

MODULATION OF DNA BY COHERENT HEART FREQUENCIES

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INTRODUCTION

Popp's demonstration of quantum coherence in biological systems (1) along with the authors' demonstration that quantum fields can influence neurological (2) and immunological functions (3), support the possibility of a coherent endogenous electro-magnetic field within the body. This hypothesis is also supported by two recent findings from the Institute of HeartMath (4). These studies demonstrated a) coherence in the ECG frequency spectra of individuals whose attention was focused in the heart area while generating deep feelings of love, care or appreciation and b) a correlation between the ECG coherent patterns and those also occurring in the brain and other parts of the body. These results support the Institute's theory that the heart acts as a master electrical oscillator capable of radiating coherent frequencies which promote the health and vitality of the entire human system (5,6). The theory also proposes that physiological benefits of coherent heart frequencies are mediated through DNA. The theory is supported by Popp's demonstration that DNA emits quantum coherent photons (7). One of the first steps in testing this hypothesis would be the demonstration that DNA is modulated by individuals producing coherence in the ECG frequency spectra.

MATERIALS AND METHODS

A continuous state of deeply focused love was generated by Doc Lew Childre as well as several Institute of HeartMath staff capable of emotional and mental self-management and by Dr. Leonard Laskow skilled in holoenergetic healing methods. Individuals with no specialized training were also used as controls. ECG measurements were taken and analyzed by fast fourier transform (FFT) techniques. The coherence ratio was determined by the percent of coherent to noncoherent epics during the entire two minutes of recording. DNA samples were given to all individuals approximately one minute after physiological recordings had begun. The subjects held a beaker containing a test tube filled with DNA for the next two minutes during which time ECG recordings were continued.

The DNA samples consisted of identical aliquots (labeled in a double blind fashion) of human placental DNA suspended in deionized water. At the beginning of each experiment, all DNA samples were heat treated to partially denature (unwind) the DNA. All samples were stored at 4° C in a separate building before and after each experimental run. For each sample, the conformation of DNA was measured before and after exposure to the subject's intention using a Hewlett Packard UV absorption spectrophotometer. The experiments were repeated and confirmed in a second series of tests in another lab using a Carey UV absorption spectrophotometer.

RESULTS AND DISCUSSION

Individuals trained in generating focused feelings of deep love showed high coherence ratios in their ECG frequency spectra and all were able to intentionally cause a change in the conformation of the DNA. The DNA conformation was affected differently according to the specific intention. In some experiments, different intentions caused opposite effects on the DNA. Individuals who showed low coherence ratios, although in a calm state of mind, were unable to change the conformation of the DNA.

The amount of winding and unwinding of the two strands of the DNA helix can be directly measured using UV spectroscopy. UV spectroscopy gives information about the chemical interactions between strands, the resonance energy transfer along individual strands and the interaction between the strands and their environment (water). The conformational changes of DNA observed in this study were complex and suggest that all three sites of action were affected. The UV spectra in Figure 1 indicates a very large increase in absorption (increased denaturation) of a DNA sample after being exposed to an individual generating a particularly high ECG coherence ratio. The observed changes reflected his intention to further denature the DNA. These changes were 3-fold larger than those produced by maximal thermal and/or mechanical perturbation, well known to denature DNA. The effects observed here go well beyond simply causing the DNA to completely denature (i.e., complete separation of the two strands). One possible explanation is that a physical/chemical alteration in the DNA bases which absorb UV light has occurred.

