

# THE MEASUREMENT AND CHARACTERIZATION OF CHARGE ACCUMULATION AND ELECTROMAGNETIC EMISSION FROM BIOENERGY HEALERS

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## ABSTRACT

In this research project volunteer subjects are asked to focus and direct their mental energy into a region of space. This energy may be in the form of healing intent directed towards another person, nearby or at a distance, or the subject may choose to focus or concentrate their mental energy onto one of several instruments measuring voltage/charge, magnetic fields or electromagnetic emissions across a bandwidth that includes infrared, visible and ultraviolet light. These measurements are conducted in an electrically shielded darkroom with a computer outside the chamber to control data acquisition.

## INTRODUCTION

Numerous studies indicate that attentive humans can mentally influence living systems. The range of systems affected runs the gamut from groups of cells (e.g. Nash, 1982); Baumann, et al, 1985) to whole animals (e.g. Grad, 1965; Watkins and Watkins, 1972) to human subjects (e.g. Braud and Schlitz, 1991). Several recent reviews have been published (e.g. Schlitz and Braud, 1997; Targ, 1997; Benor 2001). Benor notes that in 131 controlled studies of distant mental intention, 56 found significant effects. Further, a systematic review of randomized clinical trials found that 57%, involving 2774 patients, showed a positive treatment effect (Astin, et al, 2000).

There are many terms to describe the type of healing this project addresses. Psychic healing, mental healing, laying-on-of-hands, faith healing, energy healing and bioenergy healing are some of the terms used more commonly. The term, bioenergy healing, has become popular in the alternative medicine community. Various techniques are taught for bioenergy healing, such as Reiki, Healing Touch and Therapeutic Touch. Perhaps the most popular among the health care community, and especially among nurses, is Therapeutic Touch (TT). First studied and popularized by Dolores Krieger (1976), a nurse herself, many reviews have taken a cautiously positive interpretation of the bioenergy healing literature (e.g. Achterberg, 1998; Leskowitz, 1998). Benor (2001) reviewed numerous studies showing positive outcomes for patients with a variety of ailments treated with TT.

It is well established in electromagnetic theory that rapid movements of charge can become a source of electromagnetic (EM) radiation (Plonus, 1978). This is the basis of antenna theory and the radiation of radio and television signals. Less well known is the fact that the emission of electromagnetic energy in the form of low-intensity light from biological systems is a common phenomenon. The first reports of biophoton emissions were published eighty years ago by a Russian researcher (Gurwitsch, 1922), and European scientists have studied low-level emission of photons from organisms for quite some time (for reviews see van Wijk, 1992; Tilbury, 1992; Popp, 2002). Of particular importance to our work are reports that human tissues radiate in the ultraviolet region of the spectrum (Rahn, 1936; Konev, et al, 1966). Light emission from humans has been reported in the literature many times over hundreds of years, and an excellent literature review of luminous phenomena around the human body is given by Alvarado (1987).

## METHODS

Infrared (IR) emissions are measured using a Probe-Eye Infrared Camera manufactured by Hughes Corporation. The IR camera head is cooled by a small canister of Argon to improve the signal-to-noise ratio. The camera head is located in the inner darkroom for monitoring the subject, and a video display is located outside the darkroom. The display shows the subject outlined in varying shades of color corresponding to temperature. Thus, any movements by the subject that may produce artifacts should be readily observable. These images are also recorded on a VCR.

To record charge build-up and decay that may occur on the skin surface we use a sensitive voltmeter (Keithley Electrometer model 6514) and a switch system (Keithley model 7001) located outside the chamber with an input of 1-18 electrodes from the subject in order to determine the distribution of charge on the body. The number of electrodes used depends upon the comfort level of the subject.

To measure faint amounts of light that may be emitted from the subject we record photons of light using a photomultiplier tube (PMT) in a thermo-electrically cooled housing (Thorn EMI model 9658R). The peak sensitivity occurs near a wavelength of 385 nm and tapers off gradually into the ultra-violet (UV) range. The PMT system includes a power supply and a photon counter.

To measure magnetic fields we will use an F. W. Bell model 7010 gaussmeter with a digital output and resolution of 0.001 Gauss from dc to 20,000 Hz.

A computer is used for recording and displaying in real time the photon counts from the photomultiplier tube, the voltage or charge from the electrodes attached to the subject and the magnetic field intensity from the magnetometer.

## RESULTS

In a previous pilot study conducted over a span of several months we repeatedly measured charge build-up and decay, and concurrent light emission from one subject during periods of healing intent. Subsequent to our pilot study, another research laboratory (Green, et al, 1991) measured charge build-up and decay on the body of several subjects during periods of focused intent, but they made no attempt to measure light emission. For the current study we plan to make measurements using at least 12 control subjects and 12 healers. During each experimental session we will also record the output from a random-number generator (RNG) that will be located within the inner darkroom.

## DISCUSSION

Bioenergy healers and their patients often report that they feel prickly skin, localized skin temperature increases and energy flowing through their bodies and hands during healing sessions. These subjective sensations may have some physical correlate in unusually high surges in body potential (electrostatic charge build-up and release) that have been measured from some healers. Elmer Green and his associates constructed a room with electrically isolated copper walls and then placed subjects in the room on an insulated platform that isolated them from electrical ground (Green et al., 1991). Surges in body potential measured from 10 experienced meditators did not exceed 4 volts, but in 6 out of 14 experienced, non-contact therapeutic touch practitioners, surges were recorded of 4 to 221 volts (median = 8.3 volts) with durations ranging from 0.5 seconds to 12.5 seconds (median = 3.6 seconds). The frequency of these surges increased during therapeutic sessions in which the practitioner was working on a patient. Video monitoring eliminated the possibility of body motion artifact accounting for the voltage surges. Most of the surges were of negative polarity and returned to baseline within a matter of seconds. Our system has the capability to measure not only voltage or charge fluctuations directly from multiple sites on the bodies of bioenergy

healers, but also the ability to measure EM emissions across a wide frequency band that includes IR, visible and UV light.

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