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Biophoton Quantum Therapy to Treat Advanced Glaucoma: A Novel Non-Invasive Approach for Ocular Neuroprotection

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ABSTRACT

Background: Advanced glaucoma remains a major cause of irreversible vision loss, particularly in patients who fail to respond to maximal medical and surgical interventions. Novel non-invasive therapies are urgently needed to address underlying neurodegenerative processes beyond intraocular pressure (IOP) control.

Methods: This study evaluated the therapeutic potential of Automatic Biophoton Generators (ABGs)—quantum devices that emit biologically active trans-metal biophotons within the 500–1000 nm range. ABGs were characterized using four independent detection systems confirming continuous, power-free photon emission through metal enclosures. Three patients with advanced open-angle glaucoma and persistently elevated IOP despite standard care were treated adjunctively with Tesla BioHealer ABGs for 8 hours daily over four weeks, without altering their existing treatment regimens.

Results: All patients demonstrated clinically significant IOP reductions (3–5 mm Hg) after the intervention period. Optical coherence tomography (OCT) findings remained stable, and no adverse effects were reported. Patients also noted subjective improvements in visual clarity. The ABG devices emitted red and near-infrared photons with a peak wavelength at 630 nm and maintained stable output for over three years.

Conclusions: Biophoton therapy using ABGs may represent a safe, non-invasive adjunctive treatment for advanced glaucoma by enhancing ocular bioenergetics and supporting neuroprotection. Larger controlled studies are warranted to validate these preliminary findings and explore long-term efficacy.

Keywords: Biophoton Therapy; Glaucoma; Intraocular Pressure; Neuroprotection; Photobiomodulation; Quantum Medicine; Tesla BioHealer; Automatic Biophoton Generator

Introduction

Glaucoma is a leading cause of irreversible blindness worldwide, affecting over 76 million individuals and projected to impact more than 111 million by 2040 [1]. Characterized by progressive degeneration of the optic nerve and the loss of retinal ganglion cells, glaucoma is commonly—but not exclusively—associated with elevated intraocular pressure (IOP). While early-stage disease may be managed effectively with pharmacological or surgical intervention, patients with advanced glaucoma often experience disease progression despite receiving maximum tolerated medical therapy and undergoing procedures such as laser trabeculoplasty, canaloplasty, or trabeculectomy [2-4]. Conventional therapies are designed to lower IOP either by reducing aqueous humor production or enhancing its outflow via the trabecular meshwork or uveoscleral pathway. However, these approaches do not address the underlying neurodegenerative and metabolic processes driving optic nerve damage, such as mitochondrial dysfunction, oxidative stress, and impaired cellular energetics. For patients with treatment-resistant glaucoma, the lack of effective alternatives underscores an urgent need for novel therapies that extend beyond pressure-lowering mechanisms to provide neuroprotection and preserve residual visual function [5-8].

Emerging evidence has identified biophotons—ultraweak photon emissions in the 200–1200 nm spectrum generated by living cells—as mediators of intercellular communication, mitochondrial regulation, and redox homeostasis. In metabolically active ocular tissues, these biophotons may contribute to visual signaling and intraocular regulation. Importantly, glaucoma has been linked to impaired mitochondrial activity and increased oxidative stress within retinal ganglion cells, suggesting that biophotonic modulation could offer therapeutic benefit [9-13]. While natural biophoton emissions are subtle, recent technological advancements have led to the development of Automatic Biophoton Generators (ABGs)—engineered devices that emit high-density, biologically relevant photons in the red to near-infrared range (500–1000 nm). Tesla BioHealing® ABGs require no external power source and have demonstrated emission stability over three years. These devices emit structured photonic fields at intensities approximately one million times greater than endogenous biophoton levels, enabling sustained, non-invasive exposure capable of influencing cellular energetics [13].

Clinical and real-world data from tens of thousands of users suggest that ABGs may provide therapeutic benefit in a range of chronic and neurodegenerative conditions, including stroke, traumatic brain injury, and Parkinson's disease, with no reported adverse effects. Given the overlap in pathophysiological mechanisms between these diseases and advanced glaucoma—particularly mitochondrial compromise and neuroinflammation—biophoton therapy may represent a promising new modality for ocular neuroprotection. This study investigates the clinical impact of Tesla BioHealer ABGs on patients with advanced open-angle glaucoma unresponsive to conventional treatments. Specifically, we examine whether continuous biophoton exposure over a four-week period can reduce IOP and stabilize visual function when used adjunctively with existing medical therapy.

