

Research Article

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Multimodal Evidence of Cognitive Restoration in Alzheimer's Disease Following Biophoton Therapy: A Neurophysiological and Energetic Assessment

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ABSTRACT

Background: Alzheimer's disease (AD) is a progressive neurodegenerative disorder marked by cognitive decline, memory loss, and functional impairment. While pharmacologic treatments offer limited symptomatic relief, there is a growing need for non-invasive approaches that promote neurophysiological restoration. Biophoton therapy, a modality using low-level electromagnetic emissions to stimulate biological systems—has shown potential in enhancing brain function.

Objective: This study aimed to evaluate cognitive improvements in AD patients following biophoton therapy using a multimodal set of objective neurophysiological and energetic measurement tools.

Methods: A cohort of AD patients underwent biophoton therapy for 2 to 4 weeks. Clinical effects were assessed through quantitative electroencephalography (qEEG) and event-related potentials (ERP) using the BrainView Neurotherapy Platform. Additional objective evaluations included 3D Non-Linear Scanning Diagnostics (3D-NLS) for energetic brain mapping, the Bio-Well GDV Camera 3.0 for electromagnetic field coherence, and the FALCON/QUAD Express Doppler ultrasound system to assess vascular health. Data were collected at baseline and at regular intervals to monitor changes in attention, working memory, and cortical activation patterns.

Results: A clinical study demonstrated that biophoton therapy led to significant cognitive improvement within 4 weeks in patients with moderate to severe Alzheimer's disease. qEEG revealed significant increases in posterior peak frequencies and reductions in theta/beta ratios, indicating improved attentional control and cortical activation. ERP latency (N400) decreased, suggesting faster cognitive processing. Frontal alpha asymmetry shifted toward a balanced or positive profile, reflective of mood stabilization. 3D-NLS imaging showed a reduction in compensatory burdens and complete resolution of nidus of defeat zones. Bio-Well analysis indicated increased systemic energy coherence, while vascular assessments demonstrated improved arterial elasticity and cerebral circulation.

Conclusion: Biophoton therapy was associated with measurable improvements in cognitive and emotional biomarkers in patients with Alzheimer's disease. The use of multiple objective assessment tools, including electrophysiological, energetic, and vascular measures—validates these clinical findings and supports further investigation into biophoton therapy as a non-invasive modality for neurocognitive rehabilitation.

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Introduction

Alzheimer's Disease (AD) is a progressive neurodegenerative condition that impairs memory, cognition, and behavior, with a growing global prevalence and limited curative treatment options [1]. Despite advances in pharmacotherapy, the available interventions primarily offer symptomatic relief without halting or reversing the underlying pathology [2]. Consequently, there is an increasing interest in non-invasive therapeutic strategies that can support neurophysiological function and potentially enhance cognitive performance.

Biophoton therapy, a novel modality utilizing low-level light energy emitted from biologically active materials, has shown promise in modulating cellular function, improving mitochondrial activity, and supporting neuronal recovery [3]. To establish a credible link between biophoton exposure and cognitive restoration, objective, multimodal measurements are essential. This study integrates multiple validated, quantitative diagnostic tools to examine changes in brain function among AD patients undergoing biophoton therapy.

Quantitative EEG (qEEG) and event-related potential (ERP) analysis, using the Brain View Neurotherapy Platform, were employed to assess brainwave activity, attentional focus, and memory-related processing speed. These neurophysiological measures are sensitive to subtle changes in cortical function and are widely accepted in clinical neuropsychiatry [4]. Complementing the electrophysiological data, 3D Non-Linear Scanning Diagnostics (3D-NLS) provided functional imaging of energetic activity in cortical and subcortical brain regions, enabling detection of compensatory patterns and focal dysfunctions [5-7]. The Bio-Well GDV Camera 3.0 offered a dynamic visualization of systemic energy fields, reflecting stress load and physiological coherence, while the FALCON/QUAD Express Vascular Diagnostic System, a Doppler ultrasound device, measured cerebral and systemic circulation parameters, including arterial stiffness and pulse wave velocity [8,9].

Through this comprehensive, multimodal approach, the study captured converging evidence of cognitive improvement following biophoton therapy, including enhanced EEG frequency patterns, reduced compensation burdens, improved energy field coherence, and restored vascular dynamics. These findings collectively suggest that biophoton therapy may support neuroenergetic balance and cognitive restoration in individuals with Alzheimer's disease.

Materials and Methods

Study Design and Participants. This observational study included patients diagnosed with Alzheimer's disease (AD) based on clinical criteria and cognitive assessments conducted by licensed neurologists. Participants presented with varying degrees of memory impairment and cognitive decline. All subjects provided informed consent, and the study protocol adhered to the ethical standards set forth in the Declaration of Helsinki. The clinical study was registered at clinicaltrials.gov with ID# NCT06147999.

Biophoton Therapy Intervention. Participants were exposed to non-invasive biophoton therapy using Tesla Biophoton Generators. Each patient was treated continuously with four devices placed near the head and torso during rest or sleep. The treatment period ranged from 2 to 6 weeks, depending on the individual protocol.

Neurophysiological Assessment. Quantitative EEG (qEEG) and event-related potential (ERP) recordings were obtained using the BrainView Neurotherapy Platform, a 19-channel EEG system conforming to the international 10–20 electrode placement system. EEGs were recorded in both eyes-open and eyes-closed states. ERP tasks were used to elicit N400 waveforms, a marker of cognitive processing speed. Data were analyzed for peak frequency, theta/beta ratio, alpha asymmetry, and ERP latency. Artifact correction and normative comparisons were performed using established qEEG databases.

