The Science Behind Cranial Electrotherapy Stimulation

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The definitive guide to the science behind this exciting, modern approach to treatment of anxiety, depression, insomnia, and other stress related disorders. It's safe and easy to use and proven effective. Learn why and how in this updated 2nd edition. A complete annotated bibliography of 126 human and 29 experimental animal studies, plus 31 reviews, 2 meta-analyses, a current density model of CES, side effects and follow-up tables, Alpha-Stim CES physician surveys, all indexed and cross referenced. 224 pages, 2004, softcover.

Excerpted from page thirteen of the Introduction:

In the West, we tend to conceptualize brain activity in terms of neurochemical reactions at the presynaptic/postsynaptic neural membrane juncture. Thus, Pozos and his group at the University of Tennessee Medical Center studied the cholinergic/adrenergic system in several experiments with dogs. They injected their subjects with reserpine, a dopamine reuptake blocker, then applied electric current to engender increased dopamine release into the synapse and consequent depletion when this was broken down by monoamine oxidase (MAO). This gave the dogs Parkinson-like symptoms. Then, while the reserpine was still blocking the dopamine reuptake, atropine was injected to act as a blocker to the postsynaptic uptake of acetylcholine, thereby preventing or reducing acetylcholine's effect on the postsynaptic membrane. Now the dogs' Parkinson-like symptoms disappeared, the dogs returning to normal behavior. To further check their theoretical system, the researchers removed the atropine and added physostigmine to the still reserpinized dogs. The physostigmine was intended to block the MAO breakdown of intrasynaptic acetylcholine, making more of it available. The dogs responded with their most profound Parkinson-like symptoms. Finally, the researchers removed all drugs from the dogs' bloodstream and found that dogs allowed to go about their normal activities recovered in three to seven days, while a similar group given CES stimulation recovered in two to eight hours.[32]

[32]Pozos, Robert S., Strack, L.F., White, R.K. & Richardson, Alfred W. Electrosleep versus electroconvulsive therapy. In Reynolds, David V. & Anita Sjoberg, (Eds.), Neuroelectric Research. Charles Thomas: Springfield, 23:221-225, 1971.