Materials and Methods

Device Description: Automatic Biophoton Generators (ABGs)

The Automatic Biophoton Generators (ABGs) used in this study are proprietary medical-grade devices developed by Tesla BioHealing®, engineered to emit biologically active photonic emissions within the red to near-infrared spectrum (500–1000 nm). Each unit consists of a solid-state quantum energy matrix encased within biocompatible stainless steel or aluminum containers, available in cylindrical or rectangular geometries. These devices are designed for consumer use, requiring no external power supply or activation mechanisms.

The devices weigh between 500 and 2700 grams and are equipped with a protective silicone sleeve to ensure safe and durable application during daily use. The photon emissions are self-sustaining, generated continuously for at least three years under ambient conditions without external input, including electricity or light exposure.

Emission Characterization

Photon emission from the ABGs was assessed using four highly sensitive instruments:

1) **Multispectral Imaging System (MIRA):** A digital video camera system capable of capturing and analyzing UV-visible-NIR emissions. MIRA was used to detect trans-metal photon fields and visualize their distribution across spatial and temporal domains.

2) **Single-Photon Counter (Thorlabs):** This detector was employed to confirm consistent low-level photon emission across multiple batches over a four-year production window. The method followed established protocols for biophoton quantification in the visible spectrum.

3) **Spectrophotometers (Horiba Duetta and iHR320):** These instruments measured the spectral distribution and peak wavelength of emissions from different ABG formulations. ABG-O emitted photons within the 500–670 nm range, while ABG-alpha extended up to 1000 nm, with both peaking near 630 nm.

4) **Life Force Meter (Canada):** A preliminary energetic assessment tool used to detect gross photon output and field formation in three-dimensional space, though not used for spectral resolution.

Clinical Protocol

A pilot clinical case series was conducted involving three patients with advanced open-angle glaucoma who exhibited persistently elevated intraocular pressure (IOP) despite maximal medical and/or surgical treatment. The study aimed to evaluate whether adjunctive biophoton exposure using Tesla BioHealer devices could improve IOP control and stabilize disease progression. Each participant was provided with a Tesla BioHealer for Adults and instructed to position the device within a 3-foot radius during sleep (≥8 hours per night) for 28 consecutive days. No changes were made to existing medications or clinical routines. Devices were used passively in the home environment. Baseline and post-treatment assessments included:

- **Intraocular Pressure (IOP):** Measured using Goldmann applanation tonometry.
- **Optical Coherence Tomography (OCT):** Used to evaluate structural stability of the optic nerve head and retinal nerve fiber layer.
- **Visual Acuity and Visual Field Tests:** Performed as part of routine glaucoma monitoring.
- **Subjective Reports:** Patients were interviewed regarding perceived changes in vision, comfort, or symptoms.

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Real-World Evidence

The voluntarily reported real-world evidence by real users was collected, summarized and tabulated.

Ethical Considerations

This interventional study was conducted by a physician following the ICH Guideline. Informed consent was obtained from all participants prior to device use. No adverse events or safety concerns were reported throughout the study period.

Results

Characterization of Biophoton Emission from ABG Devices

Automatic Biophoton Generators (ABGs) were evaluated for their photonic emission properties using four independent instruments. Photon emissions from sealed metal devices were measured using the MIRA multispectral imaging system, Thorlabs photon counters, and Horiba Duetta/iHR320 spectrometers. Key findings are summarized as follows:

