

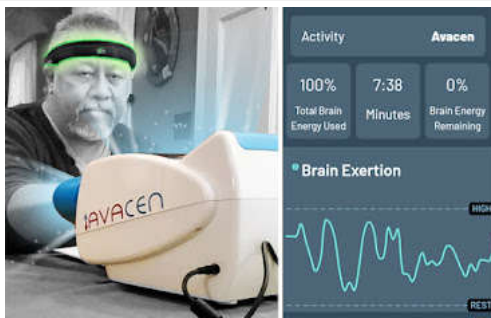
HealthTech Reporter* is the tech review e-magazine of the Integrative Pain Healers Alliance produced to showcase the performance or intended benefits of health and medical devices based on direct test drives/demos or actual user reporting and interviews.

Friday, January 13, 2023

Deconstructing AVACEN®: Microcirculation Therapy

MedTech Test Drive: Using Brain Wave EEG Readings while Using Microcirculation Therapy Device

Review of the effect of the AVACEN® Medical (HOME Model) on BRAIN WAVES -
By: Lennard M. Gettz, Ed.D



12/28/2023 Having learned about the AVACEN® HOME's potential to tackle headaches and migraines, this special test employs the use of a wearable EEG (called the Neurovine) to try and capture a graphic report of brain waves under treatment.

As stated in an NIH review, most headaches begin throughout the many nerves of the muscles and blood vessels that surround your head, neck, and face. These pain-sensing nerves can be set off by stress, muscle tension (or tightness), enlarged blood vessels, and other triggers [1].

The Neurovine EEG (sensory band) was designed to track and monitor brain exertion as part of its target function of cognitive pacing. Brain exertion has been linked to a variety of conditions, from ANXIETY/STRESS and primary exertional headaches are reported to be caused by intense physical exertion, poor circulation, high blood pressure or inflammation. Under a seven variable-session study, I found this to be a great opportunity to review brain waves and the parasympathetic response. The graph (above) showed the first 7:38 minutes under the treatment to show a rather unique wave pattern to the EEG lines. Unlike other activities that showed more abrupt and sharper readings, the Avacen experience shows slow, rounded peaks and slower changes. I find this unusual because of the gradual slowness of the pulse waves rising and descending. This is indicative of the theorized philosophy of how such devices (including Pulse Electromagnetic Stimulation, Biofeedback etc) behave. Another theory my clinical team and I have is that the wave PATTERNS (behavior of my brain exertion) appear to have an even pace of up-to-down- pursuing a pattern that aligns with an eventual reduction in elevation- thus as time goes on, the highs and lows become reduced and the wave line settles toward the midpoint. As this reading is only the beginning (1st day with Avacen device), more continued studies with this device through NV will continue as well as other therapeutic technologies that may offer such biometric readings.



STUDY 2: HEADACHES, MIGRAINES and SLEEP ISSUES (EEG study- review of Brain waves improved)

L-Image: A recent study was conducted (1/12-15, 2023) with a female subject who underwent knee replacement surgery in March, 2022. The subject is also a chronic sufferer of sleep apnea, acute knee pain from the surgical recovery and stated having intermittent migraines. In addition, she contracted Covid-19 infection early 2023 and claimed to have intermittent brain fog and imbalance. We applied the AVACEN® HOME and again, implemented the Neurovine EEG to track her brain waves. The results were surprisingly visible in as far as brain exertion; from the graphic EEG report, we see a significant drip in brain exertion almost to the base line of RELAXED state. From this, one may translate to this as a significant reduction in stress (or "brain racing") and possible anxiety.

After 3-4 applications of the AVACEN® HOME's, the subject was elated to express the following:

- reduction in brain fog and head pressure by as much as 80%
- balance mostly restored, was able to climb up and down the stairs without the fear of falling
- where her eyes once felt low and "droopy" due to fatigue or malaise, after the treatment, she felt "wide awake" and more energized.

Further exposure to the Avacen device will be conducted and additional behavioral and physiological observations will continue. (TBD)

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RECOGNIZING THE SCIENCE OF THERMOREGULATION & REVERSE PRESSURE

Written by: Josh Schueller PT

In our continued search for non-invasive therapeutic engineering, our tech reporters have met with a unique device with claims of bringing a whole body physical wellness through microcirculation by inducing calculated reverse pressure and heat therapy through the hand.

The hand (specifically the palm area) has long been believed to hold the key to your health and well-being. Eastern medicine specialists have studied the palm as a central source of identifying the state of one's heart and health. The color of the palm can reveal your general health by reflecting blood circulation. Normal healthy color is light pink and white can indicate poor circulation or poor health (1). In Tai Chi the position of the palm is essential in the expression of energy (Yang Phase) (2). The acupressure point in the palm deals with fear, sadness, worry, frustration, and anxiety (3).

To better understand the palm is part of our understanding the uniqueness of our anatomy. The palm of the hand is critical in the thermoregulation of the body. The structure of blood flow in the palm (arteriovenous anastomoses- AVA) allows for warming and thinning of the body as it returns to the heart and is distributed throughout the body.

AVACEN (**A**dvanced **V**ascular **C**irculation **E**nhancement) has developed FDA clearance as a non-invasive, drug-free heat therapy system that is indicated to assist in:

- 1) temporary relief of minor muscle pain, joint pain, and stiffness
- 2) temporary relief of joint pain associated with arthritis, muscle spasms, and minor strains and sprains
- 3) muscular relaxation
- 4) temporary increase of local circulation (4)

According to its design reports, the key components to AVACEN device is improving the microcirculation via the palm of the hand. By introducing negative pressure and heat to the palm of your hand this will increase the temperature of the blood. This will decrease blood volume and increases microcirculation. This increased microcirculation improved oxygen and nutrition to the skeletal muscles while carrying away waste (carbon dioxide). The intended result is more relaxed muscles throughout the body.