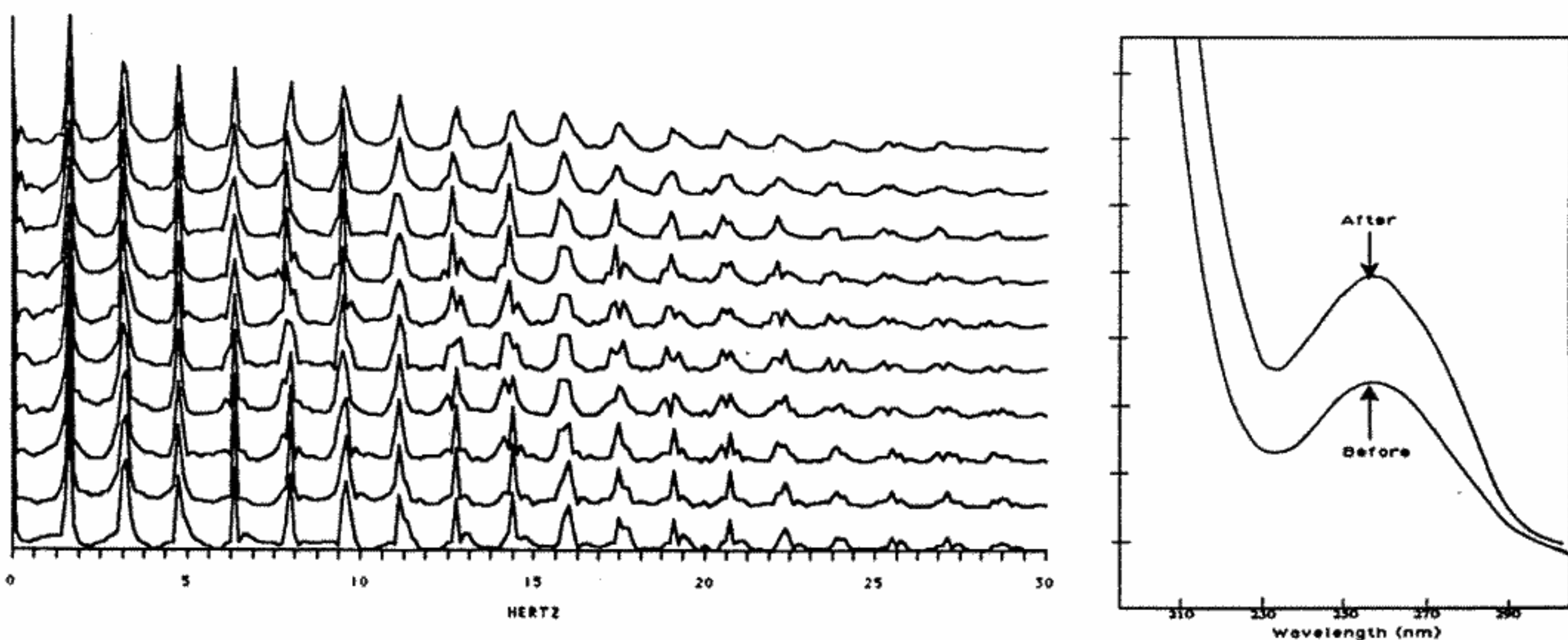


Figure 1. In the ECG spectra on the left, all the epics are coherent. The change in the denaturation of the DNA (right) was three-times larger than could be produced by thermal and mechanical perturbation in the lab suggesting physical/chemical alterations in the DNA bases.

The results in Figure 2 indicate that another individual who showed a relatively high ECG coherence ratio also caused a decrease in the absorption of DNA. This is consistent with the subject's intention to rewind the DNA back into its intact helical conformation. These results also indicate that different states have different effects on the DNA, but the state which generated the highest coherence ratio produced the most marked effects on the conformation of DNA. The dependence of the DNA conformation on the state of the individual was also demonstrated in control individuals who in their normal state generated particularly low ECG coherence ratios and were unable to intentionally influence the DNA.

