

**SUMMARY SHEET OF RESEARCH ON EPSTEIN BARR VIRAL AND HUMAN
IMMUNODEFICIENCY VIRAL INFECTIONS**

One of my original objectives regarding the usefulness of bioelectric medical devices was met during this last ten months (December 1992-September 1993). That objective was to evaluate the effectiveness of an Electro-Acupuncture according to Voll (EAV) device called the Life Information System TEN, LISTEN, to differentiate between different types of patients. In Figures 1, 4, and 5 the measurements of electrical conductance clearly distinguish between patients with EBV infection, HIV infection, and AIDS. During viral infection, the immune system points have very high conductances above the normal range of 45-55 units (100,000 ohms). Patients with EBV infection (Figure 1) have distinctively different high conductance points compared to the conductance points of patients with HIV infection (Figure 4). In contrast, AIDS patients have dramatically lower than normal conductance points (Figure 5). Seven of the eleven points shown in Figure 5 fall below the normal range and all eleven of the conductance points of AIDS patients are lower than the same points in HIV infected patients. Figures 1, 4, and 5 illustrate that the pattern of immune response in these three separate conditions are significantly different.

Another objective from my original research design was to test new therapeutics, homeopathic growth factors, for their ability to alleviate symptoms of chronic viral infection. Due to lack of funds this objective was not entirely met, i.e., no homeopathic growth factors were actually given to patients. However, a modified treatment protocol was used successfully for 11 patients with chronic EBV who were treated for three to nine months. Figure 2 illustrates electrical conductances in immune related points of 11 EBV patients of the original 15 EBV patients who were treated more than two times. Electrical conductances fell into the nearly normal range after three to nine visits (Figure 2) compared to Figure 1. Most of these patients were treated three times (one visit per month). Those patients treated nine times were doing better clinically with fewer symptoms than those treated three times. Thus, electrical conductances tended toward the normal range and clinical symptoms diminished after treatment. The treatment protocol was using botanicals and the LISTEN, which sends radio frequency signals specific for each naturopathic medicine at the time of the office visit. Following the office visit, patients took the medicines selected for their ability to normalize electrical conductance.

In December 1992 I began a three-month treatment protocol with two HIV⁺ patients. Figure 6 provides a profile of lymphocyte counts in one HIV⁺ patient (a typical patient) who did not receive treatment using the LISTEN and its radio frequency signals. Figures 7 and 8 provide profiles of lymphocyte counts in two HIV⁺ patients before and after receiving treatment with the LISTEN. I treated them with the radio frequencies of growth factors to balance their electrical conductances four to six times a week. Patient one (Figure 7) received only radio frequencies and was treated an average of three to four times a week. Patient two (Figure 8) received radio frequencies five to six times a week and took the medicines selected for their ability to balance electrical conductances. Figure 6 demonstrates that blood lymphocyte counts continue to diminish over time as a HIV⁺ patient begins to develop AIDS. Figure 7 demonstrates the rises in lymphocyte counts after using momordica (bitter melon) for a three month period (July-October 1992) and then using only radio frequencies over a three month period (December 1992-February 1993). Figure 8 demonstrates the fall in lymphocyte counts and then the rise in lymphocyte counts after combining botanical and radio frequency treatments. Both patients in Figures 7 and 8 received radio frequency signals that represented specific growth factors, such as nerve growth factor (NGF) and acidic fibroblast growth factor (α FGF).

I am now seeking funding to evaluate the effectiveness of prescribing homeopathic growth factors for treatment of chronic DNA and RNA viral infections.

Barbara Brewitt, Ph.D.

THERAPEUTIC PROTOCOL FOR TREATMENT OF CHRONIC EPSTEIN BARR VIRAL INFECTION

The following therapeutic approach can be taken to treat patients with chronic EBV. Please note that the timing of giving the EBV nosode is very critical for successful treatment.

