

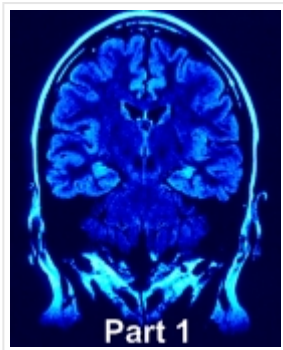
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What Is Cranial Electrotherapy Stimulation? (Part 1)

by **Christopher Fisher, PhD** on [September 9, 2009](#) in [Electrotherapy](#), [Highly Accessed](#)



Cranial Electrotherapy Stimulation (CES), also known as Cranial Electrical Stimulation and Cranial Electrostimulation, falls under the branch of alternative medicine called Electromedicine, which treats physical and psychological conditions with varying levels of electrical current (Kirsch, 2006). CES is the application of a very low level alternating electrical current generated from a 9-volt battery to the brain via clips placed on the ears. In this review, I focus on a particular brand of CES: Alpha-Stim. I do not intend to advocate one brand over another; however, I select Alpha-Stim because I have been trained and conducted research at the doctoral level with this device, as well as received continuing education training specific to this brand. Additionally, Alpha-Stim has a great deal of published research available for discussion and analysis.

Alpha-Stim brand CES from Electromedical Products International, Inc. is a medical device registered with the Food and Drug Administration (FDA) for the treatment of depression, anxiety, and insomnia that uses a propriety and patented wave form. Thus, a licensed healthcare provider must a prescription and oversee treatment. A typical treatment involves 100 microamperes to 4 miliamperes of electricity administered for 20 to 60 minutes daily or every other day (Kirsch, 2006b). At my training facility, I often start with a daily treatment using a very low level current for 60 minutes that is increased slowly for the first week or two to determine tolerance and then switched to every other day treatments for 20 minutes thereafter. Patients may also undergo CES treatment on an “as needed basis” during periods of unusual duress or symptom flare-up. Of course, clinicians should evaluate their patient to determine the specific protocol relevant to the patient’s needs. People who use Alpha-Stim report a variety of positive feelings after therapy that includes a sense of calm and deep relaxation, decreased feelings of anxiety or sadness, or feeling mentally alert yet physically calm. Some people report alternating periods of feeling lighter or heavier during treatment (Kirsch, 2002b).

Previous research shows Alpha-Stim’s adverse effects to be mild and time-limited (Thaxton & Patel, 2007). These include dizziness (.15%), skin irritation/electrode burns (.12%), and headaches (.22%) – notice these are all less than 1%. Dizziness or nausea may occur in situations when a higher than necessary current is utilized, and hyperexcited states, increased anxiety, and sleep disturbances may occur as paradoxical reactions (Electromedical Products International, Inc., 1998). Participants with PTSD may experience vivid dreams that may be perceived as disturbing (Kirsch, 2007e). Studies have shown that Alpha-Stim has been used safely in combination with a wide variety of psychotropic medications (Childs & Price, 2007) and with closed head injury patients receiving anti-seizure medication (Smith, Tiber, & Marshal, 1994).

An interesting phenomena is that the word “electrical,” as in Cranial Electrical Therapy, seems to conjure up frightening images that sometimes lead to a mistaken recollection of electroconvulsive therapy (ECT) – an intense and controversial electricity-based therapy used to treat severe depression. CES and ECT share little in common other than

the use of electricity to treat various psychological conditions. Notice too that CES generates its energy from one 9-volt battery so the risks associated with CES are quite different from ECT.

In the soon-to-be released [part 2](#) of this series, I review Alpha Stim's proposed mechanisms of action, as well as current research on Alpha-Stim's effectiveness to treat depression, anxiety, and insomnia. I will also provide evidence-based information on CES for the treatment of chronic pain since this is a common off-label use.

Editorial Note:

Part 2 of this series is [here](#).

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About Christopher Fisher, PhD

Dr. Christopher Fisher, Managing Editor for The Behavioral Medicine Report, received his PhD in Clinical Health Psychology & Behavioral Medicine from University of North Texas. His clinical training emphasized biopsychosocial approaches to health and wellness, including Cognitive Behavioral Therapy (CBT), neurofeedback, biofeedback, cranial electrical stimulation (CES), and QEEG. He is Board Certified in Neurofeedback (BCN) by BCIA. Dr. Fisher also received a master's degree in Clinical Psychology from Texas A&M - Corpus Christi. Dr. Fisher maintains a private practice in Corpus Christi, Texas, and offers individual therapy, group therapy, peripheral biofeedback, and neurofeedback. You can learn more at <http://www.christopherfisherphd.com>. He also maintains an informational website for panic attacks (panic disorder) here: <http://www.panicintervention.com> Dr. Fisher enjoys spending time with family, watching sports and movies, and outdoor activities.