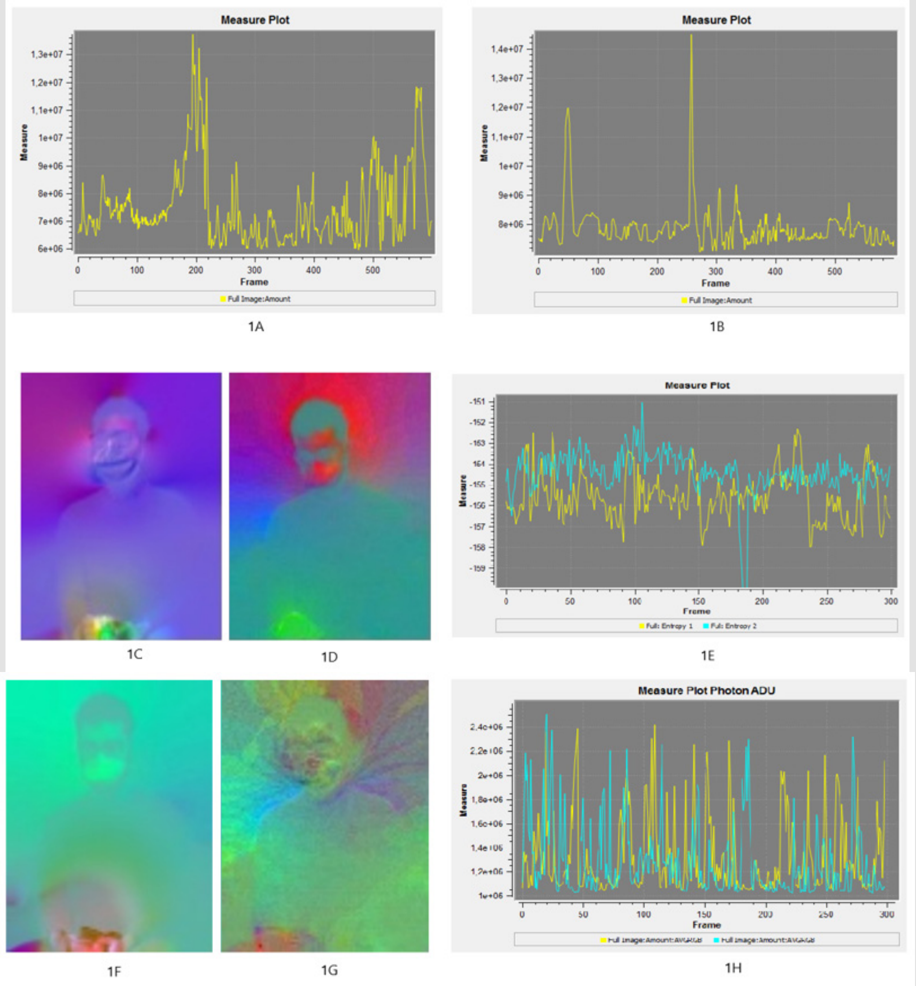


Figure 1: Biophotons Detected from Two Automatic Biophoton Generators.

- 1A: ABG-O, formulated using the original composition, emits photons measured within a 100×100 pixel region of interest (ROI) (600×600 microns) in Analog-to-Digital Units (ADU) was 7 million.
- 1B: ABG-R, which includes rubber powder as an additional ingredient while maintaining the same total weight as ABG-O, emits photons in ADU was 8 million.
- 1C: Baseline brightness of a human image as detected by the MIRA device.
- 1D: Increased brightness of a human image detected by the MIRA device 10 minutes after using ABG-O.
- 1E: Yellow curve: Biophoton emission detected at Baseline from the same adult as in 1C. 1E. Blue curve: Biophoton emission detected 10 minutes after using ABG-O, from the same adult as in 1D.
- 1F: Brightness of a human image detected by the MIRA device 10 minutes after using ABG-R.
- 1G: Brightness of a human image detected by the MIRA device 30 minutes after using ABG-R.
- 1H: Yellow curve: Biophoton emission detected 10 minutes after using ABG-R, from the same adult as in 1F. 1H. Blue curve: Biophoton emission detected 30 minutes after using ABG-R, from the same adult as in 1G.

- **Trans-Metal Emission Verification:** Despite being enclosed in medical-grade stainless steel or aluminum containers, biophoton emissions penetrated the metal walls, as confirmed by the MIRA imaging device. Devices labeled ABG-O and ABG-R emitted photons with average frequencies of 6.08 Hz and 7.44 Hz, respectively (Figures 1A &1B), with ABG-R exhibiting a stronger signal.

- **Biofield Interaction with Human Subjects:** In two blinded human experiments, significant increases in biophoton emission were detected in subjects' body images 10–30 minutes after holding ABG devices. The signal intensities were elevated compared to baseline (Figures 1C–1H), suggesting bioenergetic interactions between ABGs and human tissues.

- **Toroidal Energy Field Detection:** Torsional photonic field emissions surrounding ABG devices were detected and visualized via MIRA analysis (Figures 2A–2F). ABG-R demonstrated a higher spectral intensity and a pronounced red halo, consistent with elevated energy output relative to ABG-O.

- **Emission Stability:** Single-photon counting over a four-year span confirmed batch-to-batch reproducibility and long-term emission stability of the ABG devices. No significant degradation in output was observed across multiple device lots (Figure 3).

- **Spectral Range and Peak Wavelength:** ABG devices emitted continuous photon fields spanning 500–1000 nm, with a consistent peak at 630 nm, as shown in Figures 4A–4D. These emissions fall within the red to near-infrared spectrum, corresponding to the biological photonic window relevant for photobiomodulation.