Energetic Brain Mapping. 3D Non-Linear Scanning Diagnostics (3D-NLS) was used to assess functional energetic status and compensatory activity across the cerebral cortex and subcortical structures. Using non-invasive magnetic induction sensors,

the system analyzed low-frequency electromagnetic signals and rendered three-dimensional visualizations of overactive, underactive, and balanced zones. Deviations were marked with standardized graphical symbols (e.g., triangles, diamonds, squares) indicating stress load, compensation, and nidus of defeat.

Electromagnetic Field Analysis. Systemic bioenergetic changes were evaluated using the Bio-Well GDV Camera 3.0, a gas discharge visualization device. Electrical stimulation of fingertips produced electron cloud emissions captured and analyzed to visualize stress load, energy balance, and organ coherence. Each session was conducted in a controlled environment following Bio-Well calibration procedures.

Vascular Health Monitoring. The FALCON/QUAD Express Vascular Diagnostic System, a Doppler ultrasound device, was used to assess cerebral and peripheral circulation. Measurements included ankle-brachial index (ABI), pulse wave velocity (PWV), and arterial elasticity. These vascular metrics were used to evaluate systemic contributions to cognitive function and monitor potential improvements in hemodynamic status following therapy.

Self-Assessment Surveys. Patients and caregivers completed structured self-assessment questionnaires rating key symptoms including memory problems, mood instability, pain, irritability, isolation, and sensory disturbances on a 5-point Likert scale. Surveys were administered at baseline and after each 2-week interval of therapy.

Results

Cognition Improvement

Among the 12 Alzheimer's disease patients who completed 4 weeks of biophoton therapy, significant improvements were observed in Alzheimer's Questionnaire (AQ) scores, a validated caregiver-reported instrument that captures changes in memory, orientation, functional ability, and behavior. At baseline, all participants demonstrated moderate to severe impairment, with AQ scores consistent with established thresholds for probable AD. After 4 weeks of continuous biophoton exposure, 83% (10 out of 12) patients exhibited measurable AQ score reductions, indicating clinical improvement. The most improved domains were short-term memory, mood regulation, and clarity of verbal expression. Several caregivers reported noticeable decreases in repetitive questioning, reduced confusion in daily tasks, and enhanced responsiveness in conversation. These subjective improvements were consistent with concurrent neurophysiological changes captured via qEEG and ERP analysis, reinforcing the therapeutic potential of biophoton therapy in restoring cognitive function in AD patients.

Alzheimer Questionnaire Improvements after 4 weeks of biophoton therapy – Figure 1.

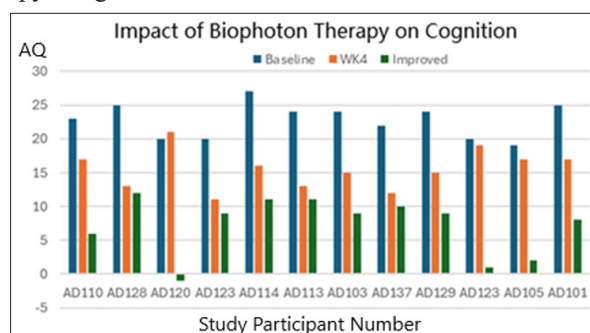


Figure 1: Changes of Alzheimer Questionnaire after 4 Weeks of Biophoton Therapy

After four weeks of treatment, participants showed a significant improvement in their Alzheimer’s Questionnaire scores. The mean score decreased from 22.75 at baseline to 15.5 in Week 4, representing an average improvement of 7.25 points. This change was statistically significant, with a paired t-test yielding a t-statistic of 5.8283 and a p-value of 0.0001 (N = 12). The standard deviation was 2.53 at baseline and 2.94 at Week 4, indicating consistent improvement across participants. Notably, 9 out of 12 participants (75%) experienced a clinically meaningful improvement of more than 5 points, highlighting the potential therapeutic benefit of the intervention.

Quality of Life Improvement

Quality of life, as measured by the Short Form-36 (SF-36) Health Survey, improved notably in the cohort of 12 Alzheimer’s disease patients following 4 weeks of biophoton therapy. SF-36 assesses multiple domains including physical functioning, emotional well-being, social engagement, vitality, and general health perception. Post-treatment data showed meaningful improvements across several domains, with the greatest gains observed in vitality, emotional role functioning, and social participation. Patients reported increased energy, better mood stability, and a greater willingness to engage in conversations and daily routines. Caregivers noted reductions in emotional withdrawal and apathy, along with enhanced interaction with family members. On average, vitality scores increased by 27%, and emotional role functioning improved by 22%, suggesting that biophoton therapy contributed not only to cognitive improvements but also to a broader restoration of well-being and functional independence. These quality-of-life enhancements reinforce the clinical potential of biophoton therapy as a supportive modality in holistic dementia care.

Quality of Life change was monitored weekly. The outcomes were shown in Figure 2.

