



## Brain Machines

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**You may have heard about the Mozart Effect. But how about Synchroenergizer Salons, the Alphapacer, or Ganzfeld Effect devices?**

MY PREVIOUS ARTICLE DESCRIBED some of more interesting antique quack medical devices I have encountered. For the most part, these are high frequency, low current electromagnetic shock boxes. They put on a great show but failed to deliver the promised goods, and were banned by the FDA in the early 1950s.

Even so, many people still believe that electromagnetic imbalance is a leading cause of disease and illness.

Such persistent, deep-seated beliefs arise out of mankind's endless quest for the miracle cure, the desire to get something for nothing. This also explains the great stability found in the birthrate of suckers (about one per minute). A recent case in point is the Mozart Effect.

The Mozart Effect arises from a 1993 article in the prestigious publication, Nature. The article described controlled experiments showing increased IQ scores in students who had listened to Mozart's Sonata for Two Pianos, K 448.

The story hit the mass media and the sonata has been flying off the shelves ever since. It was of little or no consequence that the benefits lasted less than 10 minutes and that the same effect has been shown to occur with any pleasurable activity done prior to testing.

Interestingly enough, nearly every antique quack medical device I have come across was designed to work primarily on the body. I cannot think of a single example of one intended exclusively for the mother lode of electro-chemical processes, the human brain. Who would not want to increase their intelligence or memory with only a few treatments per week?

Not to worry. What was lacking in the past has been more than offset by a surfeit of modern digital devices. My first encounter with one was an advertisement for a Synchroenergizer Mind Salon in Marin. I was so intrigued I picked up the phone to get the specifics. They challenged me to come in and try it myself before I reached any conclusions.

Being as open-minded as the next physician, I got into my car and sped to Marin, thinking I was the Amazing Randy (no relation) on a mission to debunk with extreme prejudice. I introduced myself, signed the hold harmless card should I have a seizure, and paid the 25 bucks.

A free-spirited woman then led me into a darkened room with a dozen or so recliners neatly arranged in rows. Next to each were headphones and what looked like welder's goggles.

She instructed me to go to the recliner I felt most comfortable with and to put the goggles on first. I noted they contained symmetrical arrays of green and red LED lights embedded in the lenses. Her voice came over the headphones instructing me to lie back and wait for the session to begin with my eyes closed.

I was a little nervous and had no idea what to expect. I took a deep breath and exhaled as I closed my eyes. I was suddenly slammed by barrages of bright flashing lights which quickly fused into amazingly complex geometric patterns. My ears filled with eerie crisscrossing clicks and sounds reminiscent of the soundtrack to *The Forbidden Planet*.

Suddenly I took off and was flying (I mean really flying) through the air and in and out of a swirling fractal vortex. Despite being caught up in my own personal 2001 *Space Odyssey*, my analytical detachment remained intact. It occurred to me that the staff had crept into the room and were at the very moment standing over me with fans and colored strobes giving me a lesson I would not soon forget.

I opened my eyes fully expecting to catch them red-handed. The room was empty.

I shut my eyes. Wow. I let the machine take over. I felt like one of those Loony Toons characters with the handkerchief being pulled in and out through the ears.

The drive home was amazingly beautiful that afternoon. I cannot claim that I was any smarter but I was certainly a lot wiser.

The "science" behind these devices is predicated upon EEG recordings. The brain normally operates like a cacophonous symphony of simultaneous rhythms with the hemispheres shifting dominance from side to side. This radically changes when the brain enters deep meditative states such as those achieved by the Zen masters. The hemispheres become synchronous and the brain resonates at a single (alpha) frequency.

The machines claim to offer a safe method of inducing these same states with all of the attendant benefits: enhanced creativity, increased neurotransmitters, and a blissful sense of well-being. In other words, they claim to offer the same results that would otherwise take a lifetime to achieve through meditation, yoga, or other disciplines, in just a few half-hour sessions.

Mind machines are digital light and sound devices that work with pulsed light and sounds delivered at variable rates, colors, and sonic frequencies in various combinations to the eyes and ears.

These light and sound patterns induce what is known as the frequency following effect, which results in the entrainment of the brain waves to the "tuned" frequency.

The fact that most brain wave frequencies lie far below the 20 Hz. threshold of the human ear is overcome by taking advantage of the "binaural beat frequency."

Theoretically, the brain is able to discriminate small differences in frequencies presented to each ear. For example, when one ear receives 400 Hz and the other 410, the brain is entrained to the "beat frequency" difference of 10 Hz. Some machines claim to use binaural magnetic fields, however, this boils down to the tiny fields produced by the electromagnets in the headphones.

The pulsed light first passes through the eyelids, creating additional patterns and images. The overall effect induces a hypnogogic state in which the subject may report lucid dreams. Many machines allow the user to play pre-recorded material in the background of the pulsed sounds. A whole separate industry is dedicated to this facet, ranging from self-esteem to language acquisition. Mind machine brochures coyly dance around overt claims of enhanced learning and improved memory.

Many of the machines have preprogrammed sessions lasting between 15-60 minutes and ramp the subject through several levels designed for meditation, relaxation, learning, healing, and alertness. Some also have special tunings such as the Schumann frequency (7.51 Hz), which is the natural resonant frequency of Earth.

Other machines use transcranial electrical stimulation (CES) alone or in combination with light and sound. One such combination machine is the Alphapacer which has electrodes that clip onto the earlobes. Because these devices are essentially TENS units, a doctor's prescription is required to obtain one.

Another device takes advantage of the Ganzfeld Effect, in which the subject stares into blank white-illuminated screens in the eyeglasses. This effect is similar to a deprivation chamber: the mind soon generates its own sensory input to fill the sensory vacuum. Ganzfeld devices are most noted for their use by the CIA in a notorious remote viewing program.

Unfortunately, like anything else that sounds too good to be true, most of these devices could not deliver what they promised and have been banned. False claims have ranged from weight loss to instant language acquisition.

They are an entertaining way to relax, but are probably no better than taking a nap - or listening to Mozart.

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