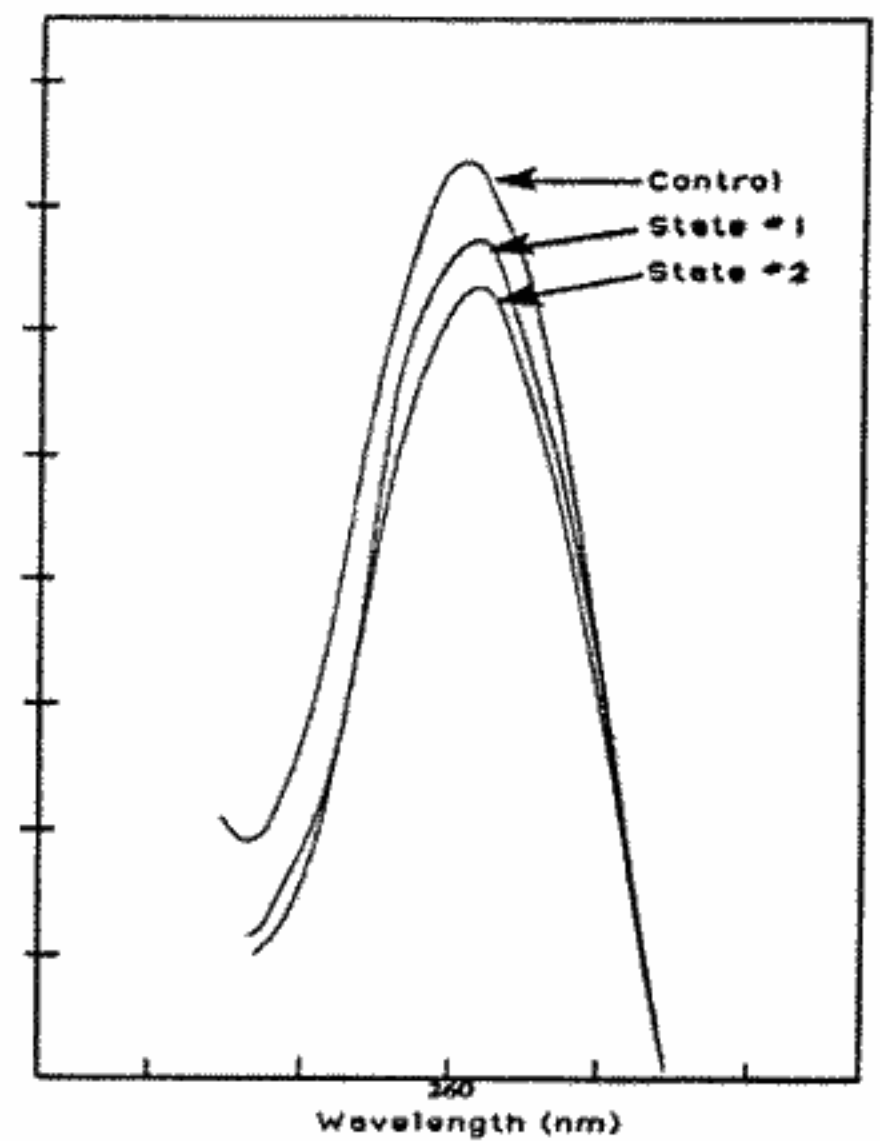
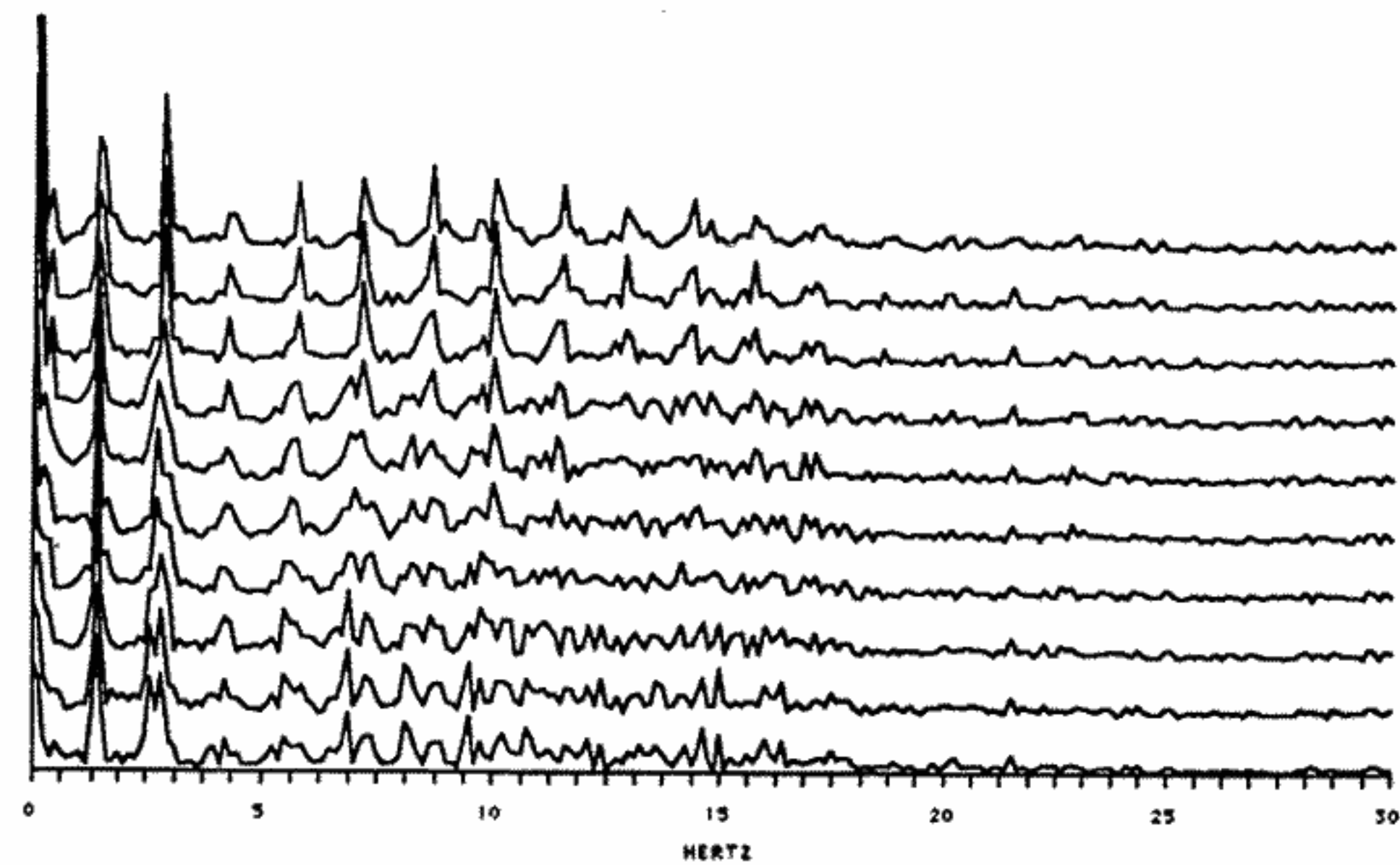