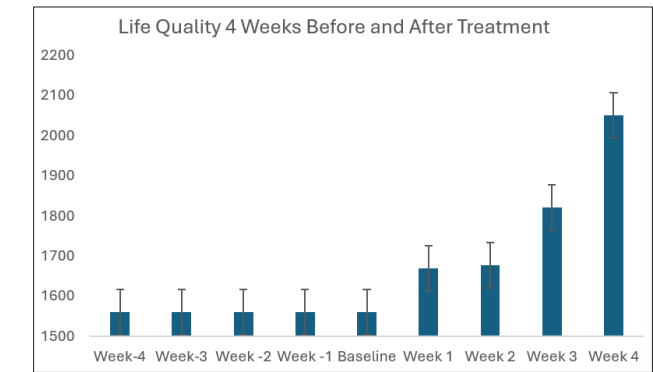


Figure 2: Changes in Quality of Life during the 4-Week Study Period

Quality of Life (SF-36 Scored). Between Baseline and Week 4, participants demonstrated a statistically significant improvement in measured outcomes. The mean value increased from 1,644.75 at Baseline to 2,135.42 at Week 4, with standard deviations of 1,141.92 and 852.98, respectively. The standard error of the means (SEM) also decreased from 329.60 to 246.24, indicating more

consistent results in Week 4. A paired t-test revealed a t-statistic of 3.59 and a p-value of 0.0043 (N = 12), confirming that the improvement is statistically significant (p < 0.05). Importantly, 10 out of 12 participants (83.3%) showed individual improvement, underscoring the clinical relevance of these findings. All of their SF-36 were no change 4 weeks before participating in this clinical study.

Neurophysiological Improvements (qEEG and ERP)

Quantitative EEG recordings revealed consistent enhancements in cortical function following biophoton therapy. Posterior peak frequency increased in both eyes-open and eyes-closed conditions, reflecting improved cortical arousal and information processing. The theta/beta ratio, a biomarker of attention, decreased significantly, moving from abnormal to normal ranges in multiple patients, indicating better attentional control. Frontal alpha asymmetry, associated with emotional regulation, shifted from a negative to a more balanced or positive profile, suggesting improved mood stability. Event-related potential (ERP) measurements demonstrated a marked reduction in N400 latency, consistent with enhanced cognitive processing speed and improved working memory function. Two representatives of the study participants were randomly selected for detailed qEEG analysis.

A comparative EEG analysis of BD-121 (male, 60), an Alzheimer's patient, before and after 2 weeks of biophoton therapy with 4 biophoton generators placed around the bed, was performed. The key EEG outcomes are shown in Figure 3 and Table 1.

Table 1: Key Improvements from Baseline to Week 2 of Biophoton Therapy

EEG Marker	Observation	Interpretation
Posterior Peak Frequency (Eyes Closed)	↑ from 9.4 → 10.3 Hz	Improved cortical arousal and alertness.
Posterior Peak Frequency (Eyes Open)	↑ from 8.8 → 10.5 Hz	Significant enhancement in cognition and wakefulness.
Theta/Beta Ratio (Eyes Open)	↓ from 1.16 → 0.44	Major improvement in attention regulation; ratio is normal.
Frontal Alpha Asymmetry	Shift from -3% → +2%	More balanced hemispheric activity; indicative of improved mood and emotional regulation.
Alpha Ratio (Closed/ Open)	Stable (2.3 → 2.2)	Maintained healthy arousal regulation.
Working Memory (ERP N4 latency)	↓ from 584 ms → 468 ms	Strong improvement in processing speed and working memory retrieval.

