

A QUALITATIVE DESCRIPTION OF THE ELECTRO-SLEEP PHENOMENA AND THE ELECTRO-ACUSCOPE 80

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The Electro-Sleep phenomena occurs when a relaxed state is induced by the transcranial application of a low intensity current such as is produced by the Electro-Acuscope 80. Actually, the word "electro-sleep" is misleading in that patients are not forced into sleep; the term Electro-Sleep as it is used here will refer to a relaxed, conscious state.

Most of the research and scientific investigations on Electro-Sleep have been conducted in the Soviet Union for the past few decades. There has been very limited research conducted here in the United States. A great deal of this hesitancy is probably due to the traditional mistrust of the use of electrical devices in clinical psychiatry. A few studies conducted at certain universities have produced interesting results.

Groups of patients with chronic anxiety, depressions, and nocturnal insomnia were selected on the basis that they have had little or no positive response to orthodox methods of treatment. These patients had all utilized various types of sleeping medications for long periods of time with poor results. The use of Electro-Sleep with these same patients, however, showed significant improvements in their conditions. The most marked result was an increase of sleep.

In order to better understand the Electro-Sleep phenomena, it is essential to know the function of the cerebral cortex. The brain is divided into two major regions: the telencephalon (cerebral hemispheres) and the brainstem. The cerebral hemispheres are composed of the cerebral cortex and can be divided into several regions depending on the distribution of afferent fibers that connect with deeper nerve centers. The major functional regions of the cortex are the primary motor area,

primary somesthetic area, primary visual area, primary auditory area, and the association areas. Association area situated near the primary sensory areas are necessary to formulate sensory stimuli into images and to comprehend their meaning. Objects come to be associated with a constellation of past experiences-memories. When sensory impulses excite these memories, the object is recognized. Before performing complex voluntary movements, there must first be a mental formulation of the plan, an idea. The idea is transferred by association fibers to the motor area so that the movement can be executed. Complex sensory and motor associative mechanisms also underlie the comprehension of language. The large remaining part of the frontal lobe, in front of the motor areas, is the prefrontal cortex, or frontal association area. Much of the prefrontal cortex is connected to the thalamus, which in turn, has connections with autonomic centers in the hypothalamus. The frontal lobes also receive association fibers from other regions of the cortex. This region of the brain is responsible for certain aspects of higher intellectual functions and emotional behavior in man.

The largest ascending tracts to the cerebral cortex and found in the dorsal white columns. These pathways are the fasciculus gracilis and the fasciculus cuneatus, which are formed by the ascending branches of the central processes of the dorsal root ganglion cells. The fasciculus cuneatus contains fibers from the upper thoracic and cervical ganglia. All these fibers terminate on neurons in the nucleus gracilis and nucleus cuneatus in the medulla. The axons of the latter neurons then cross the midline, travel upward in the medial lemniscus, and end in the ventral dorsolateral nucleus of the thalamus. From the thalamus, neurons in turn, send axons to the

sensory areas of the cerebral cortex. The fibers in the dorsal columns carry impulses from tactile receptors necessary for the ability to detect the size, shape, and texture of objects by feeling them. The central processes of pain and temperature receptors enter the zone of Lissauer (dorso-lateral fasciculus) and ascend or descend one or two segments before ending on cells in the substantia gelatinosa and dorsal gray matter.

The association cortex also chooses perspective input and motor outputs. These signals operate on the same electro-chemical language. The relationship between the association cortex and these input/output messages prevents it from being bombarded unnecessarily by the constant inflow of information produced by the environment and metabolism. Relatively unimportant events will not produce adequate stimulation of these divergent areas to initiate the involvement of the association cortex.

With the assistance of supporting neurological systems, the association cortex is capable of attending to or shutting out the localized perception and motor processes by its own volition. The recent discoveries in monitoring equipment indicate that this capacity can be more extensive than previously imagined.

The basic composition of the cortex and the entire central and peripheral nervous system, is the neuron. A neuron is an elongated living cell with electro-chemical properties. Like all living cells, its overall organization is very complex. There is yet much to learn about the complete picture of its functions. The diverse intricacy of the neuron is its metabolism, which exists in a similar fashion in other living cells. Much of this intricacy can be thought of as being a support system to the specialized characteristic behavior of the neuron—its electro-chemical "logic".

Brainwaves, as they are received

by an electrode on the surface of the scalp, are the sum of this electrochemical language passing through a very large group of neurons (hundreds of millions) situated below the electrode. This sum varies to produce a sine wave (roughly speaking) with two fundamental characteristics: peak to peak or "signal strength" and frequency or number of peaks produced per unit of time (usually the second).