Figure 2. The ECG spectra (left) produced the effect shown in state #2 in the DNA UV spectra. Different coherence ratios (eg. State #2) in the ECG spectra correlated with the amount of conformational change observed in the DNA.

Since different intentions produced different effects on the DNA conformation, it was of interest to see if a specific intention could be directed toward an individual DNA sample. Three identical aliquots of DNA were held at the same time with the intention of denaturing two samples to different degrees but not influencing the third sample. The results in Figure 3 indicate that the two DNA samples showed increased absorption to different degrees while the third sample showed no change in absorption as compared to an untreated control sample. The ability to focus and direct a specific intention to different DNA molecules indicates that the coherent energy field associated with the state of deep love has the ability to respond to very specific intentions and is not just an amorphous energy field.

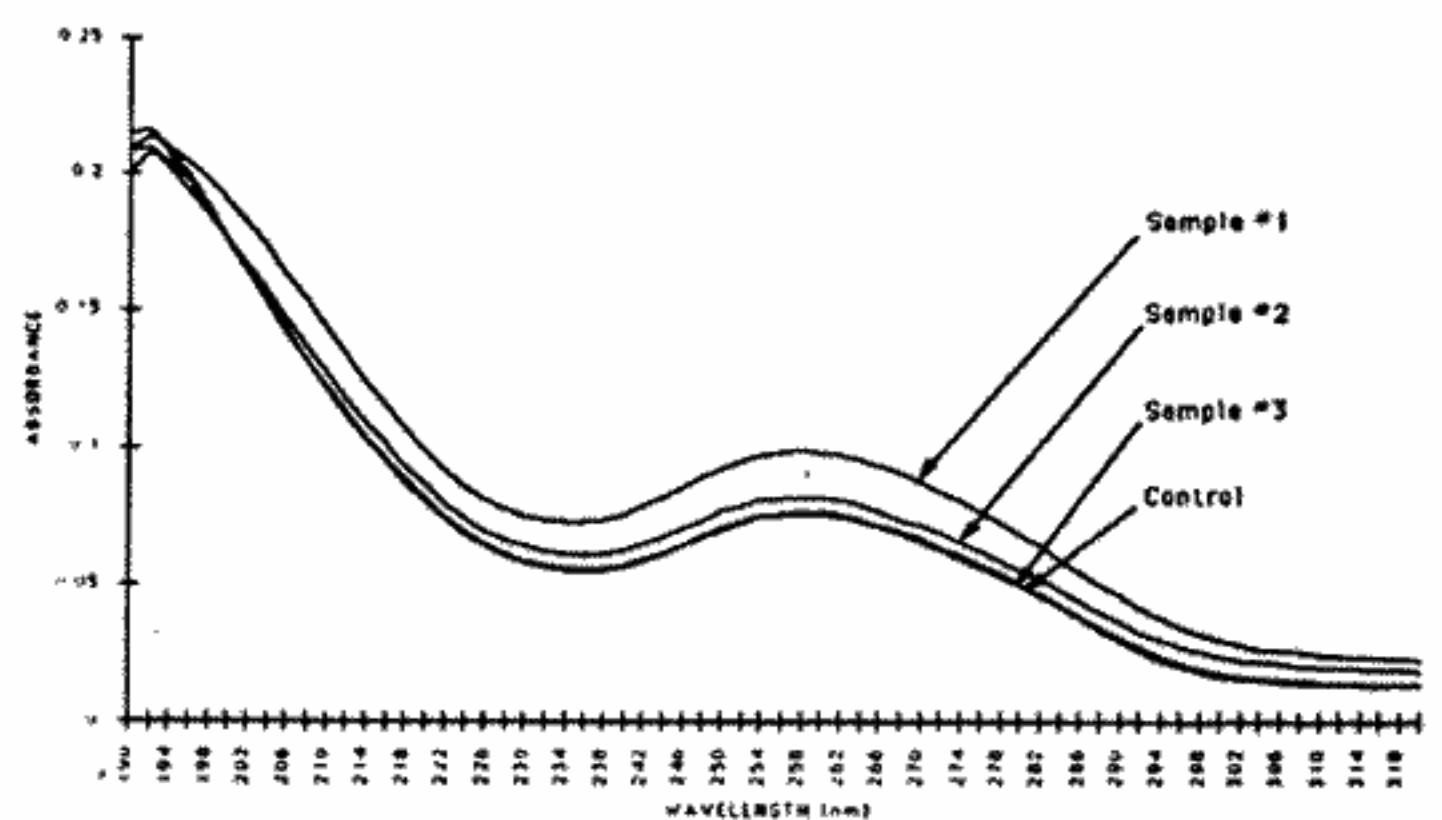
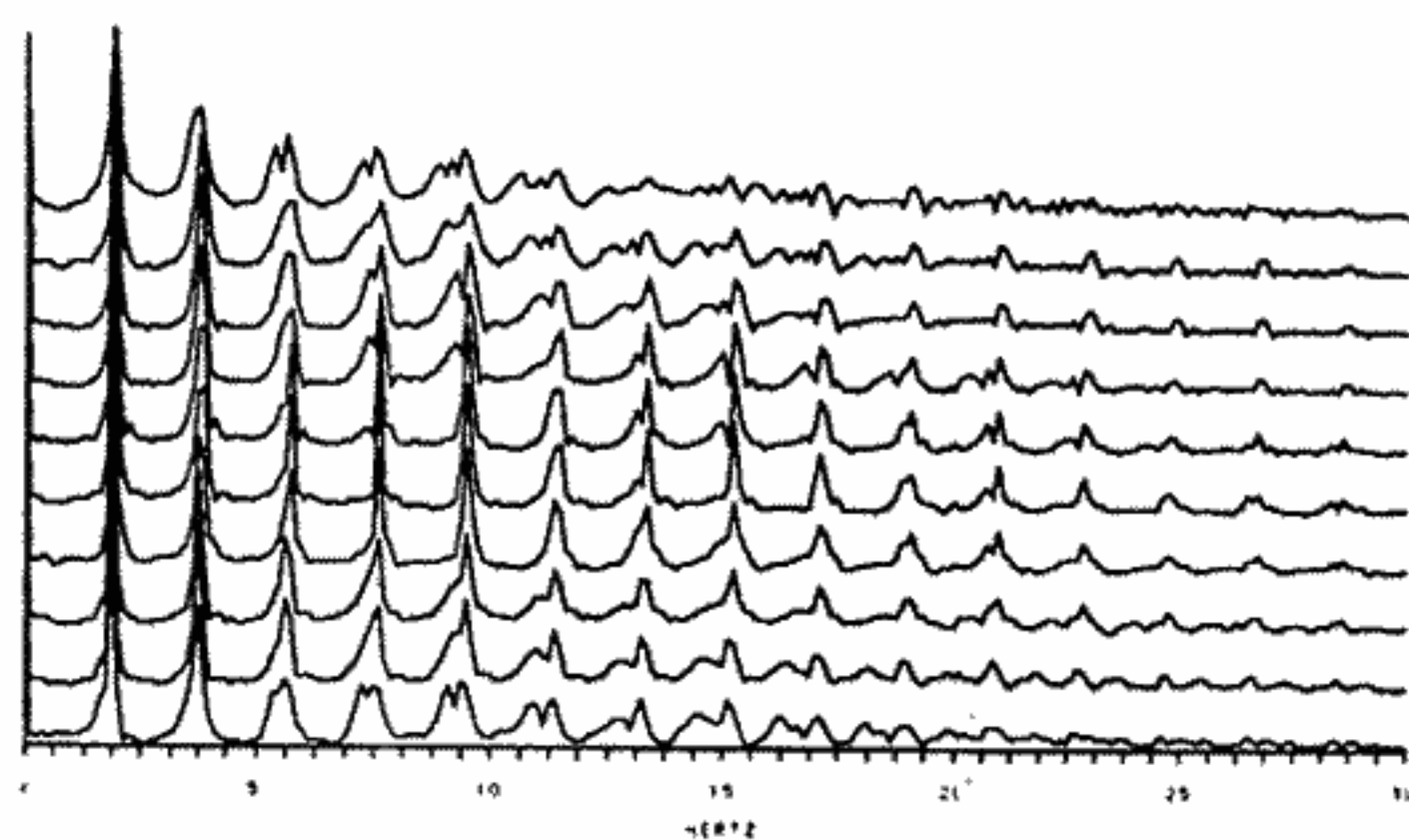


