed near to the face with the ground at the lower body.

Current research shows an increase of the brain's levels of serotonin, norepinephrine, and dopamine, and a decrease in its level of cortisol. After a MCES treatment, users are in an "alert, yet relaxed" state, characterized by increased alpha and decreased delta brain waves as seen on EEG.

In 1972, a specific form of addiction release CES was developed by Dr. Margaret Patterson, providing small pulses of electric current across the head to ameliorate the effects of acute and chronic withdrawal from addictive substances. She named her treatment "NeuroElectric Therapy (NET)".

Working with Margaret the SCIO system has had the MCES capacity built in.

The SCIO is a descendent of the EPFX system US FDA registered in 1989 still in registered for sale in America. Since 1989 we have sold over 31,000 such systems under the registered name of EPFX, QXCI, and SCIO. There have been well over 500,000,000 patient visits with all getting some MCES, and not one reported case of any significant risk. Over 200 studies and articles have been written and published on these systems and no report of any risk. It has passed all safety tests since 1989 and all risk analysis has proved it to be insignificant risk.

The systems outlined have a potential of 0-4 volts which is beneath the human threshold of perception, and 0-7 milliamps which makes it safe and for most subtle and undetectable.
For over 26 years reports of stress reduction, relaxation, anxiety reduction, emotional balance, addiction release, insomnia reduction and sleep induction have been reported from the users and doctors.

The Eductor has a second wave form generator that can further intensify the CES effect. All this was done with a cybernetic loop technology guided by the patient body electric reactions to the stimuli. Thus we can further intensify the CES effect over older antiquated non-cybernetic technology.

**Method:**
22 subjects male and female ages 17 to 61 were asked to compete in 15 different chess games with another subject. Each player was hooked to a harness for 10 min. One harness was active to the Eductor, and the other was a placebo control. No one knew which was which, so we have a perfect double blind study for comparison of the insight stimulation effect.

**Double Blind Study – No one knows who is getting the stimulation**

All subjects were asked to report any felt changes in cognition, pain, focus and confidence during and or after the therapy or during the game. Subject, stimulation therapist, and game supervisor did not know who got the stimulus. The subject with the GSRtDCs stimulation was only revealed after the game was over. So player anticipation and research therapist expectation was removed from the study effect.

Of the 22 participants, 6 of the subjects were asked to play in 2 games and 2 subjects played in 3 games. So there were 15 chess games. In each game the subjects were asked to rate their increases in insight, confidence, focus and game vision.
No pain or negative effects were reported. There is no basis for any substantial risk in any of the literature. Safety has been established and efficacy was demonstrated in this study.

**Results:**

In our games the player receiving the Eductor stimulus won each time. Even after losing the first time the player receiving the stimulus in the second game won when they got the stimulus. 2 subjects played 3 games. They lost when they got the placebo treatment and won when they got the treatment. The stimulation group reported increasing insight, play board vision and chess skills.

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In each game there was a reported increase in insight, confidence, and game vision in each of the subjects.

This shows a dramatic increase in performance, confidence and focus over the placebo control group.

The GSRTDCs part of the program works to stimulate the brain for math performance and confidence as well.

This is verification that the GSRTDCs stimulation is helpful for Chess players. This can be extrapolated to imply that any business-person, executive, sales-person can up their game with the GSRTDCs stimulation.
A Vast History of Peer Review Validation and Verification for The Eductor

Research Shows How it Stimulates Learning Memory and Insight
Discussion:
There were no reported risks during the study.

The study showed clearly that the GSRtDCs - CES can stimulate math ability, focus, confidence and memory retention. The history of micro-current GSRtDCs CES positive effects on learning dates back decades. There have been no safety issues in the literature. There has been subtle but positive effects demonstrated on thousands of research documentation. This research shows the extra boost of positive effects of the second wave form generator.

References:

1. 21CFR882.5800, Part 882 ("Neurological Devices")
2. Smith RB, Cranial Electrotherapy Stimulation: Its First Fifty Years
13. DOI: 10.1007/s11940-008-0040-y


27. FDA medical device classifications

