

**Investigative Study of Long Term Effects of Life Wave® Patches
Using Electro Meridian Analysis System® (EMAS)***

E. Reenah McGill, D.O.M., M.A., L.Ac.

Doctor of Oriental Medicine

Presented at Life Wave® Convention

Las Vegas, NV

10 September 2005

Participants acting as their own controls were randomly assigned to the Life Wave® active patches for three weeks or the placebo patches for three weeks, 1 week without any patches, active or placebo, and then three weeks with the opposite type of patches – active to placebo or placebo to active. Patch placement was white, active on the right at San Jiao 5 and tan, receptive on the left at Kidney 4. Each participant maintained a daily energy log. Once a week their Meridian energy was measured using Electro Meridian Analysis System® (EMAS). A technician who was experienced with the EMAS, but no knowledge regarding assignment of active or placebo patch use completed this EMAS measurement. EMAS was compared with perceived energy. Participants reported an increase of energy corresponding to that shown by the EMAS measurements and self-report logs. Reported and recorded energy increases ranged from 18% to 50%. No adverse effects were reported. Study results indicated a substantial and sustained increase in perceived energy during the three weeks participants were using the active Life Wave® Patches. Further study of optimal patch placement based on meridian energy information generated by the EMAS is recommended.

OBJECTIVE

This study was designed to investigate and test the ability of Life Wave™ patches to change or balance the energy in the meridians, channels of energy, sufficiently and to measure that change with the electro meridian analysis system (EMAS®).

METHOD

The Life Wave™ manufacturer postulated that the patch passively modulates the oscillating low energy magnetic field that exists just above the surface of the human epidermal layer. This passive frequency modulation creates a condition in which the transport of long chain fatty acids across the mitochondria membrane for subsequent beta-oxidation and energy production is triggered or improved, thereby providing the user with increased energy via an increase in ATP production. Of concern in this discussion is the use of fatty acids as a metabolic reactant in the mitochondria of the cell. In a process known as beta-oxidation the fatty acids are converted into 2-carbon units of acetyl-Co-A. A single fatty acid molecule containing 16 carbon atoms will yield 8 molecules of acetyl-Co-A. As each acetyl-Co-A molecule enters the Krebs cycle it is metabolized to release its energy. The ultimate formation of ATP after beta-oxidation and the Krebs Cycle is the same as described above. (1) Life Wave™ patches are of a unique nature. It is postulated that they are not transdermal, they do not put any substances into the body but instead create specific biosignals that modulate the body's natural magnetic field in order to enhance certain specific biological reactions that are already naturally taking place. The patches purport to stimulate the body with electric or magnetic fields, a well-accepted practice in medicine. These frequencies can be generated and applied to the body with electronic devices external to the body. This is called electric stimulation or magnetic stimulation. Life Wave™ patch technology also uses bioelectric stimulation that is due to the production of specific electrical frequencies by the body's natural magnetic field from materials present in the patches. Instead of putting a substance into the body the patch technology couples the frequency signature of the substance into the body (2) in other words the patches influence chemical reactions in the body without placing chemicals into the body. The body uses specific molecular composition and chemical action that corresponds to specific combinations of frequency signals or codes. The patches are composed of water, Oxygen and organic compounds of a proprietary blend.

The Electro Meridian Analysis System (EMAS®) was chosen as an instrument to measure actual changes in meridian energy because of its 50+ years of use and development by Dr. Yosio Nakatani and others. (3) When initially investigating the phenomena of electroconductibility in the channels he found it to be higher when there was disease related to that channel. For example if there was kidney disease the skin resistance on the Kidney Channel was higher. This same pattern prevailed in the other 11 channels when there was a disease of the organ related to that channel. He named this process Ryodoraku. Nakatani stated that this mechanism could be explained by the