Figure 3. In this experiment, three DNA samples were held at the same time with the intention of simultaneously causing different effects in two samples, while leaving one of the samples unchanged. Sample #3 and the control are indistinguishable from one another, while samples #2 had a smaller change than #1.

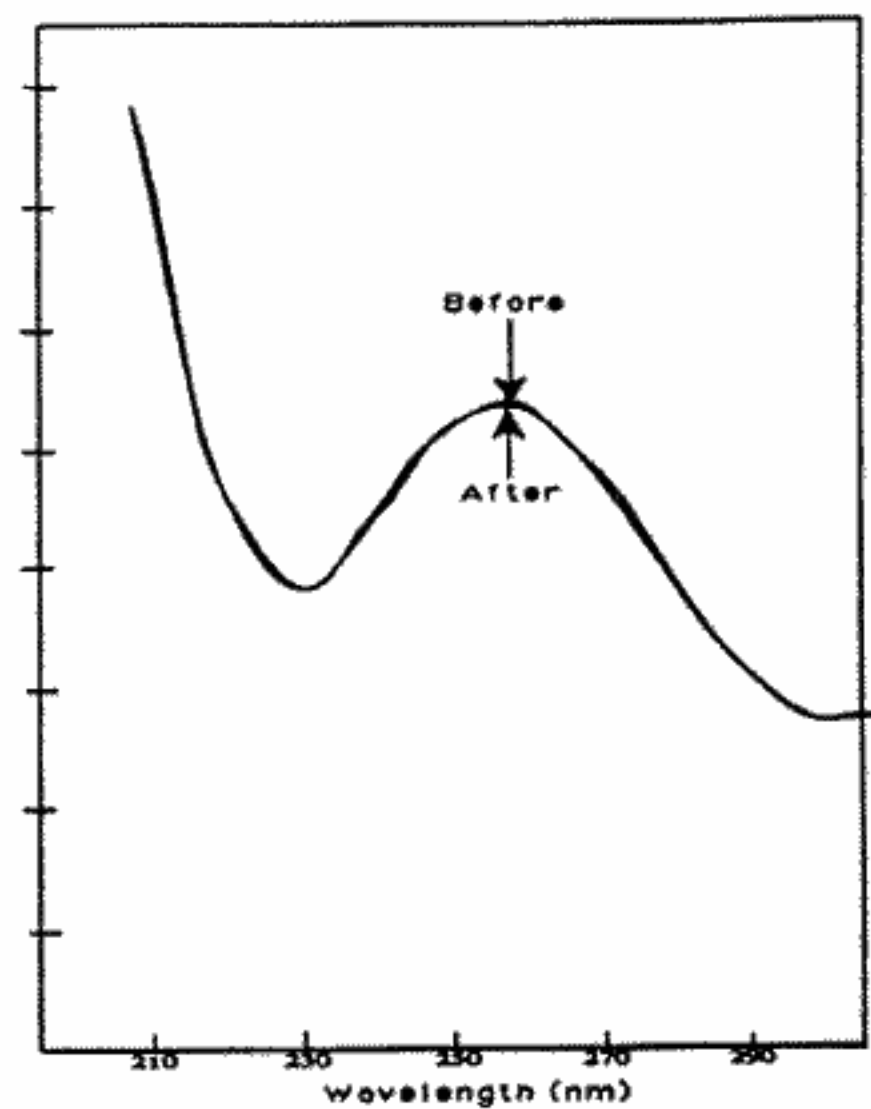
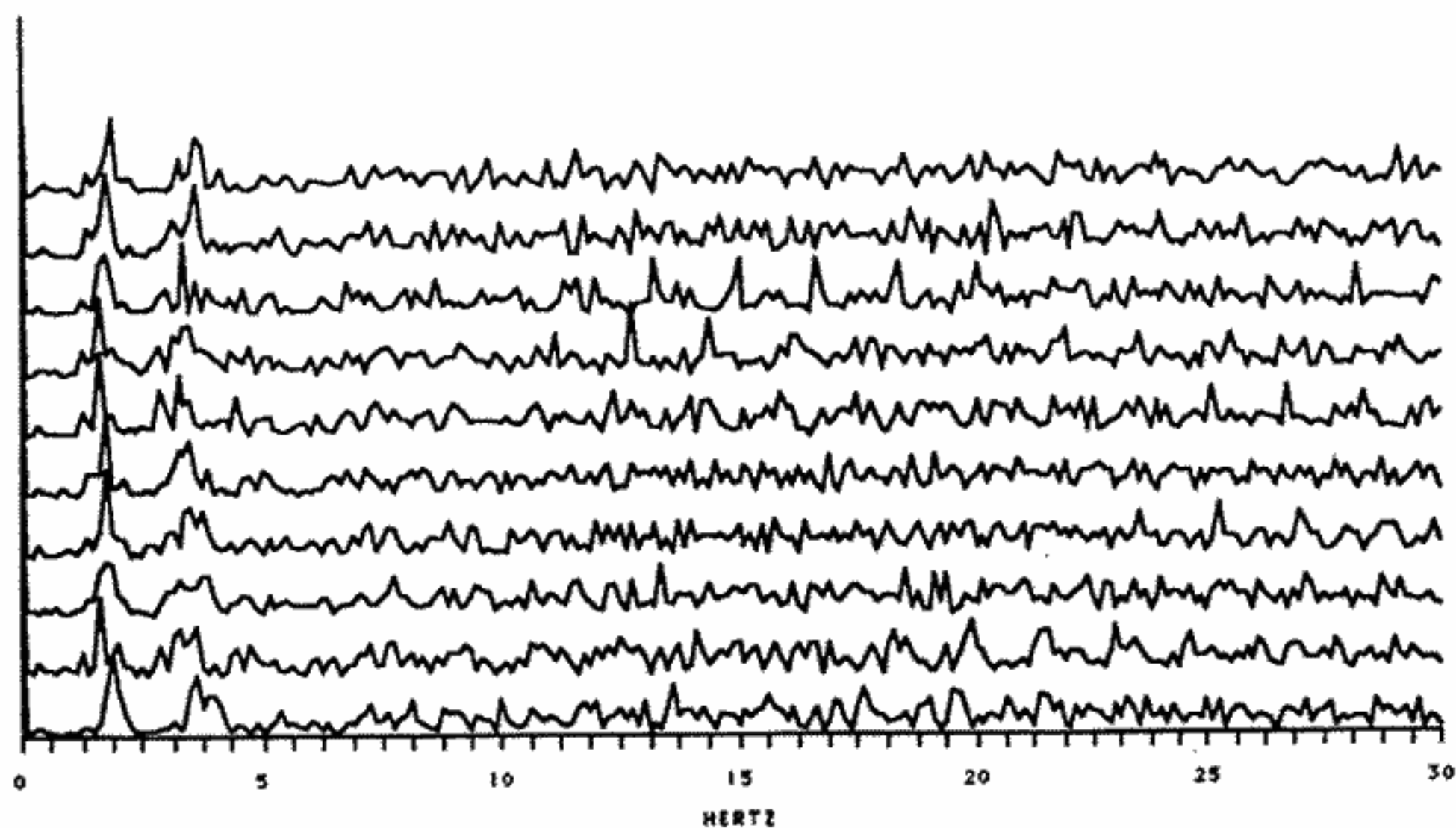