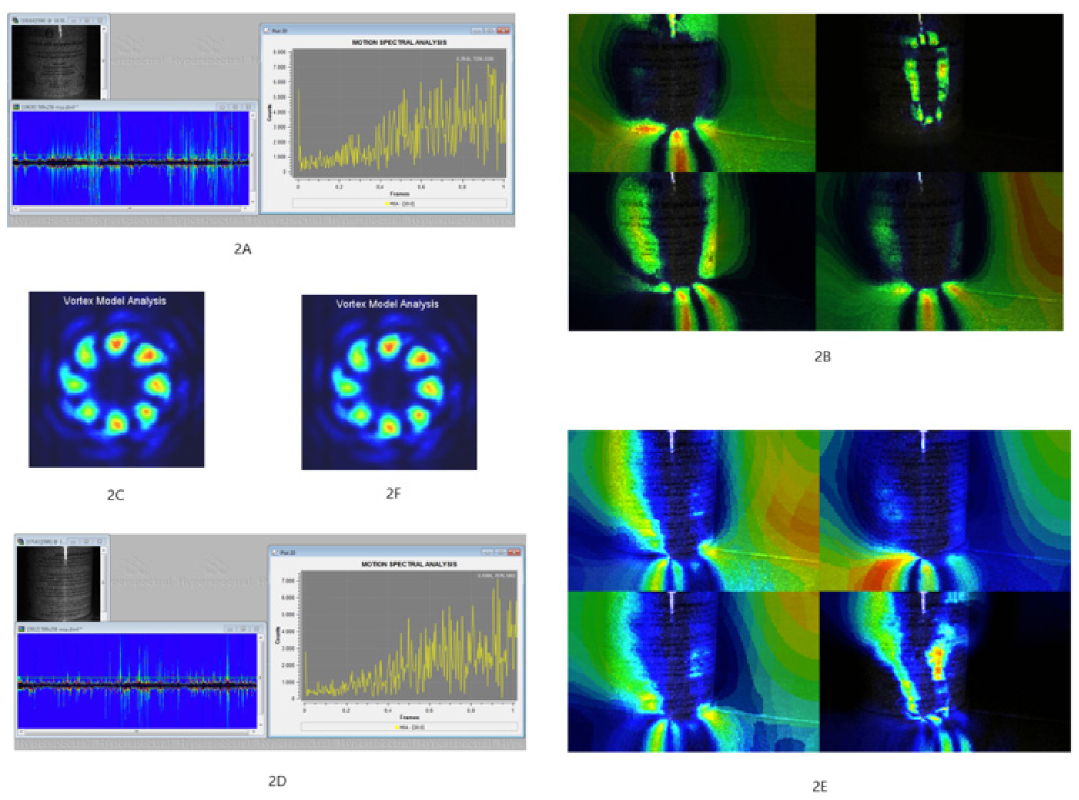
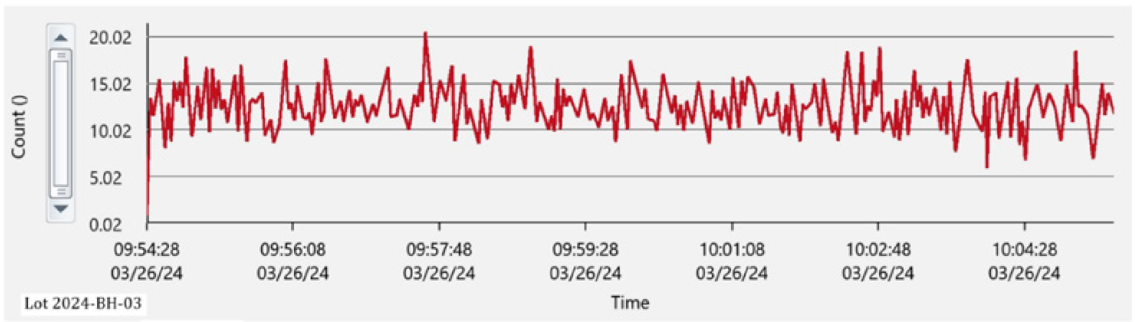
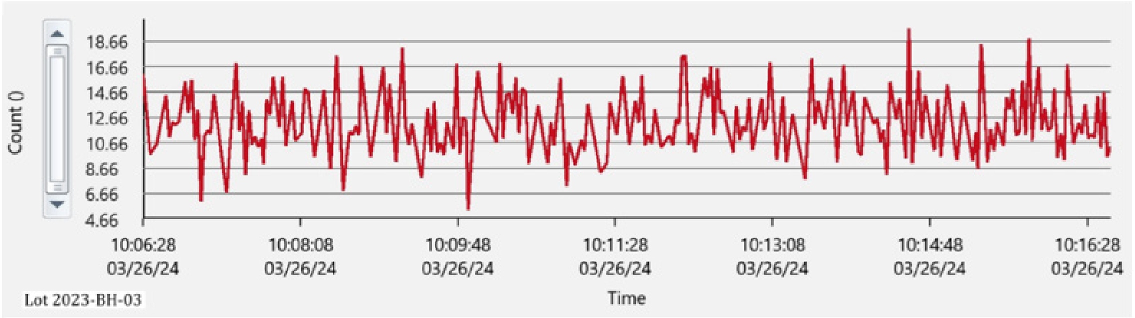


