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## **LifeWave Energy Patches Infrared Study**

### **Abstract**

A study was performed on 36 random individuals using infrared imaging as a source of measuring any thermal changes that occurred by placing LifeWave energy enhancing patches on the body and measuring the results. These measurements were done on people ranging in age from 22 to 72 with indiscriminate health needs or concerns.

The objective was to first place the patches on the body and measure an immediate response at five minutes. The response to the body by placing the patches in a region of hyperthermic state as measured by the infrared imaging proved a cooling response to the skin temperature readings both locally and distal from the site of application. This is a valuable corollary when understanding the measured response of the patches is proof that the patches emit some form of energy to the body to cause a hyperthermic region to cool. This can only be explained by the patches emitting a form of energy that influenced the autonomic nervous system via the subcutaneous vascular beds.

### **Introduction:**

With the bulk of the American population aging, the complaints and complications of this physical process is creating a need for new technologies and products to decrease the maturing effects. The average American wants to continue to be active and robust as the aging process continues. The current attitude of aging has led to a number of health products to promote increased vitality, energy, mental focus, all with concept of improved quality of life. When the LifeWave Patches first were introduced to me it was clear there was something so different with the concept and application of the devices I was immediately interested in the trial of them. In the clinical setting I have used a low level laser device that produced an infrared energy that was very effective in changing the function of the nervous system.

### **Hypothesis:**

The Energy Enhancer patches create an immediate cooling response in skin temperature readings.

**Design:** The study was designed to collect data as to measurable thermal changes that occurred from the use of the LifeWave Energy patches.

### **Materials and Methods:**

**Objectives:** The purpose of the study was to assess the overall response and therapeutic value of the patches in normalizing thermal imbalances in the body. In this study infrared imaging was used as a measurement tool of physiological response. This study was done with interest and science as the motivation. I was not paid to perform the study nor were the participants in the study paid in any manner. The first group of patches for each participant was purchased by the examiner and was not supplied by the company.

**Subjects: Volunteers** (n=36) were chosen to participate in a study measuring the effects of the LifeWave non-transdermal energy patches. All subjects were chosen at random with varying health conditions. A broad age group both male and female was selected, ranging from 22 to 72 years of age. The study was designed to measure the effects of the energy patches for all different types of physical conditions and levels of health. The people were first surveyed to determine what specific interests and health needs they had in using the patches. Each subject read and signed an informed consent.

### **Data acquisition:**

The volunteers were first asked to fill out a survey and questionnaire that was designed to determine measurements that were most valuable in evaluating and measuring “energy” differences in the body. Several scales commonly called the Visual Analog Scale of 0-10 measurements were used including mental focus, overall energy and bowel function. Other questions on the forms addressed pain issues, such location of pain, the type of pain (stabbing, burning, aching) the severity of pain and the duration of pain.

Five minutes after the application of the patches, the infrared imaging measurements were performed again. Computerized thermal measurements were performed over the patch site before and after the five minute period and the thermal differences recorded.

### **Procedures:**

**Baseline Infrared Measurement:** First an Infrared Imaging baseline measurement was performed to determine thermal readings to evaluate normal versus abnormal regions of skin temperature. Patch placement was then determined based on the infrared measurements along with the patients’ personal health goals or needs.

**5 Minute Post-patch Infrared measurement:** A second set of post-patch measurements were taken five minutes after the patches were placed on the body. This measurement was performed to determine if an immediate response of thermal changes could be seen after five minutes

**Outcome measures:** A pre-patching survey was conducted to determine the effects of the patches on a number of physiological changes, including overall energy, mental clarity and bowel function. The respondents offered many other observations and changes that were not part of the formal measurements.

**EQUIPMENT:** Computerized Thermal Imaging Processing Camera "TIP" was used to measure the 8-12 nanometer range of infrared output of the human body. This is the most common range of infrared output by the body. The camera selected is the most detailed, focused and expensive on the current market. Computerized Thermal Imaging produces the Thermal Imaging Processor TIP system: Corporate Headquarters: 1719 W. 2800 S. Ogden, UT 84401 Phone: 801-776-4700 <sup>10</sup>

**Camera Specifications:** Real Time Imaging Technology: Up to 15 frames per second. Field of View: Up to 30° Horizontal and 20° vertical with continuous optical zoom. Resolution: 600 lines of spatial resolution with 30° field of view. 500 X 335 pixel image size. Sensitivity: Detects and measures temperature differences of .0125°C at 35°C. <sup>10</sup> It also has proprietary software to capture, store and record the measured Infrared output of the body and record the data in a digital format.

