

Changes in Biophoton Emission associated with Chiropractic Treatments: A Descriptive Pilot Study⁺

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Introduction

Biophoton emission (BPE) refers to light produced by living systems^{1,2,3}. The characteristic of BPE are

- Intensity below human visual threshold (up to some hundred photons per second^{4,5}).
- Correlation of BPE with intense energetic reactions involved in cell metabolism^{1,2,3,6}.
 - phagocytosis
 - neural activity
 - oxidative stress
- Correlations between BPE and different pathologies like multiple sclerosis⁴, cancer^{7,8}, hyperlipemia⁷
- Changes in BPE induced by progression of disease and therapies applied [4,5],

The chiropractic treatment (adjustment) is believed to affect the body in different ways for the purpose of improving well being⁹. The explanations are based on a patho-physiological model that suggests that adjustments help in restoring the structure and/or the function of the underlying tissues ultimately through local biochemical changes.

We consider that adjustments might also affect higher energetic processes that are the sources of BPE¹³. The purpose of this pilot clinical study is to evaluate patients for BPE before and after chiropractic intervention. A secondary purpose is to use three different chiropractic therapeutic approaches to see if the recordings suggest a technique specific difference in BPE.

Materials and methods

The study protocol and the informed consent form were approved by the Institutional Review Board.

BPE measurements were performed similar to previous studies^{4,5,14}, with a photomultiplier and a counting unit connected to a personal computer, in a special designed dark room at Parker College.

The subjects were three volunteer asymptomatic male Caucasian college students. Each subject was admitted into an entrance room for a resting period of up to 20 minutes^{2,5} and then placed prone on a chiropractic table in the recording room.

The recordings were performed midline, over the spinous processes (SP) of C2 and/or L4 vertebra (identified by palpation using body landmarks¹⁵).

The recording time was at least 200s before and after the intervention, with succeeding 100s intervals used to confirm the BPE stability.

Three different chiropractic techniques were used.

Case #1 (Aged 27): short lever high velocity [SLHV] manipulation⁹ with a drop table at C4. The BPE at C2 and L4 was recorded before and after adjustment for 200s.

Case #2 (Aged 36) “Blocking” in prone position for a Category I (as a part of SOT⁸) was used. The BPE was recorded over the SP of L4 and then of C2 for 300s each. The blocks were thereafter positioned and left in place for 10 minutes. After removing the blocks the BPE was recorded for another 300s at C2 and then at the L4 level.

Case #3 (Aged 50): Bio-Energetic Synchronization Technique [BEST]. The BPE was recorded continuously only at L4 SP because the cervical measurements might interfere with BEST procedures. The measurements started 200s before the procedure, which took about 7 minutes. The BPE was measured for additional 10 minutes after the adjustment.

Results

The average values for BPE, together with standard deviation (Std), the value of first and last 100s of the measurement, the percent in the variation between recordings before (pre) and after (post) adjustments, and the probability (p) to reject null hypothesis (unpaired t-test) are presented in Table 1 for all of cases.

Technique	Level	BPE values before adjustment				BPE values after adjustment				P value	% variat after / before
		First 100 s	Last 100 s	Mean BPE	Std	First 100 s	Last 100 s	Mean BPE	Std		
SLHV	C2	13.57	13.26	13.37	5.35	16.12	15.80	15.96	4.68	< 0.001	19.41
	L4	17.87	16.89	17.26	5.74	12.42	12.28	12.35	4.38	< 0.001	-28.42
SOT	C2	23.60	24.06	23.95	6.36	25.01	24.69	24.81	6.16	0.047	3.57
	L4	22.07	20.01	21.33	5.70	24.61	21.09	23.29	6.19	< 0.001	9.18
BEST	C2	15.01	14.80	14.91	4.97	15.56	17.21	16.68	5.08	< 0.001	11.90

The SLHV manipulation used in case 1 uses the mechanical energy of the dropping piece. One single adjustment induced significant statistical change on BPE both locally and distal: 19.4% increase at C2, 28.4% decrease at L4. (Fig 1.)

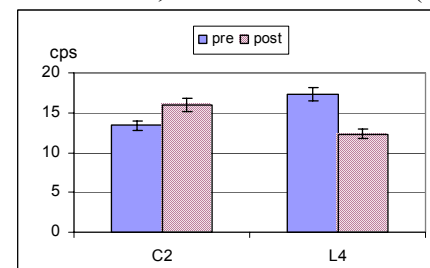


Fig 1. Mean BPE before (pre) and after (post) adjustment for case 1, at C2 and L4 levels

In case 2, the pelvic blocking allows for gravitational energy (body weight) to change the relative positions of body tissues and hence affects their functions. As a result, there was an observed overall increase in the body luminescence at both levels while continuous measurements at C2 (Fig 2.) shows that the BPE level remained almost constant during blocking and increased significantly (p=0.047) only at the end.