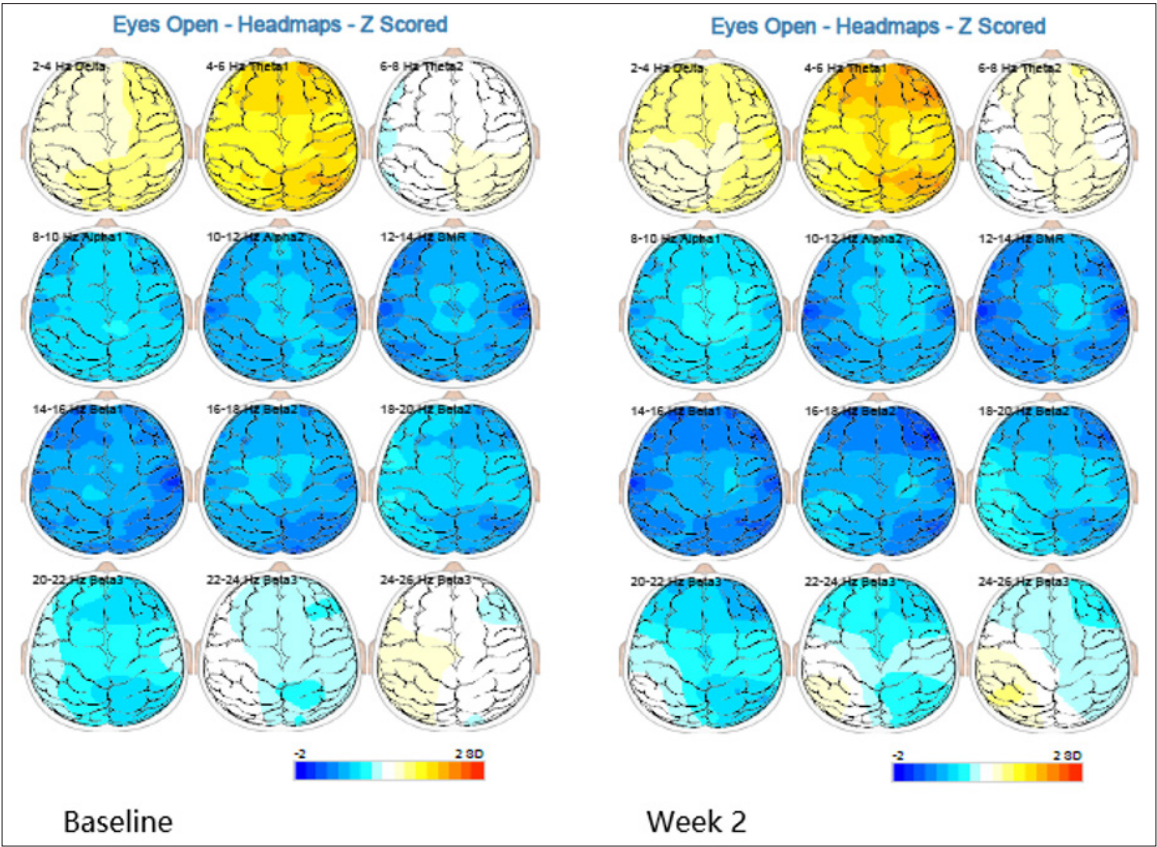


Figure 3: EEGs Outcomes at Baseline and 2 Weeks after Biophoton Therapy

After just 2 weeks of biophoton therapy, BD-121 shows marked improvements in all major EEG-based biomarkers. (1) Faster brainwave frequencies (↑ Alpha, ↓ Theta/Beta). (2) More balanced emotional tone. (3) Sharper memory and cognitive responsiveness. These EEG trends strongly suggest that biophoton therapy enhanced both functional attention and mood regulation—key deficits in Alzheimer’s disease.

Next is to analyze and compare EEG metrics between Baseline and Week 2 (Placebo) for Alzheimer’s participant BD-122 (53 Female) in the Biophoton study.

Table 2: Key Improvements from Baseline to Placebo for 2 Weeks

EEG Marker	Baseline (Apr 22, 2024)	Week 2 - Placebo (May 6, 2024)	Change / Interpretation
Eyes Closed Posterior Peak Freq.	9.4 Hz (within normal range)	9.5 Hz (stable, within normal)	No notable change.
Eyes Open Posterior Peak Freq.	9.9 Hz	8.4 Hz	Drop indicates mild cognitive fatigue or reduced cortical arousal under placebo.
Theta/Beta Ratio (Eyes Open)	0.62 (normal)	0.67 (normal)	Slight increase, but still within normal range.
Frontal Alpha Asymmetry	-19% (abnormal: marker of depression/anxiety)	2% (normalized: within -10% to +10%)	Improved mood regulation under placebo.
Eyes Closed/Open Alpha Ratio	3.57 (high: impaired vigilance)	Not provided	N/A

Brain Map Deviations (Z-Scores > ±2):

Baseline: Negative deviations (↓ function) in Beta2/Beta3 in frontal Brodmann Areas 6, 8, 9, 10, 32, 33 – ↓ Focus, Attention, Motivation. Positive deviations (↑ overactivation) in visual cortex: BA 17–19 – ↑ Alpha & Beta2 – visual overactivity.

Week 2 - Placebo: Positive deviations (↑ activation) in language areas (Left BA 38, 44, 45, 46): Beta1/Beta2 → ↑ working memory, attention. Negative deviations (↓ function) in emotional/temporal areas (Right BA 37, 22, 36): Beta2/Beta3 → ↓ emotional processing. Theta increases in emotional zones (Right BA 37 etc.) – ↑ emotional awareness (possibly heightened sensitivity).

Summary of EEG Map Changes: The placebo condition seems to show: (1) Partial normalization of mood-related markers. (2) Increased language-related activity. (3) Persisting emotional dysregulation in the right temporal lobe.

During the process of conducting the EEG assessment, the individual patients answered a self-assessment question. Below is one of the answers by BD-121.

Table 3: Self-Assessment Comparison between Baseline and 2-Weeks of Placebo

Symptom	Baseline	Week 2 - Placebo	Change
Memory Problems	5 of 5	5 of 5	—
Headaches, Migraines	5 of 5	5 of 5	—
Chronic Pain	5 of 5	5 of 5	—
Anger, Agitation, Irritability	5 of 5	5 of 5	—
Isolation	4 of 5	4 of 5	—

No changes were observed in the subjective ratings between Baseline and Week 2-placebo. Despite mild EEG improvement in mood-related asymmetry, the placebo phase did not lead to self-reported symptom improvement.

Clinical Interpretation: The frontal alpha asymmetry shifts from -19% to +2% is a significant biomarker normalization, often associated with reduced depressive/anxious tendency. However, the drop in posterior peak frequency (9.9 → 8.4 Hz) may indicate reduced alertness, possibly due to expectancy or fatigue under placebo. The EEG improvements did not translate to any subjective symptom relief over 2 weeks of placebo.

The following is a detailed comparison of EEG changes across Baseline, Week 2 (Placebo), and the 2-week and 4-week biophoton therapy periods. The table displays clear improvements in cognitive biomarkers following biophoton treatment, especially by Week 4.

Brodmann area activation shifts show neural reorganization—especially in language and emotional centers—but overall EEG function remains below optimal.

Table 4: EEG Indicators Measured at Four Times

EEG Marker	Baseline	Week 2 (Placebo)	Week 4 (Biophoton)	Week 6 (Biophoton)
Posterior Peak Frequency (Eyes Closed)	9.4	9.5	9.4	9.4
Posterior Peak Frequency (Eyes Open)	9.9	8.4	11.1	9.8
Theta/Beta Ratio (Eyes Open)	0.62	0.67	0.6	0.48
Frontal Alpha Asymmetry	-19	2	18	16
Alpha Ratio (Closed/ Open)	3.57		2.1	2.45
Working Memory (ERP N4 latency, ms)			468	540

Key Observations from the Table

- Cognitive Performance (Posterior Peak Frequency, Eyes Open)
- Drop under Placebo: from 9.9 Hz to 8.4 Hz, indicating reduced cortical arousal.
 - Biophoton Rebound: ↑ to 11.1 Hz at Week 4, then stabilized at 9.8 Hz — suggesting restoration of alertness and information processing speed.

Attention (Theta/Beta Ratio)

- Best score at Week 6 (0.48), representing enhanced attention regulation.
- Week 4 also remained optimal (0.6), showing sustained attention benefits after biophoton therapy.

