



The Popularity of Early Electrotherapeutic Hokum



By Kent Perryman, PhD

The author is a member of the SSVMS Historical Committee. All the images in this article are of items in the Sierra Sacramento Valley Museum of Medical History.

BETWEEN 1880 AND 1930 the United States witnessed a flurry of electric energy-enhancement and transfer strategies to promote health care. America was transitioning to electric power for lighting, heating, and industry. Electricity became viewed as an agent of health as well as a source of energy. Regular licensed physicians and quacks were using electric energy cures during the late 19th and early 20th centuries to treat a variety of maladies.

The public was mesmerized by the variety of electrical devices being promoted to treat ailments from consumption to rheumatism, melancholia and dementia. However, with the help of the American Medical Association and the passage of legislation by congress in 1938 regulating the sale of quack electrical devices employed in bogus electrotherapy treatments, the electric energy absorption health care theories were finally laid to rest.

Rationale for Electrotherapeutics

Energy absorption theories in health care sprang from a Victorian mindset that the human body possesses limited quantities of energy made available to perform daily tasks and bodily functions. With the advent of the industrial revolution in America, individuals in many urban regions were coping with time constraints, increased transportation stresses and more technical labor demands. White-collar fatigue among clerical and administrative staff was also reported to reach epidemic proportions during this period. A prevalent diagnosis by 1900 in more urban regions of the US was "nervous exhaustion." The demands from life during this industrial growth were purported to exhaust the human energy supply. The body had to move faster and the mind had to process increased amounts of information.

An American born physician, George M. Beard (1839-1883), coined the term "neurasthenia." According to Beard, it was characterized by sleeplessness, anxiety, weariness and despondency. The onset of these maladies was signaled by a general weakness and lethargy. Neurasthenia could also be expressed as headaches, back pain, and muscular and joint discomfort. Beard attributed this condition to depletion in "nerve force" which the body (including the mind) possessed in limited quantities. This deficiency was brought on by excessive thought and physical activity associated with the demands being placed on individuals' life styles by the industrial expansion in America's urban areas.

Beard's approach to reversing this condition was to restore the body and mind's energy forces; the body and mind needed time to recover from this physical breakdown. Beard modeled the neurasthenia condition to the physics concept of entropy, where there is a disorder of available energy in a system. His cure was to prescribe treatments with faradic currents (current supplied from intermittent, pulsating induction coils and a battery power source). The patient's depleted energy reserves could also be replenished by inducing energy from static generators (rubbing objects together), and galvanic, direct current

sources (Leyden jars and primitive batteries).

Prior to the advent of Beard's neurasthenia, physicians had introduced electrical cures for a variety of illnesses. Charles Poyen popularized mesmerism in the 1830s. Many therapists of mesmerism employed both magnetic and electric analogies to describe the body's physiology to their patients. A. Paige, a practicing physician in Boston in the 1840s, employed electrical currents from a Leyden jar to treat "brain fever," a form of dementia. A positive lead was attached to the patient's head and the negative lead to another region of the body in the belief that an affliction would be carried away by restoring the brain's electrical balance. E. J. Fraser, another medical school graduate, also promoted the theory in 1863 that there were vital electrical forces in the body, which could be altered for the benefit of health care by an infusion of electrical energy.



The main reason so many individuals bought into these early theories of energy absorption and Beard's neurasthenia was the electrification of America. The industrial revolution was fueled in part by the distribution of electrical energy and its effect on life styles. America was fascinated with electricity beyond the boundaries of lighting, or heating.

Beard's theory of neurasthenia played into the public's preconceptions. Numerous devices were marketed and sold to the medical profession and to the public with the implied promise that they could infuse the body with energy and drive out disease. The Sierra Sacramento Valley Medical Society's Museum of Medical History has a variety of these devices in its collection.

Electrotherapeutic Devices

The majority of people purchased these devices through the mail from circulars, magazines and newspapers, or from door-to-door sales people and medicine shows. Catalogue sales firms such as Sears and Roebuck and Montgomery Ward advertised these devices.



Dr. Jerome H. Kidder manufactured some of the first mass marketed devices for physicians in the 1880s. These were usually portable enough for the doctor to carry on house calls. Kidder's devices were housed in beautiful hardwood cases with brass contact switches. Galvanic energy (direct current from battery storage device) was employed to elicit muscle contractions, much like frog legs in high school biology classes.