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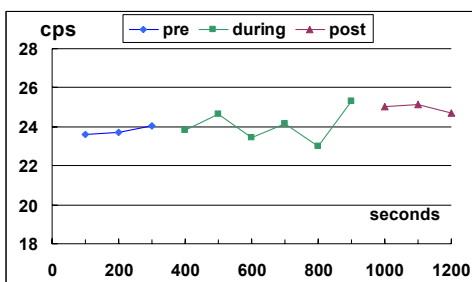


Fig 2. Mean BPE for every 100s at C2 level, for case 2

The results of case 3, using BEST, revealed a marked increase (11.9%) in the BPE that started at the end of the treatment and continued to rise thereafter (Fig 3).

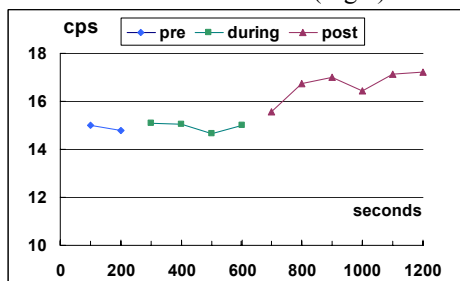


Fig 3. Mean BPE for every 100s at L4 level, for case 3

Discussion

The BPE was associated with elementary cellular processes and is investigated as a possible monitoring tool and explanatory mechanism of physiological and pathological processes. However, the direct relationship between any intervention and the BPE remain to be further studied. It is our hypothesis that the energy of adjustments distributes in part directly to underlying tissues and the rest converts to electromagnetic energy (e.g. biophotons) and flows throughout the entire body using body cavities as waveguides. The energy that interacts with the underlying structures can accumulate as potential energy/structural energy mainly in connective tissue or as a kinetic/functional energy modifying elementary cellular processes. It may be hypothesized that an intervention that induces an increase of BPE also induces intensification of high metabolic processes in the body or a release of the energy from tissue/cell/molecular deposits, whereas a decrease of BPE will imply the opposite.

Thus, the overall decrease of BPE in case 1 may imply that most of the classical “bone moving” energy is absorbed and redistributed as potential energy of the realigned structures. The stability of the BPE after that means that the redistribution of energy occurred during the short period of the intervention itself. The overall increase in cases 2 and 3 suggests an intensification of internal processes that produces biophotons. Those processes might be involved in the proposed cranio-sacral respiratory mechanism that constitute the basis of SOT¹¹. They also may be a result of BEST intervention that hypothesizes that the patient’s and doctor’s biological field interactions will lead eventually to functional and structural changes based on redistribution of the patient’s energy of segmented areas thus “allowing the natural balancing of the energy fields to occur”¹². Moreover, the continuous increase of BPE after adjustment supports the presupposition that healing mechanisms are balanced by adjustments and they continue to work afterward.

The changes in BPE were recorded not only at the place of intervention but also at a remote location. This supports our

hypothesis that the energy of the adjustment is distributed at long distances, even at the opposite end of the spine, suggesting a direct bioelectromagnetic connection between different body parts that deserves further investigation. This might be a possible mechanism underlying therapies including not only chiropractic but also acupuncture, reflex therapy, Reiki, etc.

This study had limitations that need to be addressed with subsequent studies: the theory to explain the direct relationship between supposed mechanisms of action of chiropractic and BPE, the natural variation of the BPE during body parts movements, the selection criteria for the adjustment techniques, the completeness of adjustments versus only one procedure, the involvement of symptomatic versus asymptomatic cases.

Conclusions

High-energy producing processes in the body demonstrated through BPE appear to be influenced by chiropractic adjustments.

The adjustments induce BPE changes both at close proximity of the intervention and at a distance.

Different type of energy input through adjustments (mechanical kinetic, gravitational and bioelectro-magnetic field of the therapist) induces different behavior of BPE.

There is a need for more studies to correlate the BPE with other physiological parameters like skin temperature, heart rate, oxygen consumption etc. in order to elucidate the intimate mechanism by which an adjustment alter the bioenergetics of the organism by direct energetic input into the local tissue and processes and at distance.

Also, there is a need for more precise quantitative relationship between BPE and pathological processes in the body so that BPE can reliably assess the evolution of diseases and the effect of therapy.

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