Figure 2: Detection of Biophotons and Toroidal Energy Fields Produced by Two Automatic Biophoton Generators.

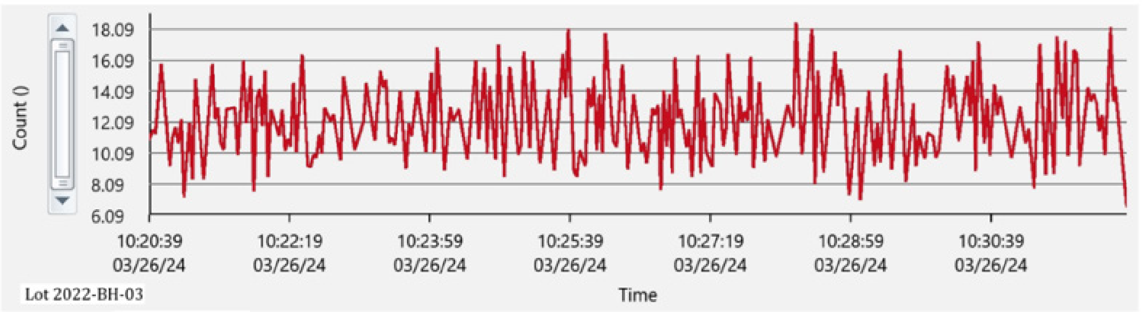
- 2A: ABG-O, formulated using the original composition, emits photons within a medium vibrational spectrum, peaking at 6.08 Hz.
- 2B: Using the MIRA device, four instances of torsional field emissions from ABG-O were recorded.
- 2C: Analytical model algorithm for the emitted field vortex emission of ABG-O.
- 2D: ABG-R, which incorporates rubber powder as an additional ingredient while maintaining the same total weight as ABG-O, emits photons within a medium vibrational spectrum with greater coherence in emission compared to ABG-O, peaking at 7.44 Hz.
- 2E: Using the MIRA device, four instances of torsional field emissions from ABG-R were recorded. A higher presence of red in the recorded data suggests a stronger emission magnitude, which may indicate higher energy output from ABG-R compared to ABG-O.
- 2F: Analytical model algorithm for the emitted field vortex emission of ABG-R, following the same methodology as applied to ABG-O.



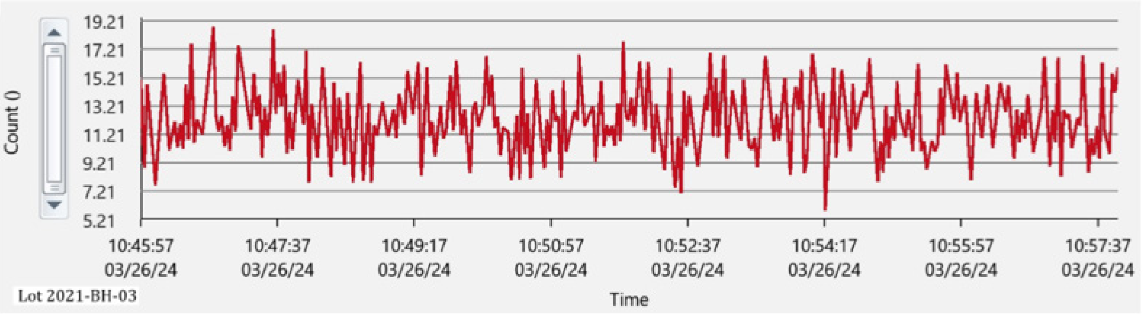
3D Freshly Made



3C 12 Months



3B 24 Months



3A. 36 Months

Figure 3: Shelf-Life Assessment of Automatic Biophoton Generators. Four batches of the same ABG-R were produced in March of 2021, 2022, 2023, and 2024. Photon emissions from each batch were measured using a single photon counter from Thorlabs. The minimum, mean, and maximum photon counts showed no significant differences across the four batches, indicating product stability. These findings confirm that the ABG-R remains stable for at least three years without any external power supply.