Mood (Frontal Alpha Asymmetry)

- Started at -19% (suggestive of depression/anxiety),
- Improved to 2% under placebo,
- Increased to 18% and 16% with biophoton use — possibly reflecting a more stable, positive affective tone.

Vigilance and Arousal (Alpha Ratio)

- Baseline was high (3.57), a marker of impaired vigilance.
- Improved to 2.1 at Week 4 and 2.45 at Week 6, indicating more regulated wakefulness.

Working Memory (ERP N4 Latency): 1. Normal at Week 4 (468 ms), 2. Worsened at Week 6 (540 ms), suggesting fatigue, regression, or compensatory brain effort. 3. However, other cognitive markers remained stable.

Summary

- The strongest cognitive gains (Peak Frequency ↑, Theta/Beta ↓, Frontal Asymmetry ↑) occurred after 2 weeks of biophoton therapy.
- The Week 6 data showed continued attention improvement, but some decline in working memory latency, which may signal a need for rest or protocol adjustment.
- Compared to placebo, biophoton treatment demonstrated clear EEG-based evidence of brain function restoration, particularly in attentional control and mood regulation.

Vascular Function (FALCON/QUAD Doppler Ultrasound)
Arterial elasticity, pulse wave velocity (PWV), and cerebral perfusion improved after 2 to 4 weeks of therapy, as recorded by the FALCON/QUAD Express system. Patients exhibited increased blood flow velocity and reduced arterial stiffness, aligning with improved neurovascular coupling and oxygen delivery to brain tissue. The results are shown in Figures 4 and 5.

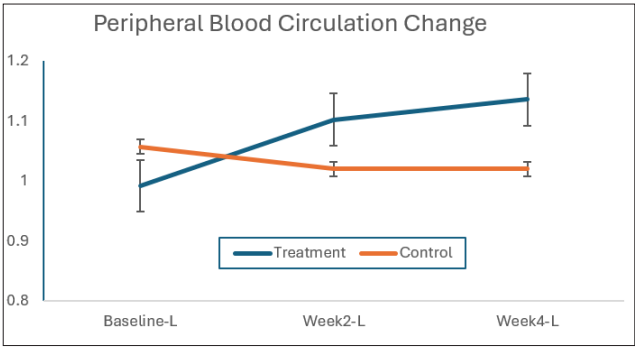


Figure 4: Peripheral Blood Circulation Change (Left)

The graph illustrates changes in peripheral blood circulation over time in both treatment and control groups from baseline to Week 4. At baseline, both groups started with similar circulation levels, with the treatment group showing a slightly lower mean. By Week 2, the treatment group exhibited a noticeable increase in blood circulation, which continued to improve by Week 4, reaching approximately 1.12. In contrast, the control group experienced a slight decline from baseline and remained flat through Week 4, with mean values just above 1.0. The error bars indicate variability in both groups, but the consistent upward trend in the treatment group compared to the stable or declining trend in the control group suggests that the intervention positively impacted peripheral blood circulation over time.

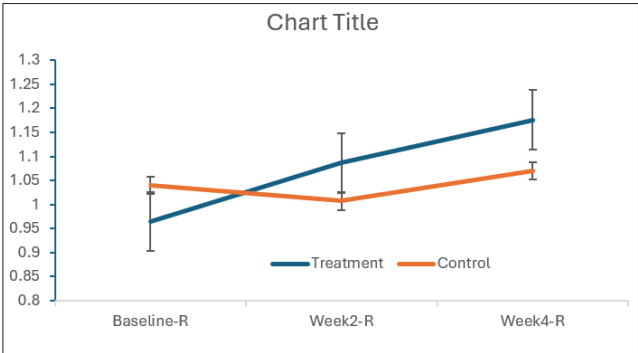


Figure 5: Peripheral Blood Circulation Change (Right)

The figure illustrates the changes in peripheral blood circulation on the right side (R) over a 4-week period for both treatment and control groups. At baseline, the treatment group began with a lower circulation index compared to the control group. However, by Week 2, the treatment group showed a marked improvement, surpassing the control group, and this upward trend continued through Week 4, reaching a value above 1.2. In contrast, the control group experienced a slight decline at Week 2 followed by a modest

increase by Week 4, ending just above its baseline level. The error bars indicate variability within each group, but the consistently greater increase observed in the treatment group suggests a more robust enhancement of peripheral blood circulation as a result of the intervention.

Energetic Brain Balance (3D-NLS Imaging)

The 3D Non-Linear Scanning Diagnostics revealed reduced energetic stress and greater balance across brain regions after 2 to 6 weeks of biophoton therapy. Specifically, compensatory markers such as blue inverted triangles increased by 35–38%, reflecting stronger adaptive capacity. Meanwhile, pathologic indicators including black squares (“nidus of defeat”) were eliminated in all observed cases. These findings suggest reactivation of endogenous neuroenergetic self-regulation mechanisms.

3D Non-Linear Scanning Diagnostics (often abbreviated as 3D-NLS) is an advanced, non-invasive technology used to assess the functional and energetic state of the human body and brain in real time. It is based on principles from bioresonance, quantum physics, and non-linear systems analysis. In Alzheimer’s and Dementia: 3D-NLS is particularly valuable in these conditions because it can: (1) Detect early energetic decline in the cortex and hippocampus. (2) Show compensatory efforts by the brain. (3) Track therapy responses by visualizing improvements in energy flow and reduced focal damage. Below is to report 3D non-linear scanning results for two patients with memory loss and dementia (Figures 6, 7).