Significance of treatment:

1. Homeopathic EBV nosode (source - ARNICA Products, Anaheim, CA)
This nosode should not be given until the patient is strong enough and nutritionally sound to mount some immune response. If the patient is weak and exhausted, first build their bodies with nutritional supplementation.
2. Co Q₁₀ -
3. Digestive enzymes -
4. Beta carotene -
5. Phytolacca (poke root) - Good for connective tissues, relieves aching, soreness and restlessness. Treat for sore throat. Good for glandular support. Also good for inflammation and over heated tissues.
6. Nutritional support - Super Blue Green Algae
7. Momordica (bitter melon) - Good for anti-viral treatment and stabilizes blood glucose metabolism.
8. Bach flower remedies to aid in emotional support of healing and acts synergistically with homeopathics.
9. Hormone support therapy, especially for thyroid, adrenals, and ovaries/testes.
10. Cell salts containing phosphorous - Phosphorous is the second most abundant mineral in the body. It plays a fundamental role in energy production and metabolism of fats, carbohydrates, and proteins. It is also critical to the formation of new nucleic acids. Phosphorous containing cell salts will benefit digestion and the nervous system. Phosphorous works closely with calcium and the two of them need to be in balance with each other in the body.

Figure 1

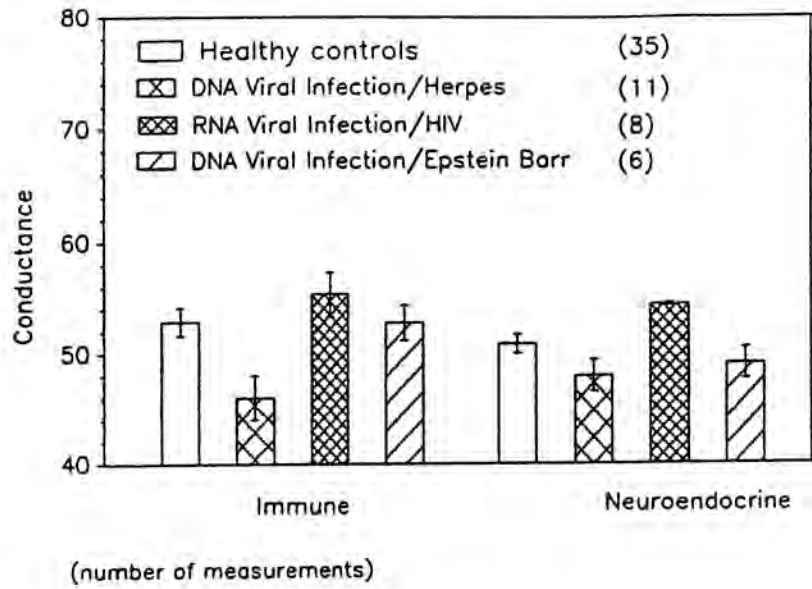
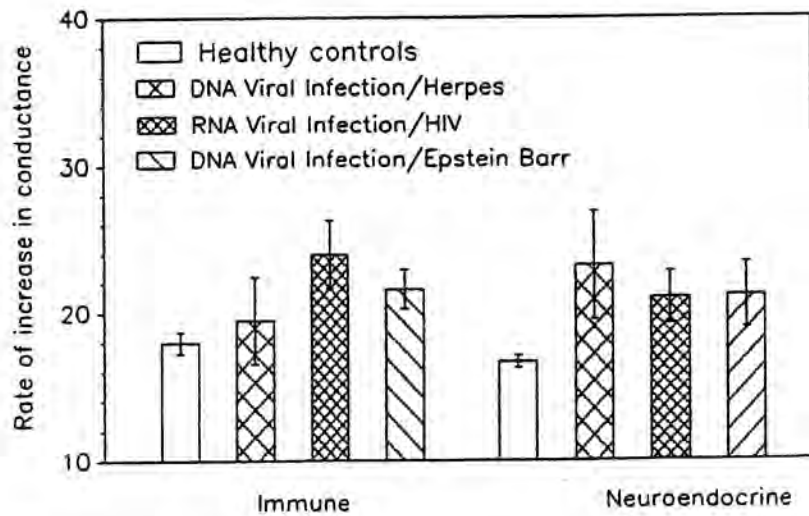