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8 Responses to *What Is Cranial Electrotherapy Stimulation? (Part 1)*



Deborah Sevy September 21, 2011 at 9:08 PM #

REPLY ↩

Hi, am a college student who is taking a psychology research class. For my assigned research proposal I am using the question "Does regular treatment with cranial electro therapy stimulation (CES) reduce anxiety that often accompanies smoking cessation?" I need to find two peer reviewed books and 8 articles on either CES and anxiety, or anxiety and smoking. I am wondering if you can at least suggest a book on CES that has been peer reviewed. Anything else you can recommend that is along these lines and peer reviewed would be greatly appreciated.

Thanks,
Deborah Sevy



Christopher Fisher, PhD October 1, 2011 at 8:30 AM #

REPLY ↩

Hi Deborah,

My apologies for my very delayed response. I recently started a private practice and I have gotten behind on other things.

I do not know of any peer reviewed books. Most books published by publishers do get technical editing where they fact check. But as far as I know, journal articles are usually the only formally peer reviewed publications... with that said here are some suggestions:

Books

Cranial Electrotherapy Stimulation: Its First Fifty Years, Plus Three: A Monograph – I haven't read this; and Dan Kirsch, a friend and inventor of Alpha-Stim CES doesn't like the book for reasons I won't go into.

The Science Behind Cranial Electrotherapy Stimulation – This is review of the evidence for CES effectiveness by Dan Kirsch. I have read it, and it is good, but it is now out of date. He intends to update this book but it probably won't be for another 6 months to a year.

Weiner's Pain Management: A Practical Guide for Clinicians, Seventh Edition (Boswell, Weiner's Pain Management) – do not buy this because you can get the chapters on CES for free from the Alpha-Stim website. This might be as close to peer reviewed as you can get since they are chapters included in an edited book. Go to <http://www.alpha-stim.com> to download.

Articles

By far the best place to get CES articles is from <http://www.alpha-stim.com> website. Dan has done a good job of collecting various studies, and has made most available directly from his website.

You can also check <http://www.ncbi.nlm.nih.gov/pubmed> which I'm sure you know about. I did quick search on Cranial Electrotherapy Stimulation and found at least one article: Evaluation of cranial electrostimulation therapy on short-term smoking cessation. Be sure to also search "Cranial Electrical Stimulation" and "Electrosleep" which are other common names.

I hope this helps!

Dr. Fisher



Jennifer December 4, 2011 at 2:45 PM #

REPLY ↩

Hello Dr. Fisher,

I wrote a paper for my Research Methods in Psychology course similarly to a research proposal, but was asked by my professor to not conduct an actual study (this is an undergraduate course), but to back up possible patterns of results using related scientific literature. I wrote about the use of the Alpha-Stim on reducing college student test anxiety. The paper really was only about anxiety in general but my main focus was supposed to be on test-taking anxiety, to be specific. Do you know of any research involving the Alpha-Stim, or other related Transcranial Stimulation, on college students? Thank you so much! I don't have a deadline at this point so whenever you can get back to me is fine and of course appreciated. :)



Jennifer December 4, 2011 at 3:05 PM #

REPLY ↩

http://www.cesultra.com/ces_studies.htm#6

There is one study mentioned in that link above ^ but I am not sure what device was used and I don't know where (or if at all) the study has been published.



Christopher Fisher, PhD February 4, 2012 at 7:07 PM #

REPLY ↩

It appears that it may have been the manufacture's device who is promoting this website: CES Ultra. But I am not entirely sure. You might email them.



Christopher Fisher, PhD February 4, 2012 at 7:06 PM #

REPLY ↩

Hi Jennifer,

Sorry for my terribly delayed post. My private practice is very busy and I have fallen behind on BMED Report. I cannot think of any on college students off-hand. I think Richard Kennerly's QEEG study of alpha-stim was with college students. Richard and I actually worked out of the same neurofeedback lab for a short while. You can find his paper plus many other research studies here: <http://www.alpha-stim.com/research-and-reviews/>

Hope this helps.



Harris C Rackley July 6, 2012 at 5:23 PM #

REPLY ↩

Dr. Fischer,

I would like to find a doctor to prescribe one of these CES machines, due to the following reasons:

1. Depression (using Xanax).
2. Anxiety (using Xanax).
3. Severe insomnia (using alprazolam, cyclobenzaprine). Without meds, I may get 1-2 hours sleep per night.

This device may help me a great deal, as I would like to reduce, or eliminate meds, which affect memory, concentration and causes dizziness at times.

Thank You.



Christopher Fisher, PhD July 6, 2012 at 8:35 PM #

REPLY ↩

Hi Harris,

You should speak with your prescribing healthcare provider who is familiar with your mental health, such as your physician or psychiatrist. Any doctor or qualified healthcare provider can prescribe an Alpha-Stim. Psychologists can prescribe Alpha-Stim; however, some are reluctant too.

I wish you the best and I hope you find the relief you seek.

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