**Infrared Imaging Measurements** were performed with a highly sophisticated Computerized Thermal Imaging Infrared Camera. The use of infrared imaging is a unique, non-invasive diagnostic imaging procedure which detects and records surface skin temperatures by measuring the variations in heat that is spontaneously emitted from body surfaces. <sup>1</sup> This specific imaging accomplishes this by scanning the subject with a highly sensitive infrared camera that can measure thermal differences to a one-hundredth of a degree. The surface skin temperatures are affected by the individual's physiological responses. Specifically, the autonomic nervous system of the body controls the thermal response. The external skin temperature creates a "thermal map" that is an objective measure of normal as well as abnormal physiologic function. The infrared evaluation, as a diagnostic procedure in evaluating normal physiologic function, is an accurate and objective evaluation. <sup>7,8</sup> It is a pure measure of a persons' health without causing any harm to the patient which is required in this application. <sup>7</sup>

**Patient Instructions and Technique:** The patients were instructed to go through a normal thermal calibration period of at least ten minutes in a draft free, climate controlled room with the temperature set between 68-70 degrees. The

patient was instructed to either sit or stand with the part to be examined either lightly gowned or uncovered. Standard procedure is to remove all jewelry and other apparel such as bandages, watches, bracelets, rings and eyeglasses to prevent any artifact production in this procedure.<sup>9</sup>

After the calibration period, the patient is positioned exactly the same distance from the camera in each evaluation. The camera has built in software settings that were used in each session that focused and created the exact settings for each imaging session. This allowed for consistent results in temperature range, central temperature level, resolution and data capture to be standardized with each participant. This method is a very objective measure due to nothing induced into the skin or body, but merely a measurement from the emitted energy from the skin.<sup>8</sup> This technology with sophisticated digital software offers a great application for this study, to measure physiological changes and autonomic nerve changes.<sup>8,11</sup>