Figure 2



Standard error bars are show in both figures

A B S T R A C T

ELECTRICAL CONDUCTANCE DISCRIMINATES BETWEEN PATIENTS WITH AND WITHOUT DNA/HERPES OR EPSTEIN BARR AND RNA/HIV CHRONIC VIRAL INFECTIONS; Barbara Brewitt, M.Div., Ph.D. and Leanna Standish, Ph.D., N.D.; Bastyr College Natural Health Sciences, Seattle, WA 98105

Electrical conductance measurements were used to analyze potential differences between hand and foot acupuncture points assigned to immune and neuroendocrine function in non-viral and viral infected patients. Patients were classified as: controls (n=15) if they had no chronic DNA or RNA viral infections; DNA viral infected patients (n=9) if they had been diagnosed with either chronic Epstein Barr virus (n=3) or herpes simplex type I or II (n=5); RNA infected patients (n=4) with HIV positive tests and CD4 counts of less than 300 per cmm. Patients were evaluated during one to three separate visits by the same practitioner. A computer based ohm meter (BioSource, Orem, UT) called the Life Information System TEN (LISTEN) was used to determine the magnitude of electrical conductance at specific points on the hands and feet. This technology was adapted from devices that measure galvanic skin resistance, and has been known as electro-acupuncture according to Voll (EAV). The LISTEN is a non-invasive electro-dermal ohm meter which quantitates electrical conductance at a skin point in response to a maximal five volt and 30 microamps signal. The following nine conductance points, as defined by Rheinhold Voll (1977), were assigned to immune function: lymph nodes in the cervical region; lymph control; lymph drainage; allergy control; allergy, environmental; thymus, thyroid; spleen; joints; and connective tissue. The following four conductance points were assigned to neuroendocrine function: adrenals, gonads; pituitary, pineal; nerve control; and neuroendocrine control. Normal electrical resistance at acupuncture meridian skin points equals 100,000 ohms where resistance (ohms) = voltage/current. The scaling units on the LISTEN are standardized on an exponential scale from 0 to 100 so that 50 arbitrary units equals 100,000 ohms. The rate at which maximal conductance is achieved is determined by the formula: slope = amplitude/time multiplied by a scaling unit to provide a minimum value of zero and a maximum value of 100. A one second interval was used to determine each value for conductance. A two-tailed t test was used to determine statistical differences between groups.

Results: The mean value for electrical conductances in the immune system of patients with DNA viral infections of herpes simplex types I and II statistically differed ($P < 0.005$) from control patients. Control patient's conductances were 52.93 ± 1.27 (SEM) units, while herpes infected patients were 46.04 ± 2.00 units (Figure 1). Patients with DNA viral infections of Epstein Barr had conductances of 52.78 ± 1.60 units which were similar to values found in controls. In contrast, RNA viral infected patients with HIV had conductances of 55.38 ± 1.98 units which were higher than controls or DNA viral infected patients. The mean values for these nine immune system points suggest that conductances of DNA viral infected patients with herpes are lower than control patients and HIV infected patients and Epstein Barr infected patients. The profile of electrical conductance changed in the neuroendocrine system where RNA/HIV infected patients had statistically higher mean values ($P < 0.005$) than controls. The mean conductance of neuroendocrine points for RNA/HIV viral infected patients was 54.45 ± 0.15 units compared to control values of 50.88 ± 0.86 units. DNA/Herpes viral infected patients had mean conductances of 47.97 ± 1.44 and DNA/Epstein Barr viral infected patients had a mean conductance of 49.10 ± 1.40 units. Thus, chronic herpes infection in these patients may be associated with lower than normal conductances in the immune related points while chronic HIV infection was associated with higher than normal conductances in the

neuroendocrine related points.

A different pattern was measured in terms of the rate (slope) at which patients reached maximal electrical conductance (Figure 2). The mean slope in the immune system points for control patients was 17.96 ± 0.75 which was not significantly different than the mean value of DNA/Herpes infected patients, 19.49 ± 2.96 . In contrast, the mean value for patients with RNA/HIV infections was 23.98 ± 2.31 ($P < 0.005$) and DNA/Epstein Barr was 21.58 ± 1.35 ($P < 0.01$). These data suggest that the rate of achieving maximal electrical conductance may be higher in patients with HIV and Epstein Barr viruses than control and herpes infected patients. HIV and Epstein Barr viruses directly infect lymphocyte cells which may correlate with the higher values. In the neuroendocrine system the mean slope for all viral infected patients was statistically higher ($P < 0.005$) than controls. The rate of achieving maximal conductance in control clients was 16.66 ± 0.40 , compared to mean values for DNA/herpes at 23.21 ± 3.67 , RNA/HIV at 21.00 ± 1.77 , and DNA/Epstein Barr at 21.14 ± 2.23 . These data suggest that the rate of achieving maximal electrical conductance were highest in patients with herpes simplex; viruses known to infect neuronal cells.