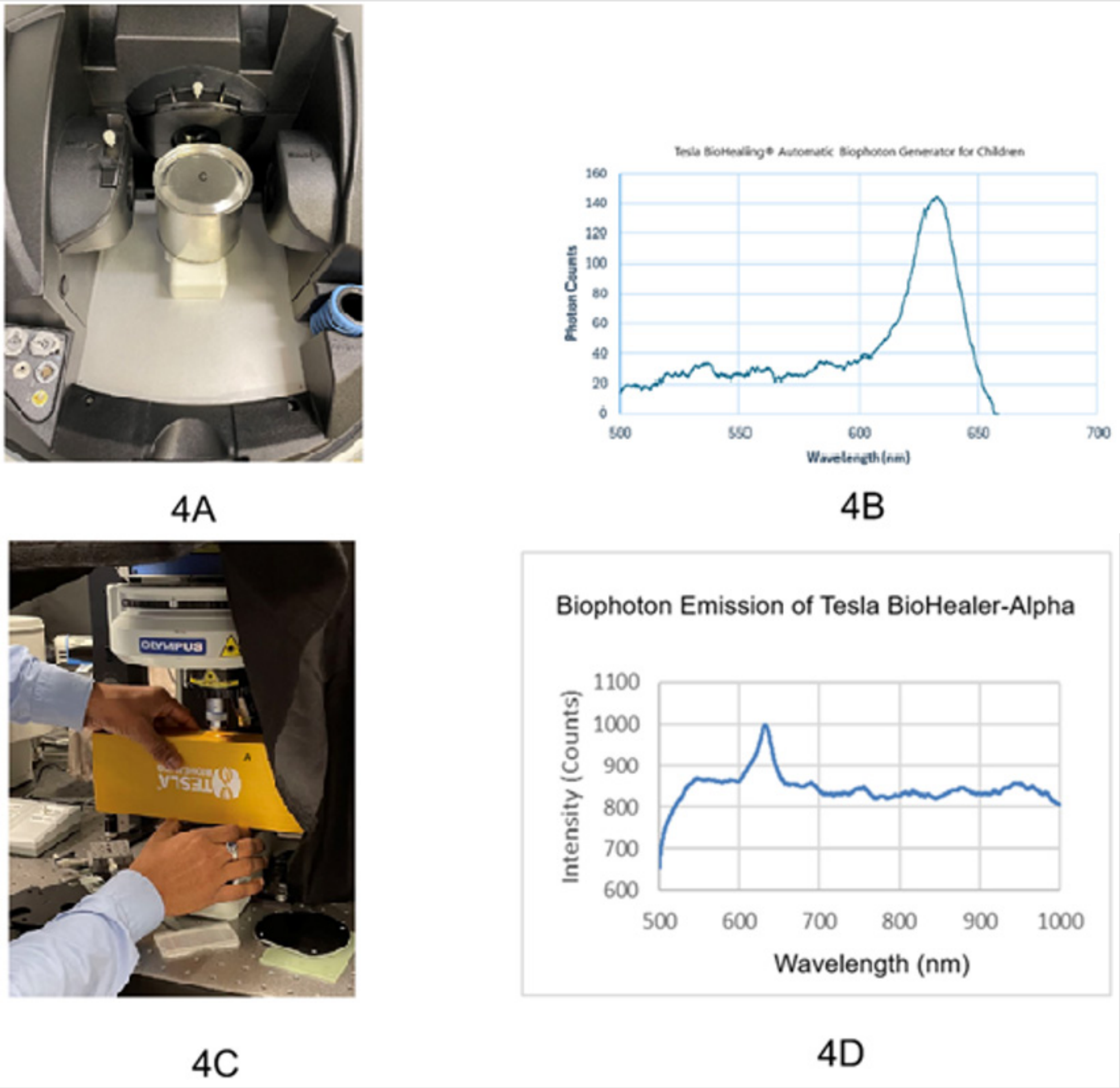


Figure 4: Wavelength Measurement of Two Automatic Biophoton Generators. ABG-O was loaded inside of Horiba Duetta Imaging Spectrometer (1A) for analysis. ABG-Alpha and ABG-O were loaded into Horiba iHR320 Imaging Spectrometer (4C) for analysis (4C, did not show ABG-O). The wavelengths of the photons generated by ABG-O were within the range of from 500 to 670 nm with a peak at 630 nm (1B). ABG-Alpha has its wavelength range from 500 to 1000 nm with a peak at 630 nm (4D). Both devices emit biophotons inside of the metal container, these photons can penetrate the metal wall.