viscero-skin-sympathetic nerve reflex. Impulses from the viscera radiate to the spinal cord; the reflex zones are then reflected into the skin surface via the efferent sympathetic nerves and appear as a longitudinal connecting system, the meridian lines. According to this theory abnormalities on each meridian can be observed objectively by the measurement of elector-conductivity of certain points on the skin. By stimulating these points homeostasis ensues and abnormalities are regulated. (4, 5) The importance of this will become apparent when considering the points chosen in this study. The continual development of this process was moved to the next generation when EMAS® found that it was possible through the use of computer programming to quickly compute the actual energy measurement (skin resistant/voltage) and display it as a bar graph and a specific numerical measure. It only required then a method to arrive at a constant measurement not influenced by pressure of the probe, nor the length of time the probe was placed on the point being measured. These last 2 complexities were overcome with the use of a constant pressure probe and high speed mathematical computations achieved by the computer.(6)

The acupuncture points chosen were known to, in combination, stimulate energy throughout the body. San Jiao 5 (SJ5) and Kidney 4 (K4) are both Luo connecting points, San Jiao 5 is an Arm Shao Yang Point and Kidney 4 a Leg Shao Yin Point so together they complete a circle of Yin and Yang. According to the Shanghai text SJ5 frees the channels, quickens the connecting vessels and K4 supplements the energy and spirit. The Luo Connecting Points are known as points that influence the treatment of things such as *Qi* (energy), *Blood* (substance), tendons and muscles. One of the chief tenets of Oriental Medicine is that in order for health to predominate there must be a balance between *Yin and Yang*, arm and leg meridians and *Qi and Blood*. The use of these two points satisfied these tenets, and were easy to locate. (7,8)

The study was conducted over a period of seven weeks; the patches were applied for three weeks, no Life Wave® patches for one week followed by the second round of patches for three weeks. There was a week's rest to provide for a "wash out period" to mitigate against any residual effects which may or may not have occurred between the beginning of one round and the beginning of the second round of Life Wave® patch use.

The subjects were instructed on Life Wave® patch placement and were given a week's supply of Life Wave® patches on Monday of each week WHEN their daily logs were collected. After which the EMAS® was used to obtain their meridian energy measurements.

Life Wave® Patches were worn on Monday, Wednesday and Friday. Each person was measured on Monday prior to being given a new set of Life Wave® patches. To insure proper placement the subjects placed their new set of Life Wave® patches on the appropriate point while at the clinic, if there was any potential for misplacement it was corrected immediately and a small black dot using a black "Sharpie" was used to mark the correct position for later placement.

Each individual was required to keep a daily log of their perceived level of energy using a 0 – 10 scale, with 0 being no energy and 10 being the best energy they could imagine. They were also encouraged to keep a written record of any changes in daily activities.

The "Hawthorne Effect" was controlled for through 1. Each person was given the same amount of time and information for the testing, and 2. The same assistant always did the measuring and this assistant did not have knowledge of which type of patch, active or passive Life Wave® patches, was being used.

Seven participants completed the entire study and only their data results were used in reporting the effects of the Life Wave® patches and the results of the EMAS®. Five other participants did not complete the study, either because they could not/did not keep a Monday appointment or they did not maintain a daily log.

Each participant acted as their own control during the study, they were not told if they were receiving the active or passive Life Wave® patches although it should be noted that one participant dropped out because they thought they were not receiving the active Life Wave® patch when they began the second round of Life Wave® patches. They were randomly assigned to begin as either active or passive Life Wave® patch user and then for the second half of the study they rotated to the other group. This study did not use a control group.

DISCUSSION

Each participant was measured on the EMAS® twice on their first visit; once after explaining the procedures and the study requirements and then 30 minutes after placing the Life Wave® patches on the required point. The following table outlines the changes in energy as measured by the EMAS®. There was a decrease in those persons beginning with the passive patch and only an increase in one person who started with the active patches, one participant in the active group had a flare up of fibromyalgia on that day and their later measurements showed little change between active and passive patches, while the third person (3-A) showed a marked increase in measured energy over the course of three weeks when they were using the active patches (average energy increase was 38%).