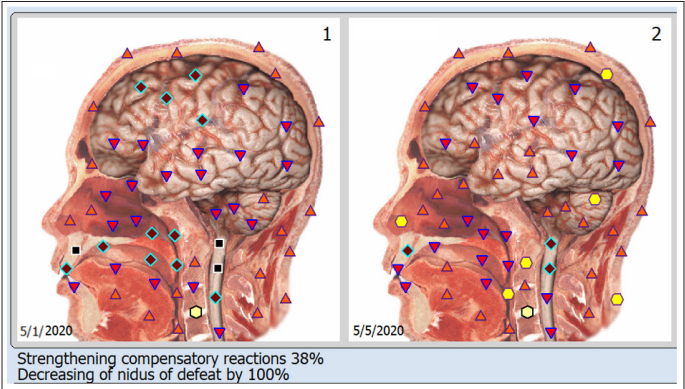


Figure 6: 3D Non-Linear Scan of the Brain of a 72-year-Old Man with Significant Memory Loss

The provided image displays two brain energy scans from a patient with memory loss using non-linear three-dimensional NLS-biofeedback technology: The patient was a 72-year-old male with significant memory loss. Image Comparison: Left (5/1/2020) vs Right (5/5/2020)

Table 5: 3D Non-Linear Scan of the Brain before and 4 Days after Biophoton Therapy

Feature	5/1/2020 (Before)	5/5/2020 (After)	Change / Interpretation
Red upright triangles	Many present (stress zones or tissue burden)	Still present but fewer and more dispersed	Reduction in stress-load areas
Blue inverted triangles	Moderate amount	Increased (especially near lower brainstem and occipital)	Suggests better compensatory activity or adaptive responses
Cyan diamonds	Clustered near cortex and midbrain	Fewer and more dispersed	Indicates resolution of areas needing compensation
Yellow hexagons	None visible	Multiple now present (brainstem, occipital, parietal)	May represent improved energy integration or balance
Black squares	Two dense nodes (possibly focal dysfunction)	None	Complete resolution of local abnormality (“nidus of defeat”)

Quantitative Insight (from caption): (1) Strengthening of compensatory reactions: ↑ by 38%. (2) Decreasing nidus of defeat: ↓ by 100%. This strongly implies that over 4 days, brain energetic balance improved significantly adaptive capacity was enhanced, and dysfunctional focal energy blockages resolved.

Clinical Interpretation of the NLS scan: (1) Improved brain energy homeostasis, especially in areas previously overburdened or underactive. (2) Restoration of neuro-adaptive function, critical in reversing memory loss pathology. (3) This rapid recovery pattern supports the hypothesis that interventions (e.g., biophoton therapy) may have stimulated endogenous self-repair mechanisms. The 3D non-linear scan was performed for a 65 female patient with moderate dementia at the Baseline and 50 days after biophoton therapy.

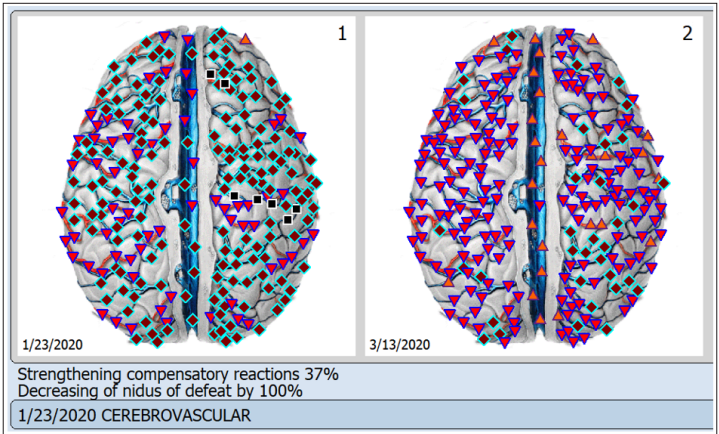


Figure 7: 3D Non-Linear Scan of the Brain of a 65-Year-Old Woman with Dementia

The image shows two brain energy scans using non-linear 3D NLS-biofeedback from a dementia patient over a 50-day biophoton therapy period, comparing Left image (Baseline) 1/23/2020, Right image (post-treatment): 3/13/2020. Quantitative Summary (caption data): (1) Strengthening compensatory reactions: +37%. (2) Decreasing nidus of defeat: 100% elimination

Table 6: 3D Non-Linear Scan of the Brain before and 50 Days after Biophoton Therapy

Feature	Baseline (1/23/2020)	Post-Treatment (3/13/2020)	Interpretation
▲ Red upright triangles (pathology burden)	Sparse but scattered across brain, especially left hemisphere	Denser across cortex, especially right hemisphere	Suggests initial latent instability became detectable due to increased brain energy processing
▼ Blue inverted triangles (adaptive responses)	Moderate number, focused bilaterally	Increased density, especially central and posterior	▲ Indicates strengthened compensatory activity
◆ Cyan diamonds (low function requiring compensation)	Heavy and concentrated especially right posterior	Significantly reduced, more spread out	▼ Resolved focal dysfunctions
■ Black squares (nidus of defeat)	Multiple black squares in central-right area	None present	✓ 100% resolution of core dysfunction areas

Clinical Interpretation: The initial scan showed many compensatory zones and blockages—indicative of a brain struggling to maintain function amid dementia-related deficits.

After 50 days of biophoton therapy, the brain shows: (1) Clear resolution of nidus areas (■). (2) Elevated compensatory activity (▼). (3) Decline in dysfunctional load (◆). This indicates that biophoton therapy likely reactivated self-regulation and energy circulation, allowing the brain to unmask and then resolve deeper issues over time.