Discussion: We hypothesize that DNA and RNA viral infections change electrical properties of tissues in distinct ways. This finding may have pathophysiological and treatment implications. A larger study that includes blood testing and greater numbers of patients is required before a final conclusion can be accepted that electrical conductance measurements provide therapeutic insights into pathophysiology.

These data are consistent with studies on electrical potential by earlier investigators that found alterations in electrical signals correlated well with physiological phenomenon. In the 1930-1940's H. S. Burr's laboratory documented at least three biologically significant changes in electrical potential at skin points in vertebrates and mammals during embryonic growth and tumor development (Burr and Hovland 1937; Burr, Strong, and Smith 1938;). During the 1960-1990's studies on changes in electrical currents within the body correlated well with bone growth, regeneration of tissues, and regeneration of the nervous system (Behari 1991; Becker 1990; Becker and Selden 1985; Becker 1972; Smith 1970; Zanakis 1988; Becker 1961).

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PRELIMINARY STUDIES

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Figure 1. Before Treatment

The mean values of electrical conductances in patients with chronic Epstein Barr viral (EBV) infection (n=15). Electrical conductances were measured at acupuncture points on the hands and feet of patients. Each point shown in this figure represents tissues and organs of the immune system. Higher conductances than the "normal range" are thought to represent improper gating of ions and electrons across the cell membranes of the tissue. The points out of the normal range in this figure coincide with the clinical symptoms of patients with chronic Epstein Barr viral infection. The points out of range are:
 LY1aR = Lymph drainage of tonsils/throat
 LY4R = Lymph tissue of lungs
 FICR = Connective tissue
 SP2L = Spleen lymphocytes homing to the lower body and gastrointestinal tract
 SP3L = Spleen B lymphocytes and blood purification duties of spleen