## **Results:**

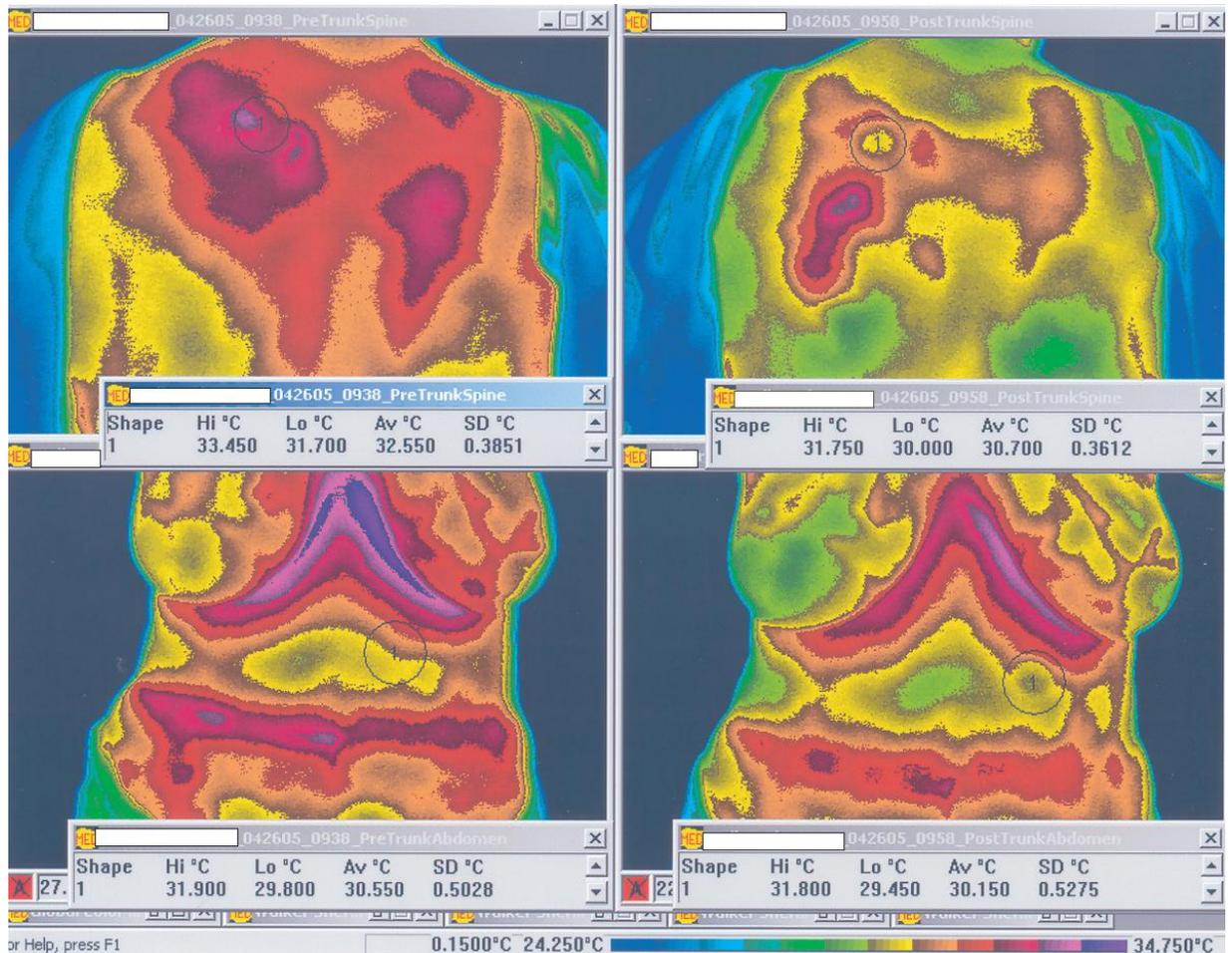
**Physiological Measurements:** The skin is arguably the largest organ of the body. It is composed of a network of vessels accompanied by nerve fibers. It is the thermoregulator of the body controlling blood flow within a few millimeters of the body surface. The system is controlled by the autonomic nervous system in general, but also has influence from the hypothalamus and brain in general.<sup>1</sup> The most crucial component as a functioning system is this regulatory system is both anatomically and physiologically symmetrical. Numerous studies offer that the left and right side of the body should not vary in temperature more than .6 degrees centigrade. This also applies to most areas of the body from high to low. For this reason, localized and regional, asymmetric temperature changes on the body surface have interested physicians as far back as Hippocrates when mud was applied to the body to measure the thermal differences over suspected abnormalities.<sup>1,2,7,8</sup>

**Evidence:** A study on 36 random individuals using infrared imaging as a source of measuring thermal changes that occurred by placing LifeWave Energy Enhancer patches on the body and measuring the results. The response to the body by placing the patches in a region of hyperthermic state as measured by the infrared imaging proved a cooling response to the skin temperature readings both locally and distal from the site of application.

Images were taken with an infrared camera measuring the spontaneous emitted heat patterns of the skin. This is considered a significant measurement of the autonomic nervous system. The overall thermal scale is on the bottom of the page ranging from 24.250-34.750°C. The normal human has only a 5 degree °C thermal window from hot to cold.

The upper images recorded the thermal reading of the upper back of a subject with a specific thermal pattern noted in the left upper thoracic paraspinal region. The lower images are of the upper abdomen region.

The numbers in the box attached to each image is the data generated from the circle on the body indicating the High (HI), Low (Lo), Average (Av) and Standard Deviation (SD) temperatures in the respective circle. All measurements are in centigrade. In thermal skin readings a **0.5 °C** difference is considered significant.



36 subjects underwent specific thermal measurements as to the effects of the Lifewave patches in a three day trial. The graph displays the overall thermal change from the first set of measurements to the second set of 5 minute measurements. The average temperatures (pre and post patch) were used to calculate delta T.