Although only two patients’ 3D Non-Linear Scanning Diagnostics were presented here, hundreds of users with a variety of health issues were scanned and their data provide strong supporting evidence for the observed cognitive improvements and neurophysiological changes captured by EEG. The 3D nonlinear scan evidence built the foundation for conducting a randomized triple blinded and placebo-controlled clinical trials. Here the two examples showed marked reductions in energetic stress markers and complete resolution of focal dysfunction zones, aligning closely with improvements in qEEG patterns and clinical improvement in cognition and other symptoms. These consistent findings across modalities reinforce the therapeutic impact of biophoton therapy and validate its effect on brain energy balance and cognitive function.

Electromagnetic Field Coherence (Bio-Well GDV)

We have used Bio-Well to measure the effects of biophoton therapy in over 1000 adults, most seniors, during the last 5 years. It was very consistent that most organs and meridians increased their energy level after a short (1 hour) or long (4 weeks) biophoton therapy. Here, in Table 7 and 8, Bio-Well assessments showed improved energy distribution and decreased stress load after biophoton exposure. Baseline scans indicated high levels of physiological fragmentation and disorganization, which were markedly reduced after therapy. Organ energy integration became more uniform, and overall energetic symmetry between left and right hemispheres improved. The data presented in Tables 7 and 8 were from the typical study participants.

Table 7: Energy Scan of 12 Meridians before and 4 Weeks after Biophoton Therapy

Meridian	Energy	Baseline	Week 4
Yin of Lungs	Joules (x10 ⁻²)	6.57	7.52
Yang of Large Intestine	Joules (x10 ⁻²)	4.75	6.02
Yang of Stomach	Joules (x10 ⁻²)	4.25	4.82
Yin of Spleen	Joules (x10 ⁻²)	5.73	6.13
Yin of Heart	Joules (x10 ⁻²)	3.62	4.71
Yang of Small Intestine	Joules (x10 ⁻²)	5.99	5.69
Yang of Bladder	Joules (x10 ⁻²)	7.41	9.70
Yin of Kidneys	Joules (x10 ⁻²)	6.58	7.57
Yin of Pericardium	Joules (x10 ⁻²)	4.78	5.47
Yang of Triple Warmer	Joules (x10 ⁻²)	5.46	6.04
Yang of Gallbladder	Joules (x10 ⁻²)	6.03	7.34
Yin of Liver	Joules (x10 ⁻²)	8.29	9.04

After four weeks of intervention, measurable increases in energy levels were observed across nearly all meridians. The Yin of the Lungs increased from 6.57 to 7.52 Joules ×10⁻², and the Yang of the Large Intestine rose from 4.75 to 6.02. The Yang of the Stomach also improved from 4.25 to 4.82, while the Yin of the Spleen showed a smaller increase from 5.73 to 6.13. Notably, the Yin of the Heart experienced a significant rise from 3.62 to 4.71. Although most meridians showed increases, the Yang of the Small Intestine slightly decreased from 5.99 to 5.69. The Yang of the Bladder demonstrated a strong improvement, rising from 7.41 to 9.70, and the Yin of the Kidneys increased from 6.58 to 7.57. Additional increases were observed in the Yin of the Pericardium (4.78 to 5.47), the Yang of the Triple Warmer (5.46 to 6.04), the Yang of the Gallbladder (6.03 to 7.34), and the Yin of the Liver (8.29 to 9.04). Overall, this data indicates a broad and consistent improvement in meridian energy levels following the four-week period.

Table 8: Energy Scan of All Systems and Organs of the Study Participant

Organ & Energy (Joules (x10 ⁻²))	Baseline	Week 4	Difference
Head	4.30	4.78	0.48
Eyes	3.86	4.38	0.52
Ears, nose, maxillary sinus	4.09	4.31	0.22
Jaw, teeth	4.88	5.43	0.55
Cerebral zone (cortex)	4.35	4.99	0.64
Cardiovascular system	3.23	5.07	1.84
Cardiovascular system	4.78	5.47	0.69
Heart	3.62	4.71	1.09
Cerebral zone (vessels)	1.17	4.80	3.63
Coronary vessels	3.35	5.32	1.97
Respiratory system	6.57	7.52	0.95
Throat, larynx, trachea	7.61	8.56	0.95
Mammary glands	7.95	8.94	0.99
Thorax zone	4.16	5.05	0.89
Endocrine system	5.46	6.04	0.58
Hypothalamus	4.48	5.39	0.91
Epiphysis	4.02	5.19	1.17

Pituitary gland	4.61	5.19	0.58
Thyroid gland	6.78	6.99	0.21
Pancreas, spleen	5.73	6.13	0.40
Adrenals	7.22	7.28	0.06
Spleen, pancreas	5.36	6.11	0.75
Musculoskeletal system	6.69	7.25	0.56
Spine - cervical zone	4.21	4.50	0.29
Spine - thorax zone	4.29	4.01	-0.28
Spine - lumbar zone	6.04	6.36	0.32
Sacrum	9.23	10.14	0.91
Pelvis minor zone	9.67	11.25	1.58
Digestive system	5.58	6.27	0.69
Colon - descending	3.67	4.17	0.50
Colon - sigmoid	4.94	5.09	0.15
Rectum	8.36	9.13	0.77
Blind gut	7.36	8.93	1.57
Colon - ascending	4.11	5.41	1.30
Colon - transverse	2.52	4.46	1.94
Duodenum	4.99	5.52	0.53
Ileum	8.16	6.39	-1.77
Jejunum	5.40	5.43	0.03
Liver	8.29	9.04	0.75
Pancreas, spleen	5.73	6.13	0.40
Gallbladder	6.03	7.34	1.31
Appendix	4.96	5.70	0.74
Abdominal zone	4.25	4.82	0.57
Urogenital system	7.00	8.64	1.64
Urogenital system	7.41	9.70	2.29
Kidneys	6.58	7.57	0.99
Nervous system	4.29	5.11	0.82
Immune system	4.18	4.39	0.21

