How does Alpha-Stim cranial electrotherapy stimulation (CES) work? The exact mechanism by which Alpha-Stim produces effects is not fully known. However, based on previous and ongoing studies, it appears that the Alpha-Stim microcurrent waveform activates particular groups of nerve cells that are located at the brainstem, a site at the base of the brain that sits atop of the spinal cord. These groups of nerve cells produce the chemicals serotonin and acetylcholine, which can affect the chemical activity of nerve cells that are both nearby and at more distant sites in the nervous system. In fact, these cells are situated to control the activity of nerve pathways that run up into the brain and that course down into the spinal cord. By changing the electrical and chemical activity of certain nerve cells in the brainstem, Alpha-Stim appears to amplify activity in some neurological systems, and diminish activity in others. This neurological ‘fine tuning’ is called modulation, and occurs either as a result of, or together with the production of a certain type of electrical activity pattern in the brain known as an alpha state which can be measured on brain wave recordings (called electroencephalograms, abbreviated EEG). Such alpha rhythms are accompanied by feelings of calmness, relaxation and increased mental focus. The neurological mechanisms that are occurring during the alpha state appear to decrease stress-effects, reduce agitation and stabilize mood, and control both sensations and perceptions of particular types of pain.

These effects can be produced after a single treatment, and repeated treatments have been shown to increase the relative strength and duration of these effects. In some cases, effects have been stable and permanent, suggesting that the electrical and chemical changes evoked by Alpha-Stim have led to a durable re-tuning back to normal function. Electromedical Products International, Inc. is dedicated to using exciting new research technology and advanced, innovative methods to study the exact mechanisms through which Alpha-Stim can be beneficial to patients with pain, anxiety, depression and sleep disorders.

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