Participant 5-P showed a marked change in measured energy over the entire study period. This participant had measurements of 94, 53,36 (a constant decline in measured energy) over the three weeks when passive patches were used and then a corresponding rebound in energy (38, 42, 80) when active patches were worn. This same individual reported being able to complete 2 games of golf, one was the usual, during the period they were wearing the active patches; additionally they also reported sleeping better and rising earlier in the morning, at 5 a.m. instead of 6 a.m. (See Table II, Average Changes in Body Energy and Exhibit A)

These outcome measurements support the earlier findings of researchers studying the patch effect on the same day on athletics when measured pre and post for such activities as weight lifting.

Participant 7-A had an unusually high increase in energy for which there is no known explanation other than the use of the Life Wave® patch. The results of the Life Wave® patches support the findings of others and the premise of the inventor, David Schmidt.

Table I

Average Changes in Body Energy at Initial Visit

(Participants were measured before using either the active or passive patch and then again after applying the patch)

Subject #	Pre Initial	Post Initial	% of Change	Remarks
1-A	83	95	13% Inc	
2-A	68	61	11% Dec	Pt with Fibromyalgia
3-A	82	45	82% Dec	
4-P	106	92	15% Dec	
5-P	94	69	90% Dec	
6-P	65	59	10% Dec	
7-A	23	45	187% Inc	

A= began with active phase
P= began with passive phase

Participants, using a self rating scale, would rate themselves at 4 or lower when wearing the passive patch and at 5 or above when wearing the active patch. There was a definite trend in perceived energy or lack thereof that corresponded to wearing of the patch. Those logged comments went from "worked around the house, not much accomplished" in the passive phase to "awoke early, after breakfast did several errands – we shopped and accomplished 4 or 5 thngs we had put off before, went for a short walk and worked in flower garden" during active phase."

The following, Table II, shows the average changes over the 7 weeks of the study along with the percentage of change measured

Table II**Average Changes in Body Energy for Complete Study**

Subject #	Passive Phase	Active Phase	% of Change	Remarks
1	49	64	22% increase	
2	82	87	3% decrease	
3	40	64	38% increase	
4	55	114	50% increase	
5	61*	53**	13% decrease	
6	59	58	Unchanged	
7	37	45	18%	
Average Increase	36	57	38%	
Average Decrease	72	70	3%	
* 94, 53, 36 Individual scores				
** 38, 42, 80 Individual scores				

CONCLUSIONS

The results of this preliminary study indicate that participants, using a self-rating scale, and the obtained EMAS® readings correlated to a significant degree with each other. There was a definite trend in perceived energy or lack thereof in direct relationship to using the active patch, energy increased, or the passive patch, energy decreased, and the readings that corresponded to wearing of the patch.