In regards to addressing pain, we observe the design theory behind the AVACEN is as follows; when inflammation in that area blocks healthy blood flow, the device works on targeting improved transportation of the blood (for added efficiency) to that area which could possibly improve medication delivery. In my clinical experience, not everyone responds with the same success to traditional treatments (therapy, medication, injections etc). The current market trend suggest the need for increased non-invasive, non-pharmacological, safe, and effective treatment options. When the opportunity to use the AVACEN became available, I immediately volunteered.

FIRST-IMPRESSION REVIEW

The machine is small, about the length of your elbow to hand. I first put my hand in a specially designed patented glove to help ensure negative pressure. Make sure you take off all of your jewelry prior. The AVACEN machine has many different prompts to assist you in the sessions. Following the prompts is essential to success. Once putting your hand in the machine keep your hand straight from elbow down and put your hand resting on the dry heat pad inside machine. Pressing start the cuff begins to seal. The device will then calibrate the weight and size of your hand in ensure the appropriate treatment for you. The treatment will begin and I just relaxed for the 15-20 minutes with a slight warming feeling on the palm of my hand. The device is simple and user friendly with clear instructions. There is three temperature levels to choose from (low, medium, and high). Treatments range from 15-20 minutes with recommendations of twice per day.

TBC



COMPARISON TESTING AND MULTIMODALITY 'STACKING'

This is an excerpt from the report "Using Multi-Modality Therapeutics"- By: Patrick Ziemer (Magnawave PEMF). As a promoter of neuromagnetic therapeutic devices, Mr. Ziemer holds a unique comparative position as a technology analyst of non-invasive therapeutics with access to test driving other modalities.

"When I was first introduced to the AVACEN® HOME, I found their strategic use of heat induction to offer a relaxing sensation within moments of inserting your hand in the device... I could sense it working by actually radiating throughout the body (I'm acutely sensitive to this). I also felt a form of euphoria that I can only attribute to an acceleration in blood movement (velocity) throughout my body- something I am also familiar with from other modalities."



STACKING COMPLEMENTARY INNOVATIONS

The idea of targeting musculoskeletal or neurological performance using heat and pressure is not a new one; this AVACEN technology appeared to have found the right blend of two or more interventional functions to work together and automate it under one protocol. They have the same spirit of uniting applications or "STACKING" as I do, especially whenever we try to join one of my PEMF devices for a multimodality treatment at [my medispas](#)* with other non-invasive therapeutic technologies that we feature. By identifying the compatible 'active ingredient' from each device, I find there



Though not directly promoted for multimodality applications, many professionals are exploring the integration of compatible therapy devices. Some are found to complement and even enhance the common wellness objectives including neurostimulation and microcirculation.

to be a lot of room for expanding the healing directive and explore taking it further. In the case of Avacen, adding the pulsation of another complementary technology like the PEMF offers a new movement- both working on that cellular level via a shift in the blood flow through the body, meanwhile working in concert as the PEMF may zero in on a specific body area simultaneously. You get (kind of) a scrubbing effect to help clear the plaque in the bloodstream or in the vessels. It's like having the perfect sprinkler system for what you're trying to nourish."

I believe that working with the AVACEN device reminds me of reflexology (the application of pressure to areas on the feet or the hands). I'm all for the improvement of our body's circulation-- I see that there's a lot of wellness and healing that comes from this. It's so easy to use and

the designers really took away all the guesswork by simplifying the 15-20 minute operation. Having studied the body's reaction to the AVACEN, this device actually turns up the velocity of the blood throughout the body- and that's where the biometric optimizing comes in.

source: <https://vyfyky.com/>

(continuation)

The AVACEN device is identified as a medical device- incorporating a single entry point treatment technique that by all standards shows to be safe and non-invasive. The concept of raising the temperature of your extremity, you are receiving a form of biometric RE-SET, telling your body to fully auto-adjust. I recognize this temperature intervention therapy in other modalities including cryotherapy, infrared sauna, cold laser and a vast array of other innovations.

Observing our testers' experiences, we find a consistent line of reports about systemic benefits either on specific issues or throughout the body to as far as addressing pain, tension relief and the induction of relaxation. One last aspect that AVACEN has is the AVACEN CSS which is a program for practitioners to address cardiovascular and stress issues. By measuring heart rate variability and accelerated plethysmography to analyze overall CV and Autonomic System function the clinician is able to track improvements objectively to correspond with subjective measurements.

Key questions:

1. How long does the "warmed blood" circulate through the body?
2. What is the temperature increase in the blood?
3. Temporary relief from pain— does that mean you have to use AVACEN regularly ?
4. Could AVACEN be helpful in the treatment of migraines and fibromyalgia?

In a world searching for innovative, safe, and effective pain and wellness solutions, AVACEN offers a very unique concept. Many new technologies for pain treatments goal is increase blood flow, more efficient blood flow, and decreased inflammation. AVACEN is no different. The difference with AVACEN is the concept of using the palm of your hand as the delivery mechanism. Pain suffers (especially migraine sufferers) are desperate for treatment options as the current, traditional methods are expensive and inefficient. A person's health and wellness is as unique from person to person as your fingerprint or a snowflake. Individualized treatment options that best fit the person's need is essential for success. AVACEN provides an inexpensive option to many people searching for answer to their health and wellness.

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