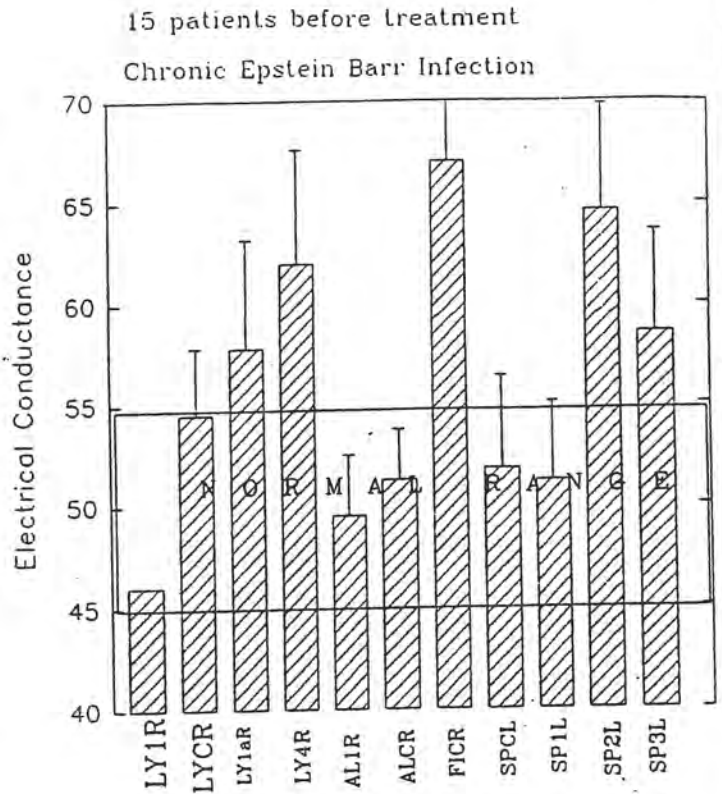
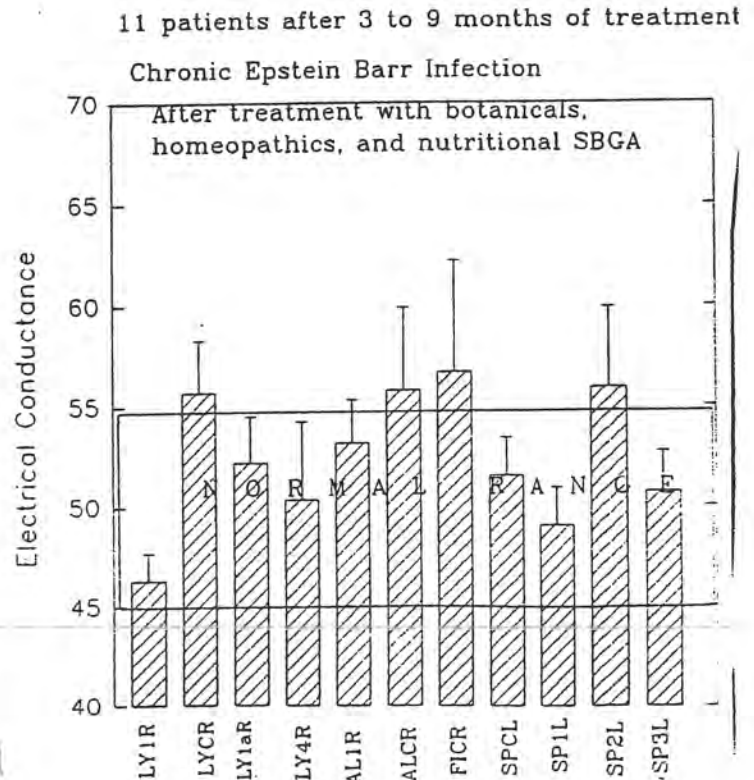


Figure 2. After Treatment with Super Blue Green Algae, and other naturopathic medicines. Electrical conductances of 11 patients that were treated for three to nine months (one visit per month). There was significant improvement in electrical conductances which coincided with fewer clinical symptoms. Statistical tests of significance will be used to evaluate outcomes of the proposed research. Standard error bars are shown.



Barbara Brewitt, Ph.D.

Report to CNERS

PRELIMINARY STUDIES

Figure 4. HIV+ patients before treatment.

Electrical conductances of six HIV+ patients without any AIDS defining illness at the same points as shown in figures 1 and 2. The pattern of electrical conductances is significantly different than patients with EBV. The points higher than the "normal range" were:

- LYCR = Lymphatic vessels throughout the body
- LY1aR = Lymph drainage of tonsils/throat
- LY4R = Lymph tissue of lungs
- AL1R = Allergy: chemical and environmental sensitivity
- ALCR = Allergies to food
- FICR = Connective tissue

Conductances with values lower than the normal range suggest the tissue is depleted and not fully able to fulfill its biological function.

- SPCL = General functioning of spleen
- SP1L = Spleen lymphocytes that home to upper body

