

## Frequently Asked Questions

### ***Q. What is CES?***

CES, or cranial electrotherapy stimulation, is a non-pharmacologic approach using gentle electrical impulses for the prevention and treatment of depression, anxiety, and insomnia.

### ***Q. How does it work?***

The exact physiological mechanism by which CES works is not fully understood and is still the subject of research study. It is hypothesized, however, that 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.

### ***Q. Is CES safe?***

CES 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 CES a non-significant risk modality.

The unit's sole source of current is a common 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.

### ***Q. How is the current transmitted?***

The CES Ultra is powered by a nine volt battery. It utilizes 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 fitted with felt or conductive rubber electrodes which attach to each earlobe.

### ***Q. What is it like?***

Most people find CES a pleasurable experience. The most you will ever feel is a gentle tingling sensation with the higher frequencies and a light-headedness with frequencies less than one hertz. If the sensation proves too strong, you can simply reduce it by a simple turn of the knob.

Increasing or decreasing the amplitude does not impair the efficacy of the treatment. Research shows CES 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.

### ***Q. Is CES user-friendly?***

Most CES units are easy to employ: (1.) Attach either the electrodes or the ear-clips. (2.) Insert the lead-wire into the jack. (3.) Turn the unit on. (4.) Set the timer and amplitude.

### ***Q. Does CES work for everyone?***

Nothing works for everyone. But CES is effective for most people.

***Q. 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.

***Q. How does CES affect sleep?***

CES 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. CES 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.

***Q. 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.

***Q. When should CES be used?***

CES may be used on 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—a positive affirmation 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 for themselves how to best incorporate CES into their daily routine.

***Q. Where can it be used?***

Most CES units are portable, allowing its use just about anywhere and under a variety of circumstances, except those noted under the contraindications. You can use it at home while watching TV, doing the dishes, or at the office while poring over a report. But CES should be treated as more than an aside—one more task, squeezed in between others. It is an important reminder of the need for inner quiet. Though you need not interrupt your usual activity for CES, its results are generally enhanced by setting aside a special time for its use alone.

***Q. What is the suggested length and frequency of treatment?***

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. Individuals undergoing psychiatric treatment or suffering from severe anxiety and extremes of compulsive behavior often benefit from more frequent and prolonged application.

When symptoms of depression or anxiety have lessened or disappeared, it is important to have continuous access to the unit as a tool for relapse prevention on an as-needed basis.

It is helpful that you work closely with your physician/healthcare professional to determine the role CES plays in your overall treatment program.

***Q. What is the difference between the two CES Ultra frequencies?***

The CES Ultra has two different electrical frequencies: 100 Hz and 0.35 Hz. The frequency of choice is the 100 Hz which has the largest body of evidence as to efficacy. It may be used while engaging in other activities, providing a gentle and calming tingling sensation.

The 0.35 Hz setting operates at a lesser amplitude, generating very little actual sensation, but with a more subtle impact. The 100 Hz has so far proved to be the most effective configuration. Micro-frequencies, such as the 0.35 Hz, should be used after having first tried the 100 Hz and primarily when meditating or in a resting state.

***Q. Are there any contraindications for its use?***

There are no known contraindications for use of CES. There are, however, circumstances in which its safety has not been tested. CES should not be used without on-going clinical supervision by severe depressives, epileptics, those known to be pregnant, or by individuals with implanted electronic devices such as cardiac pacemakers or insulin pumps. The induced relaxation response, resulting from use of CES does not in any way impair reaction time. It is recommended, however, that CES not be used while operating dangerous or complex equipment or while driving.

Less than three percent of CES users report a slight headache. This is usually alleviated by simply down turning the current. If the headache recurs during ordinary use, cease using the unit and consult with your physician.

As with the use of any medical device, the physician/licensed practitioner should be informed of any medication or neurotransmitter blockers the patient is taking as well as the employment of cardiac pacemakers or other electronic devices as mentioned above.

CES is not a substitute for professional counseling, meditation, or constructive relationships. Used in conjunction with those efforts, CES assists you in attaining a balanced emotional state.

***Q. What is the history of CES?***

Research on what is now referred to as CES began in the former Soviet Union during the 1950's, its primary focus being the treatment of sleep disorders, hence its initial designation as "electro-sleep." Treatment of insomnia was soon overshadowed, however, by psychiatric application for depression and anxiety. Since then, it has been referred to by many other names, the most popular being "transcranial electrotherapy" (TCET) and "neuroelectric therapy" (NET).

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.

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.

***Q. What research is there as to its effectiveness?***

There are approximately 1,000 articles on CES therapy many of which are listed in four reviews put out by the Foreign Service Bulletin of the United States Library of Congress. This is in addition to the wealth of physiological and bio-engineering data on electro-sleep and electro-anesthesia, including 18 experimental animal studies. Human research studies on CES currently number more than 100. Its efficacy has been clinically confirmed through 28 established psychometric tests, computerized EEGs and topographical brain-mapping. Meta-analyses yielding positive results from the use of CES have been conducted at the University of Tulsa and at the Harvard University School of Public Health.

***Q. What is the current legal status of CES?***

CES is an over-the-counter device, available without a prescription and with few restrictions everywhere in the world except for the United States. There it may be secured only on the order of a licensed health care practitioner (M.D., N.D., D.O., PhD. Psychologist, or Chiropractor, depending on a given state's regulations).

***Q. Why haven't I heard more about CES?***

CES has been a relative unknown and under-deployed technology due to the fundamental Western bias on behalf of pharmaceuticals. Within the last ten years, we have come to better understand 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 CES.

***Q. 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 oft-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 efficacy 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.