Clinical Evaluation of Advanced Glaucoma Patients

Three patients with medically refractory advanced open-angle glaucoma were enrolled in a pilot case series. Each used a Tesla BioHealer ABG device nightly (≥8 hours) for 28 days while continuing their standard treatment regimens. Intraocular pressure (IOP) measurements and optical coherence tomography (OCT) imaging were performed before and after the intervention. Results are summarized below:

- **Case 1:** A 63-year-old White female displayed a long-standing history of open-angle glaucoma on maximum medical therapy, including three anti-glaucoma medications and Diamox sequels orally. She had undergone a canaloplasty surgical procedure in both eyes 1 year prior with a significant decrease in intraocular pressure and was found to have progressively increased pressure in both eyes 6 months post-op. Despite being placed on maximum medical therapy, the patient continued to have uncontrolled IOP in the 19-20 mm Hg range in both eyes. The desired range was determined to be 15 mm Hg or less due to her degree of optic nerve head damage. The patient was given a Tesla BioHealer for Adults and instructed to use it for at least 8 hours daily by placing it 3 feet or less away from her as recommended by Tella BioHealing, Inc. This would be a standard treatment regarding the unit's radius of effective energy dispersion. After 4 weeks of use, the patient returned for a follow-up visit. Her intraocular pressure readings were OD 14 mm Hg and OS 15 mm Hg. As noted above, the patient was kept on maximum medical therapy and would return for a follow-up in 3 months. Her optical coherence tomography scan (OCT) and Humphrey visual field and visual acuity tests remained unchanged. However, the patient reported experiencing or feeling that her vision had improved.

- **Case 2:** A 72-year-old Hispanic male patient with a long-standing history of open-angle glaucoma in both eyes and significant optic nerve head damage of 0.8 c/d was found to have uncontrolled IOPs in the 18-19 mm Hg range on maximum medical therapy, including four eye drop medications and bilateral SLT (laser) treatments. The preferred IOP for his degree of ONH damage was determined to be 16 mm Hg or less. Due to his uncontrolled IOPs and the progression of nerve cell layer damage measured by OCT, the patient was advised to consider canaloplasty surgery in both eyes. However, as an alternative treatment method was explored, he was given a Tesla BioHealer for Adults, as in Case 1, and the exact instructions for usage. After 4 weeks of use, the patient returned for a follow-up visit, and his intraocular pressure readings were OD 16 mm Hg and OS 15 mm Hg. The patient was told to continue using the Tesla BioHealing unit, in that the ideal IOP had been achieved in both eyes, and surgery was postponed. The OCT was unchanged.

- **Case 3:** A 75-year-old Hispanic female patient with a history of advanced open-angle glaucoma in her only visually functional eye was found to have highly uncontrolled IOPs on maximum medical therapy, including four eye drop medications and Diamox sequels. The patient had previously undergone cataract surgery and had a trabeculectomy 4 years prior. The patient's IOP was uncontrolled in the 21-22 mm Hg range for her degree of ONH damage, which was 0.75 c/d. A progression of central visual loss was noted at the 20/50 level. Her OCT showed a progression of nerve fiber layer loss. The patient was provided with a Tesla BioHealer for Adults, as were the patients in Cases 1 and 2. She was given the exact instructions for usage. After 4 weeks, the patient returned for a follow-up visit, and her IOP was found to be 17 mm Hg, which was only 1 mm Hg above the ideal pre-determined value. At the same time, it was still significantly lower and clinically better for her degree of optic nerve damage. Her OCT was unchanged, and she was advised to continue her medical therapy and use the Tesla BioHealing unit as indicated. Finally, she was advised to return for a follow-up in 2 months.

Real-World Evidence of Vision Improvements

After ABGs were used for a few days to several months, numerous users reported their improvement in the eye function. Table 1 summarized the vision change based on the real-world evidence of Using ABGs.

Table 1: Using ABGs to Improve Vision in 16 Humans and 2 Dogs.