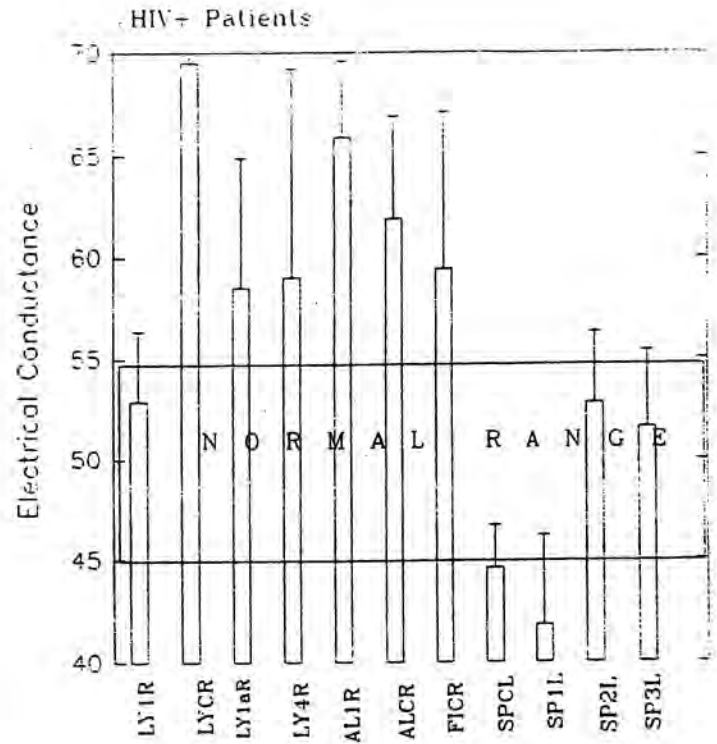
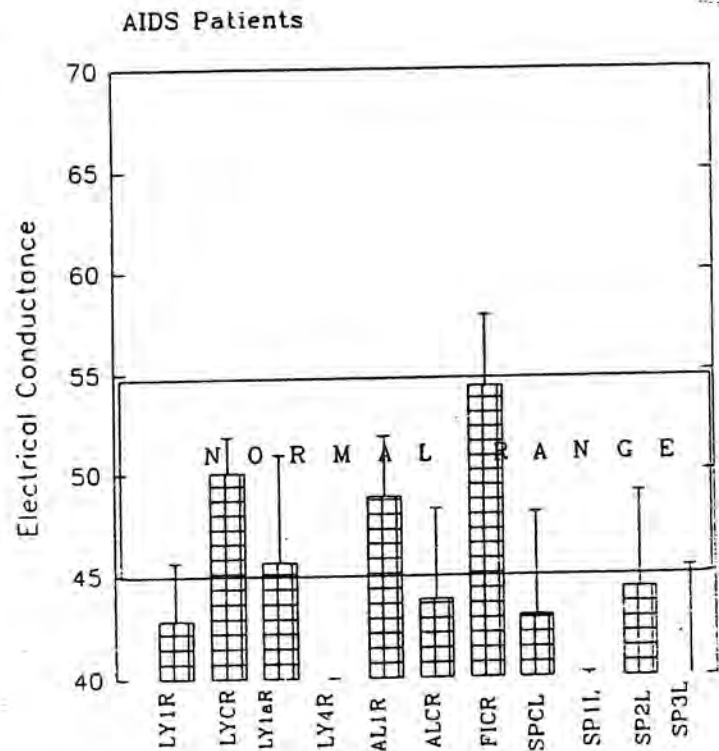


Figure 5. AIDS patients before treatment.

Electrical conductances of three AIDS patients with AIDS defining illnesses, opportunistic infections and CD4 lymphocyte counts below 100. The pattern of electrical conductances is remarkably lower than patients with EBV or HIV without AIDS defining illnesses. As a whole the conductances would suggest that these patients have depleted much of their immune systems innate ability to mount a normal response to opportunistic bacteria, viruses and fungi.

- LY1R = Lymph nodes
- LY4R = Lymph tissue of lungs (conductance = 35 ± 4.2)
- ALCR = Allergies to food
- SPCL = General functioning of spleen
- SP1L = Spleen lymphocytes that home to upper body (conductance = 23 ± 12)
- SP3L = Spleen B lymphocytes and blood purification duties of spleen (conductance = 39 ± 5)



Barbara Brewitt, Ph.D. and Leanna Standish, N.D., Ph.D.

Figure 6. Peripheral Blood Lymphocyte Counts of a Typical HIV+ Patient Developing AIDS Status. During a three year period this patient changed to an AIDS status. The initial CD4 cell counts were approximately 400 cells/mm³ in 1989. During 1991 the lymphocyte counts began to drop precipitously. This patient had not used AZT. Persons using AZT do not differ significantly in lymphocyte counts than from this typical profile. Note that all T-lymphocyte counts dropped in number (CD19 = B cells).