RECOMMENDATIONS

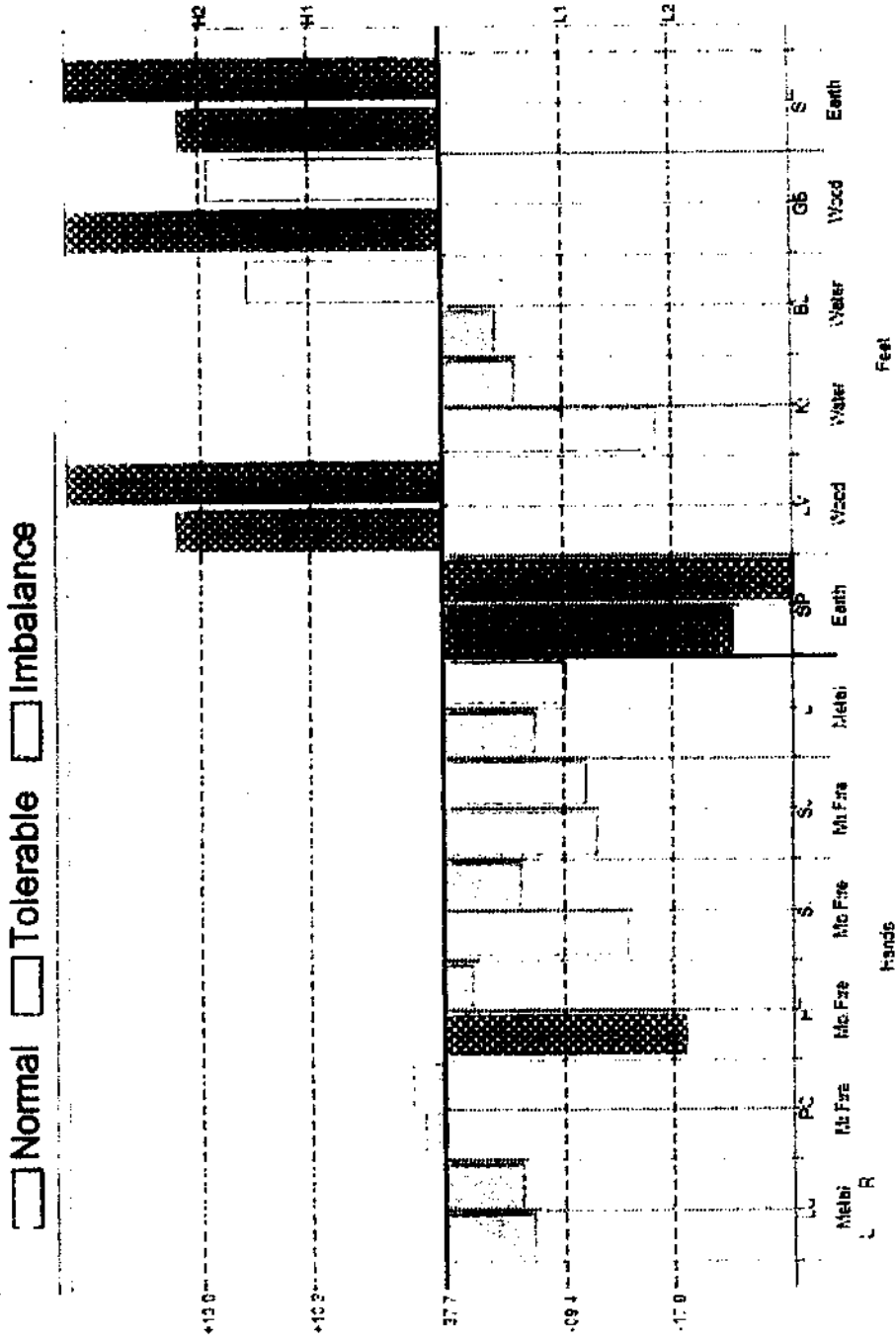
Further study with larger groups is recommended to support and expand these results. As this technology becomes more widely used and recognized validation is needed.

REFERENCES:

1. Schmidt, David, "A double blind placebo controlled study of Life Wave™ technology as it relates to the improvement of strength endurance in high performance college athletics", www.lifewave.com 8 Mar 2005.
2. Haltiwanger, Steven, MD, CCN, "A short synopsis of LifeWave™ Patches", www.lifewave.com/studies , 27 March 2005.
3. "Guide to Ryodoraku Therapy" www.osaka-med.ac.jp 16 August 2005.
4. Oda, Hiroshisa, Ryodoraku Textbook, Ryodoraku Autonomic Nervous System Therapy, 1989, Naniwasha Publishing Inc., Chuo-Ku-Osaka, 540, Japan.
5. "Primary Scientific Thesis for Ryodoraku Studies", www.members.aol.com/MedRyodoraku/Treatise 16 August 2005.
6. "EMAS 2005 Upgrade Policy", www.hepoch.com 28 March 2005
7. Xinnong, Cheng, Chief editor, Chinese Acupuncture and Moxibustion, 1987, Foreign Language Press, Beijing, China.
8. Shanghai Acupuncture Text, 1991, Ellis, Wiseman & Boss, London, England.