The amplitude (the extent of an oscillation) is usually measured in microvolts (a millionth of a volt), peak to peak of 200 uvpp. This is an extremely weak signal. The frequency is measured in cycles per second (Hz) and normally ranges from 0.1 Hz to 30 Hz. These basic characteristics are believed to be determined by the degree of synchronized inherent in the group of brain cells being monitored. When the activity of these brain cell groups is synchronized—the resulting amplitude is higher, and the frequency (or rate of change) is lower.

Brainwaves have been categorized into four basic levels on the basis of frequency: DELTA-0.1 to 3.5 Hz, THETA-3.5 to 7.5 Hz, ALPHA-7.5 to 14 Hz, and BETA-14 to 30 Hz.

The BETA (14 to 30 Hz) spectrum represents relatively unsynchronized activity. This activity appears to be chaotic, rapidly changing in frequency and amplitude. It rarely exceeds over 50 uvpp. It is associated with normal, outward awareness; i.e., taking in, evaluation, and filing away of various forms of information received through the senses. It is usually the state when an individual experiences anger, hunger, anxiety, tension and surprise.

The DELTA (0.1 to 3.5 Hz) wave is opposite to BETA and would be the result of high synchronization. Its slow rate of change is associated with relatively unconscious states such as deep, dreamless sleep.

These two levels of consciousness between these two extremes and the THETA states, are extremely interesting. The ALPHA (7.5 to 14 Hz) spectrum is usually produced as rhythms of steady frequency and amplitude. It is associated primarily with pleasant inward awareness, a

non-drowsy but relaxed state, a tranquil state of mind. Outside stimulation usually interrupts this ALPHA rhythm. A dramatic example of this involves the monitoring of occipital brainwaves. The occipital region is the center of the visual processing. When a patient's eyes are open, activity is at a busy BETA level. When eyes are closed, the BETA activity usually gives way to a fairly constant, but weak ALPHA rhythm due to a state of relaxed inward attention. When eyes are open, the ALPHA rhythm immediately dissolves into BETA activity; this is due to the reinstatement of complicated outwardly directed attention.

The THETA (3.5 to 7.5 HZ) level is associated with an access to unconscious material, drowsiness, fantasy, imagery, dreaming recall, problem solving, inspiration, and creativity. Advanced students of Yoga, Zen and other forms of medication or inner awareness appropriately display an ability to produce enhanced (high amplitude, low frequency) state ALPHA and THETA activity.

It is the ALPHA and THETA areas that are caused with the use of the Electro-Acuscope. In most cases, after 10 to 30 minutes of treatment, the patient will enter the THETA state. There are a great many benefits to anyone that uses the Electro-Acuscope for this purpose.

One 10 to 30 minute treatment with the instrument can replace many hours of rest. It is common for people to need much less rest per night. Even if you wanted to continue getting as much rest per night as before, patients report that the quality of rest improves.

In cases where the sleep cycle is completely disturbed such as transcontinental flight you can eliminate any jet lag effects with a short session on the Electro-Acuscope, either during flight or upon arrival.

People that work nights and sleep days or have to sleep in a noisy environment, find that they obtain a better quality of rest and do not suffer any detrimental effects because of the poor sleeping environment.

Executives, students or anyone that works in a high-stress environment obtain great results from the treatments. Many people find that

during the day when they feel stressed, they simply find a comfortable reclining chair or bed and take a 10 to 30 minute Electro-Sleep break if they took a long nap.

Some of the other areas that Electro-Sleep is routinely used are as follows:

- hyperactive children
- depression/manic depression
- improve concentration
- insomnia
- schizophrenia
- stimulation of the immune system

These are just a few benefits. Many people use Electro-Sleep anytime they feel any sickness of any kind. It seems to create a very healing state.

The Electro-Acuscope also is very effective to use for treatment of pain in the body. There are two treatment probes available or two brass treatment placement pads available. You simply place these probes on the pain area on the body and the pain goes away in a few minutes.

The Electro-Acuscope has been reported to be effective on a wide variety of muscular and skeletal pains. These treatments are not just pain blockage, they actually provide a cumulative result. It may require several treatments in some cases, but they are generally accumulative. You get better after each treatment until fully recovered.