Subject	Ave Deg °C Pre Patch	Ave Deg °C Post Patch	Delta T °C
1	32.65	30.35	2.30
2	31.95	29.90	2.05
3	31.45	30.05	1.40
4	35.10	33.60	1.50
5	31.85	29.25	2.60
6	31.55	30.25	1.30
7	30.30	30.50	-0.20
8	32.30	30.75	1.55
9	33.10	30.80	2.30
10	32.50	31.25	1.25
11	30.90	30.15	0.75
12	31.80	30.35	1.45
13	31.30	30.50	0.80
14	30.85	29.30	1.55
15	33.10	30.85	2.25
16	33.50	29.95	3.55
17	33.15	32.95	0.20
18	32.20	30.80	1.40
19	33.20	31.30	1.90
20	32.75	30.85	1.90
21	31.30	30.25	1.05
22	33.80	33.10	0.70
23	31.75	30.00	1.75
24	33.60	32.80	0.80
25	29.65	28.60	1.05
26	33.40	31.00	2.40
27	30.90	28.40	2.50
28	33.40	31.55	1.85
29	31.45	30.70	0.75
30	34.30	32.00	2.30
31	33.45	32.00	1.45
32	28.25	29.05	-0.800
33	33.60	33.55	0.05
34	32.15	30.30	1.85
35	31.55	29.50	2.05
36	32.55	30.70	1.85
Min	28.250	28.400	-0.800
Max	35.100	33.600	3.550
Average	32.239	30.756	1.483
	1.35947	1.285178	0.866932

The average thermal temperature pre patch is 32.239°C.  
The average thermal temperature post patch is 30.756 °C.  
The average Delta T is 1.483°C.

Using a student t-test, a p value of 1.01E-05 is obtained. Since the p (probability) value of .00001 in this study is a p value < 0.05 this indicates that the thermal temperature changes that occur when Energy Enhancer patches are used are statistically significant.

The majority of the participants revealed a thermal response to the patches within a five-minute period. The group also responded beyond the placebo effect, as evidenced by the number of individuals that experienced a significant physiological response. A greater than 80% favorable response rate was observed by the individuals in the study. This study offered one of the first measurements of physiological changes.

When the patches were placed over hyperthermic regions of the body, there was an immediate cooling effect over the area where the patch was applied as well as temperature changes in the surrounding skin. In most cases the entire body revealed a measured thermal difference in cooling when the patches were applied. This measure is a direct indication of the response of the autonomic nervous system. This would be as expected in a normalizing thermoregulating reaction.

In this study, abnormal asymmetric infrared measurements were observed in each case which warranted discussion and consideration of patch placement. Our initial interest was the concept that by placing patches on abnormal thermal regions, it would allow us the ability in theory to control abnormal physiological conditions, which in turn, would change the energies of the individual. In addition, as the patches offered increased energy from their own inherent qualities it gave in many cases, a further increased energy response.

### **Discussion:**

The body's response after placing the patches in a region of hyperthermic state, as measured by the infrared imaging, proved a cooling response to the skin temperature readings both locally and distal from the site of application. This is a valuable corollary when understanding the measured response of the patches as proof that the patches emit some form of energy to the body causing a hyperthermic region to cool. This can only be explained by the patches emitting a form of energy that influenced the autonomic nervous system via the subcutaneous vascular beds.<sup>1,2</sup> The measured thermal response was not always consistent with the patient results. Further measurements as to the patch response were taken with questionnaires that included a measurement among others of the individual's overall energy, mental focus, bowel function and physical activities. The measured response of the patches with infrared

measurements were much like the response of photonic stimulation or low level laser to the body.<sup>3</sup>

**Conclusions:** Placebo patches on five other random people did not offer any measurable physiological infrared response, nor were there any overall body responses. Due to the overwhelming response and measured outcomes of the patches after 5 minutes it is very conclusive that the energy of the patches affected the people in this study in a very significant way. Therefore, the hypothesis that the Energy patches create a cooling response in hyperthermic skin areas is accepted to be true. Further questions will be asked as to why the response is so varied, but the majority of people experienced a very positive reaction to the patches and many have continued to use the patches to observe further improved changes in their health.

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