After Active Patches Applied

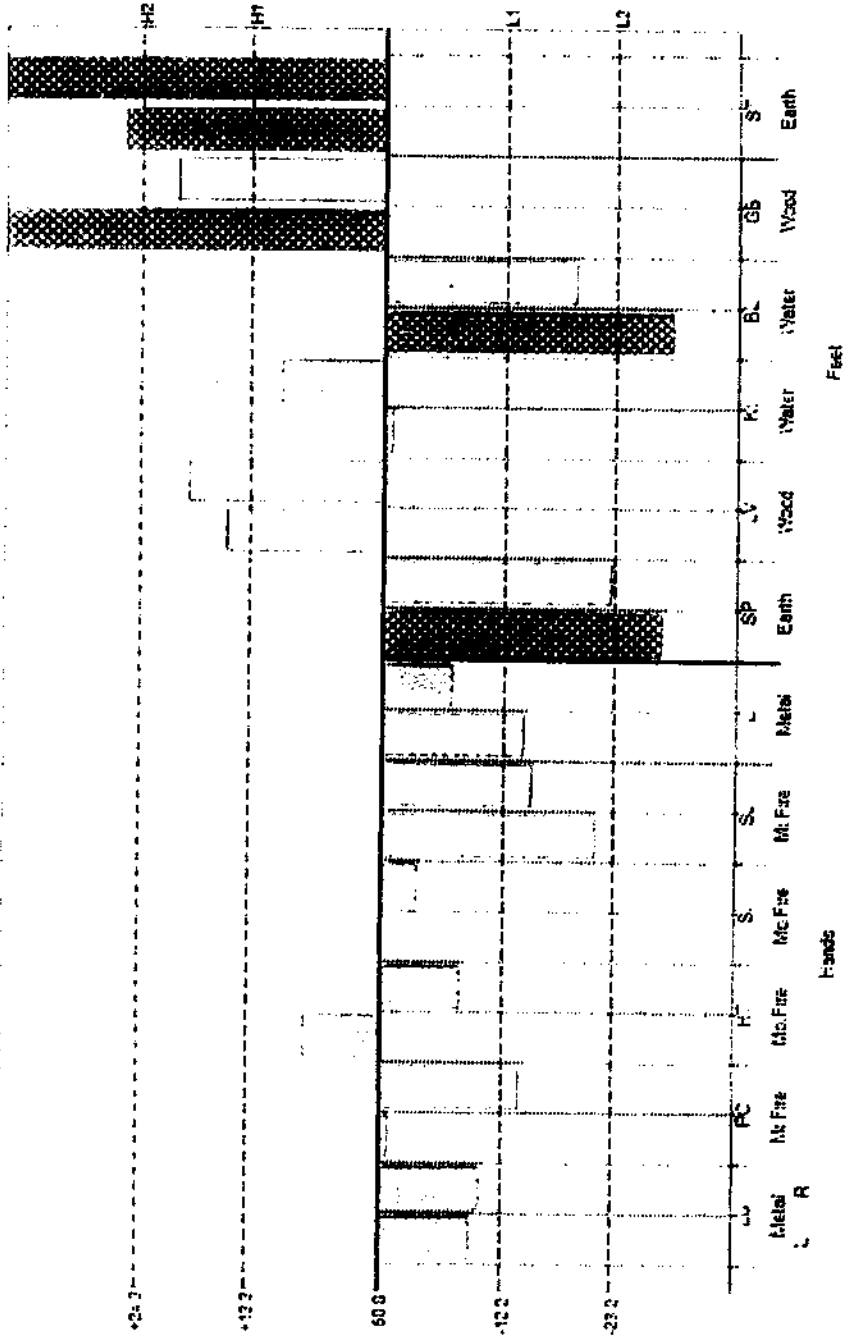
Exhibit A-1



After 2 Weeks Active Patches

Exhibit A-2

Normal
 Tolerable
 Imbalance



After Using Active Life Wave® Patches for 1 Month