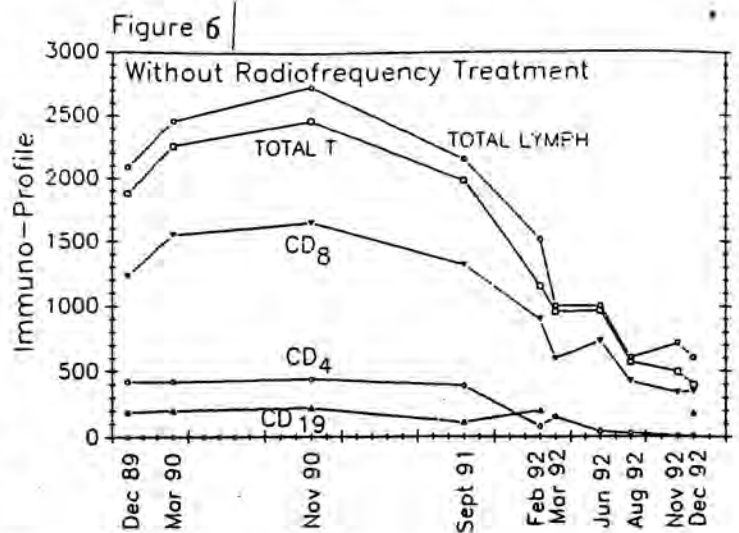


Figure 7. Peripheral Blood Lymphocyte Counts of an HIV+ Patient Treated With Botanicals and Radio frequency (RF) at Separate Times. This patient's initial CD4 cell counts were ~600 cells/mm³ in 1989. During 1990 the serum lymphocyte counts began to drop precipitously and by 1992 was categorized as AIDS. In July 1992, botanical medicines were used and the CD8, CD3, CD2, and CD19 counts raised more than 50% in 3 months. In December 1992 all other medicines were stopped and an exclusive radio frequency treatment 3-4 times weekly with the LISTEN was initiated to normalize electrical conductances in hands and feet points. During the three month period of RF treatment cell counts were sustained and lymphocyte counts rose 7-22% with little to no drop in the CD4 counts.

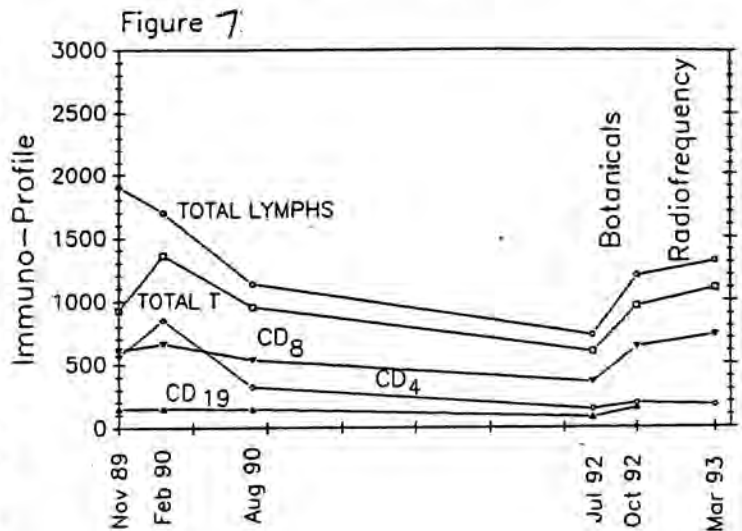


Figure 8. Peripheral Blood Lymphocyte Counts of an HIV+ Patient Simultaneously Treated With Botanicals and Radio frequency. This patient's initial CD4 cell counts were ~600 cells/mm³ in 1991. During February 1992 his lymphocyte counts dropped rapidly and by September 1992 he had an AIDS status and began taking prednisone which contributed to a further drop in lymphocyte counts by October 1992. He stopped taking prednisone in January 1993. In December 1992 he began LISTEN RF treatments 5-6 times weekly to normalize his electrical conductances. Additionally, he was prescribed many of the botanical and homeopathic medicines that corresponded to the digital codes from which the radio frequencies were derived. During December 1992 and March 1993, after stopping prednisone therapy, while still taking RF + natural medicine treatment the CD4 counts increased 76% and the CD8, CD2, and CD3 counts increased 38%. Changes in lymphocyte counts beyond those of CD4 cells may be important to understand the status of the HIV+ patient.