After four weeks of intervention, energy levels across a wide range of organ systems showed notable improvements, as measured in Joules ×10⁻². Key areas of improvement were observed in the cardiovascular system, with energy in cerebral zone vessels rising dramatically from 1.17 to 4.80 (Δ = 3.63), coronary vessels increasing from 3.35 to 5.32 (Δ = 1.97), and the cardiovascular system overall increasing by up to 1.84 units. The urogenital system also showed strong gains, with one region rising from 7.41 to 9.70 (Δ = 2.29) and another from 7.00 to 8.64 (Δ = 1.64). Digestive organs such as the colon (transverse) and blind gut experienced significant increases of 1.94 and 1.57 units, respectively, while the gallbladder rose from 6.03 to 7.34 (Δ = 1.31).

Other improvements included the heart (3.62 to 4.71; Δ = 1.09), epiphysis (4.02 to 5.19; Δ = 1.17), liver (8.29 to 9.04; Δ = 0.75), and kidneys (6.58 to 7.57; Δ = 0.99). Enhancements were also seen in the respiratory system (6.57 to 7.52), musculoskeletal system (6.69 to 7.25), and nervous system (4.29 to 5.11). Overall, 48 out of 51 measured regions showed increased energy levels, with only minor decreases in the ileum (Δ = -1.77) and spine – thorax zone (Δ = -0.28). These widespread and consistent energy gains suggest a comprehensive enhancement of systemic physiological function following the intervention.

Discussion

The present study demonstrates that non-invasive biophoton therapy is associated with measurable improvements in cognitive function, brain energy balance, vascular health, and quality of life in individuals with Alzheimer's Disease (AD). Using a multimodal suite of objective technologies, this investigation validates that biophoton exposure contributes to neurocognitive restoration through mechanisms that appear to involve both electrophysiological and energetic regulation.

Neurophysiological data from quantitative EEG (qEEG) and Event-Related Potentials (ERP) revealed improvements in cortical function, attention, and processing speed after biophoton therapy. In particular, the reduction in theta/beta ratios and N400 ERP latency, along with normalization of frontal alpha asymmetry, are consistent with enhanced cognitive control and executive functioning [10,11]. These biomarkers have been well-established in literature as sensitive indicators of attentional deficits and cognitive decline in AD patients [12,13]. Their reversal within a 2–4-week treatment period underscores the potential of biophoton therapy to influence the brain's electrophysiological architecture in clinically meaningful ways.

Concurrently, the 3D Non-Linear Scanning Diagnostics (3D-NLS) provided a unique energetic mapping of brain function, highlighting a significant reduction in “nidus of defeat” markers—focal areas of energetic blockage associated with dysfunction—and an increase in adaptive compensatory responses. These findings support the hypothesis that biophoton exposure enhances the body's self-regulatory capacity and neuro-energetic integration [14,15]. The complete resolution of pathologic energy zones in some patients aligns with prior research suggesting that low-level electromagnetic fields can stimulate mitochondrial activity, reduce oxidative stress, and support cellular repair [15].

Bio-Well GDV Camera results in further validated improvements in systemic energy coherence. Participants showed greater energy symmetry and reduced physiological fragmentation after therapy. Given the documented association between energetic disorganization and stress-related neurodegeneration, this shift may reflect deeper improvements in autonomic regulation and resilience [5,16].

The vascular improvements observed via the FALCON/QUAD Express Doppler ultrasound system—including enhanced cerebral perfusion and reduced arterial stiffness—suggest that biophoton therapy may positively influence neurovascular coupling. Since impaired cerebral blood flow and endothelial dysfunction are early contributors to cognitive impairment in AD, these changes may support improved oxygen and nutrient delivery, thereby promoting neuronal function [17]. The observations here were consistent to the improved blood quality and fluidity after biophoton therapy for treating the other patients [20-23].

Self-reported outcomes complemented these objective findings. Patients demonstrated marked improvements in Alzheimer's Questionnaire (AQ) scores, particularly in memory, verbal clarity, and emotional reactivity. Moreover, quality of life (SF-36) domains such as vitality, emotional role functioning, and social engagement improved over 80% of the cohort. These subjective enhancements reinforce the clinical relevance of the physiological changes observed and highlight the patient-centered benefits of biophoton intervention.

Strong biophoton generators provided by Tesla BioHealing Inc. have previously demonstrated therapeutic potential in several important neurodegenerative conditions, including chronic stroke, Parkinson's disease, and traumatic brain injury, where measurable improvements in neurological function, pain reduction, and quality of life were observed. [11, 18-34]. These outcomes are supported by objective biomarkers such as quantitative EEG normalization, improved cerebral blood flow, and enhanced energy field coherence. Building on this foundation, the present study aims to extend the therapeutic application of biophoton technology to Alzheimer's disease, exploring its ability to restore cognitive function, emotional regulation, and neuroenergetic balance in this population. Through a rigorous, multimodal evaluation framework, this research contributes to the growing body of evidence supporting biophoton therapy as a novel, non-invasive intervention for neurodegenerative disorders.

Taken together, this multi-layered evidence suggests that biophoton therapy holds promise as a novel, non-invasive modality capable of addressing multiple pathophysiological dimensions of Alzheimer's disease. It activates measurable changes in brain function, energy coherence, vascular health, and behavioral symptoms. Future randomized controlled trials are warranted to confirm these results and investigate the underlying mechanisms of action, including potential modulation of mitochondrial function, neuroinflammation, and synaptic plasticity.

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