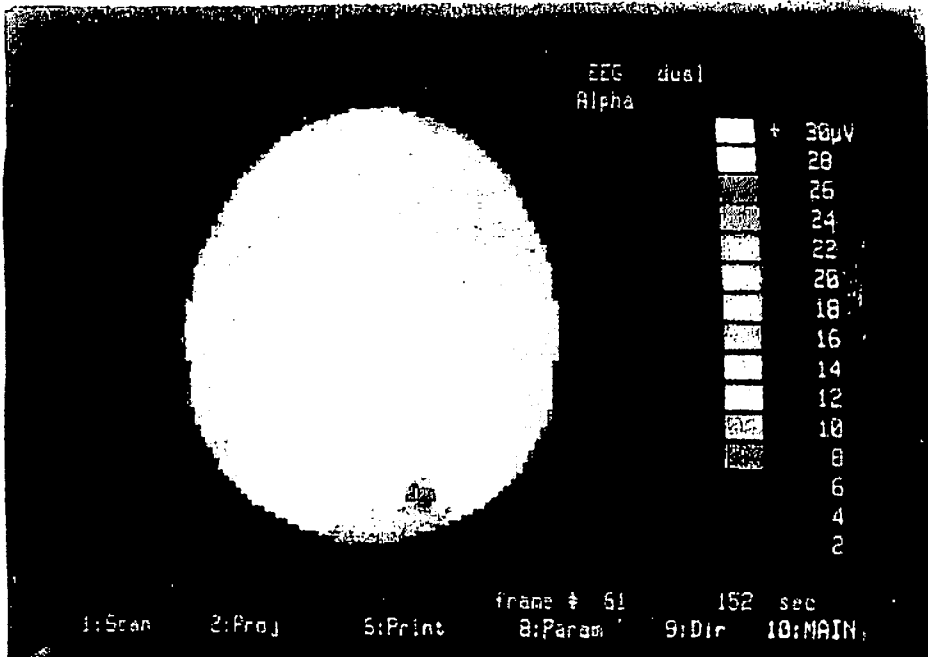
There are not any potentially harmful side effects from the use of the Electro-Acuscope. By learning how to use better techniques, you will achieve better results. You cannot be harmed from improper use.

Rest is the Master of Energy
Any time you can receive a much higher quality of rest, your body will always have much higher quality of energy.

PATIENT CONNECTED TO THE NUERO-
SCIENCE BRAIN IMAGER AND EAR
CLIPS ARE ATTACHED TO THE
ELECTRO ACUSCOPE WHICH IS
NOT PICTURED IN THIS PHOTO

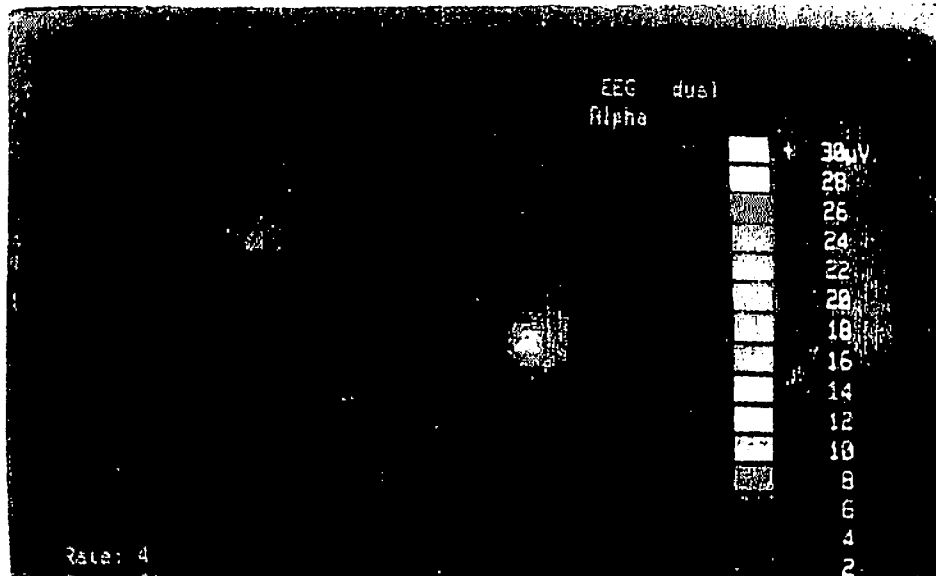


BRAIN MAP OF A NORMAL RESTING
AWAKE PATIENT BEFORE BEING
STIMULATED BY THE ELECTRO
ACUSCOPE.



THE FOLLOWING PHOTO REFLECTS
THE EFFECTS ON THE BRAIN AFTER
BEING STIMULATED WITH A PRO-
CEDURE KNOWN AS ELECTRO-SLEEP.

THE ELECTRO SLEEP PROCEDURE
WAS DONE USING THE ELECTRO
ACUSCOPE WHICH WAS SET AT
8.0



BRAIN MAP OF THE ABOVE PATIENT
IMMEDIATELY AFTER 10MINUTES
OF ELECTRO SLEEP USING THE
ELECTRO ACUSCOPE SET AT 8.0
HERTZ

THERE HAD BEEN NO CHANGES IN
THE ENVIRONMENT OR IN THE
PERCEPTION OF THE PATIENT

THE PATIENT WAS AWAKE AND
ALERT AND WAS NOT TOLD WHAT TO
EXPECT OR THAT THERE EVEN
WOULD BE A TREATMENT

PATIENT REPORTED FEELING VERY
RELAXED AT THE END OF THE
TREATMENT