Case Initial	Major Illness	Vision Change	Other Key Change
SG	Traumatic brain injury	Blurred vision was significantly better within a month	able to walk normally again without a limp within a month
BB	Hydrocephalus	Vision is much better within 2 months	Significant improvement in speech within 2 months
CS	Seizure	No longer have vision or balance issue	Seizure free for 7 weeks
MW	Injured eye with a puncture wound	Double vision effect was 90% gone within 1 week	Other ghost vision effects were gone within 1 week
JB	Sleep deficiency	Vision has improved within 1 week	No trouble sleeping 8 hours a night within 1 week
AM	Radiation in left eye for ocular melanoma	Was able to read two big letters within 3 months	Restore the vision in the damaged eye within 3 months.
BF	Traumatic brain Injury eyes were cockeyed	Vision straightened out after 1 hour stay in a MedBed Center	No other report
JO	Serious Traumatic brain injury lost peripheral vision.	Peripheral vision is back completely within 1 month	Memory recall is noticeably better every day within 1 month
KK	A serious injury caused total loss of vision in one eye	Began noticing vision returning after visiting a MedBed Center	Recovery of retinal detachment
KD	COVID-19 and was in a coma	Doctor said the life came back into the patient's eyes after 14 days	Completely off the ventilator and could control her own bodily functions after 14 days
RD	Blood clot in the right eye	The clot was gone within 4 weeks.	His dog had a very soft Esophagus and choked a lot. It healed in 4 weeks.
JKA	Severe chronic pain	Eyesight has improved	Sleep better, pain disappeared

BM	Chronic stroke	Improved eyes, hearing, bladder, and lower back within 4 weeks	The left side of the body moved better within 4 weeks.
MN	Diabetes	Eye improved 2 weeks	Insulin cut in half 2 weeks
JAN	Eye inflammation	Eye pressure released 1 day after use	Significant increase in energy throughout the body.
NT	89 years with diabetes	Can read the time on the wall clock 1 month after use	Both eyes got better 1 month after use
Dogs			
TS	16-years old Granny "Min Pin" dog could not see or hear	Cataracts were clearing and regained hearing after 2 weeks	Could jump on the sofa again.
RL	14-Year-old toy poodle had a larger tumor impacted eyes	Both eyes were normal after 2 weeks	Tumor disappeared and the old dog changed to a puppy status after 2 weeks

Discussion

Advanced glaucoma, particularly when unresponsive to maximal medical and surgical interventions, represents a critical therapeutic frontier. In such refractory cases, elevated intraocular pressure (IOP) continues to pose a risk of irreversible optic nerve damage and progressive visual field loss [2-4]. This case series demonstrates that biophoton therapy using Tesla BioHealer Automatic Biophoton Generators (ABGs) may offer a novel, non-invasive adjunctive treatment modality for these difficult-to-treat patients. The core mechanism of action underlying ABG therapy appears to involve quantum biophoton emissions in the 500–1000 nm spectrum—wavelengths associated with mitochondrial activation, oxidative stress reduction, and cellular regeneration. These emissions, validated through four independent instruments, differ fundamentally from traditional red or near-infrared light therapies by demonstrating trans-metal penetration and sustained emission without the need for an external energy source [9-12].

These properties uniquely position ABGs to deliver continuous, passive photonic stimulation to ocular tissues. All three patients in this study demonstrated clinically significant reductions in IOP (3–5 mm Hg) after a 4-week period of nightly exposure to ABGs. Notably, these improvements occurred without alterations to the patients' existing treatment regimens. Optical coherence tomography (OCT) findings remained stable across all cases, and no adverse effects were reported. Subjectively, patients also noted visual clarity improvements, suggesting that biophoton exposure may enhance retinal function or neuro-visual perception. These results align with broader observational data from over 40,000 users of Tesla BioHealing devices, who report benefits in neurological, inflammatory, and degenerative conditions. In the context of glaucoma—where mitochondrial dysfunction, impaired cellular energetics, and oxidative damage contribute to retinal ganglion cell death—biophoton therapy presents a compelling approach. By enhancing ATP production and supporting trabecular meshwork function, this modality may augment both neuroprotection and IOP regulation [14-17].

Importantly, biophoton therapy is drug-free and non-invasive, making it especially valuable for elderly patients who may be poor surgical candidates or experience polypharmacy risks. Its integration as a supportive treatment could enable energetic stimulation during the entire rest periods with minimal burden on patients or caregivers. However, this pilot study is limited by its small sample size and lack of control group. Further mechanistic studies are needed to confirm the penetration, absorption, and intracellular effects of biophotons on ocular tissues. Additionally, randomized controlled trials (RCTs) with larger cohorts, longer durations, and validated ophthalmic endpoints—such as visual field progression, retinal nerve fiber layer thickness, and optic nerve head perfusion—are warranted to establish definitive clinical efficacy. In conclusion, this study provides promising early evidence that automatic biophoton generators may help lower IOP and support ocular health in advanced glaucoma patients unresponsive to standard therapy. These findings warrant broader clinical validation and position biophoton therapy as a potentially transformative adjunct in the management of neurodegenerative eye diseases.

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