The early electrotherapeutic devices were proclaimed to stimulate digestion and evacuation as well as to reduce ulcers and tumors. The choice of polarity for the area of treatment depended on the physician's desired effect. A positive current promoted desirable outcome while negative currents reduced undesirable symptoms at the affected area.

Faradic or irregular alternating currents (AC)

produced through the secondary winding of an induction coil or a magneto. Physicians soon discovered AC devices provided more powerful voltages and could be used as a "nerve tonic" or general stimulant. Beyond the placebo effect, electrotherapy at this time did have some beneficial medical merits in temporarily relieving pain and partial paralysis. The major persisting contribution that electrical therapy made to medicine was stopping blood flow during surgery by cautery.

In 1888, Professor W. R. Wells made electrotherapeutic devices that had been formerly in the hands of physicians available to the general public. His device was basically a sulfuric acid battery with specialized electrodes for treating eyes, throat, ears and rectum. The battery manufacturer provided all the instructions for health use.

D. C. Moorland had made an earlier version of this health battery available in limited quantities in 1847. Moorland's Graduated Magnetic Machine came with two metal handles that were either grasped or applied to the body for 10-minute intervals to replenish diminished energies associated with physical and mental illness. Moorland possessed neither a medical degree nor knowledge of electricity, yet his device continued to sell for 20 more years. Some of these electrotherapeutic devices were marketed towards gender-specific treatments. J. L. Pulvermacher first targeted electric belts in 1875 to increase male virility. Pulvermacher's belts had to be first soaked in vinegar for 10 minutes in order to conduct electricity from a battery source.

Later, at the turn of the century, Thomas Edison's son, Tom, sold belts constructed of wires covered in cloth and connected to charged discs. The belts created a tingling sensation where they came into contact with the skin. The most successfully marketed version of electric belts appeared later in 1925. Coined the "horse collar" because it was worn over the shoulders; Henry Gaylord Wilshire's I-ON-A-CO belt consisted of an insulated wire 18 inches in diameter covered in leather. The device was plugged into a lamp socket for 10 minutes of treatment. Three thousand of these belts sold the first year they were on the market for \$60 a piece. Wilshire not only sold his belts but set up storefront treatment centers in Pasadena, Seattle and Portland. He also arranged easy payment options and gave public lectures. Thanks to AMA prosecutor Author Cramp and the U. S. Postal Service, electric belts eventually disappeared.

The Violet Ray device was also introduced for women to delay the aging processes. The Violet Ray was also proclaimed to treat insomnia, headaches, nervousness, sallow complexion, weak lungs, hoarse voices, dandruff, gray hair and premature baldness. Needless to say, it was very popular with hair salons. The Violet Ray was essentially a hand-held Tesla coil (a high voltage, low current device) that would ionize inert gases sealed in a variety of glass wand shapes.

There were wands shaped like combs and probes to treat various regions of the female body. A simple spark-gap effect, ozone odor, and buzzing sound was elicited as the wand came within an inch of the body. The only effect these devices ever had on an individual was a slight shock and tingling sensation. There were never any medical benefits demonstrated from the use of the Violet Ray or electric belts.

Eventually, the 1938 Federal Food, Drug and Cosmetic Act was instrumental in diminishing the sale of these and other electrotherapeutic nostrums as well as laying to rest the health benefits of energy absorption. There were many more electric devices



Magenta Electric Machine

and electric procedures employed for health benefits, such as electric baths, electric brushes, electric combs, electrostatic generators and electropoise, which can be viewed in a medical museum. However, there is still a market today for electrotherapeutic treatments as witnessed on the Internet for "The Brain Tuner".

kperryman@suddenlink.net

Major Sources:

De La Pena, Carolyn T. The Body Electric. New York University Press, 2003.
McCoy, Bob. Tales of Medical Fraud. Santa Monica Press, 2000.

Sierra Sacramento Valley Medical Society
5380 Elvas Avenue #100 • Sacramento, CA 95819
916.452.2671 PH • 916.452.2690 FX • Email: info@ssvms.org

Copyright © 2000-2008 Sierra Sacramento Valley Medical Society - All Right's Reserved