Figure 4. The ECG spectra on the left shows very little indication of coherence with a corresponding small change in the conformational state of the DNA.

CONCLUSION

The results offer the first direct experimental evidence to support the hypothesis that the loving state can produce physiological effects at the level of DNA (5,6). These results extend the previous study by McClelland which demonstrated that individuals in loving states showed increased levels of salivary IgA (8). This study is the first to correlate electrophysiological measurements with physiological changes and indicates that individuals in a loving state produced ECG coherence and can alter the conformation of DNA. Furthermore, the effects were independent of the techniques used to generate coherent heart frequencies.

All individuals capable of generating high ECG coherence ratios could alter DNA conformation according to their intention. Intending to denature (unwind) or renature (wind) the DNA had corresponding effects on the UV spectra. Control individuals, who were not able to sustain their feelings of love, showed low ratios of ECG coherence and were unable to intentionally alter the conformation of DNA.

The conformational states of DNA are important in DNA replication and repair in addition to a wide variety of basic cell functions. The results extend our understanding beyond the current psychoneuroimmunology model which only considers the effects of the brain/mind on the immune system and support the idea that the heart plays a key role in regulating the ability of the mind to effect the body. It is likely that coherent heart frequencies can also mediate immunological effects by a direct action on the DNA molecule. This new understanding of the regulatory role of the heart can be considered as a new discipline, which we call cardioneuroimmunology.

REFERENCES

- (1) Popp FA. Photon storage in biological systems. in: Electromagnetic Bioinformation. Popp FA et al (eds). Urban & Schwarzenberg, Munchen, 1979.
- (2) Rein G. Modulation of neurotransmitter function by quantum fields. in: Behavioral Neurodynamics. Pribram KH (ed). Internat. Neural Network Society, Washington D.C. 1993.
- (3) Rein G. Utilization of a cell culture bioassay for measuring quantum fields generated from a modified caduceus coil. Proc. 26th Intersoc. Energy Convers. Engineer. Conf. Boston, MA 1991.
- (4) McCraty R., Atkinson M & Rein G. ECG Spectra: The measurement of coherent and incoherent frequencies and their relationship to mental and emotional states. Proc. 3rd Internat. Soc. Study Subtle Energy & Energy Medicine Conf. Monterey, CA 1993.
- (5) Childre DL. Self Empowerment: The Heart Approach to Stress Management, Planetary Publications, Boulder Creek, CA 1992.
- (6) Paddison S. The Hidden Power of the Heart, Planetary Publications, Boulder Creek, CA 1992.
- (7) Rattemeyer M, Popp FA, Nagl W. Evidence of photon emission from DNA in living systems. Naturwissen. 68 572 (1981).
- (8) McClelland DC. and Kirshnit D. Effects of motivational arousal through films on salivary immunoglobulin A. Psychol Health Vol. 2 pg. 31,1988.