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Research

Effects of Light Technology™ on Proprioception and Human Performance: A Pilot Study

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Abstract

This pilot study investigated the effects of Light Technology-treated wearable devices on human strength metrics. Thirty-two participants underwent a standardized 25–30-minute workout using Medex “selectorized” equipment to eliminate warm-up effects, followed by measurements on an ARX machine. Performance was assessed during a 10-second isometric leg press both without and with a Light Technology-treated shirt. Results demonstrated a statistically significant increase in maximum force generation (12.4%, $P<0.0005$) and maximum power output (9.7%, $P<0.0005$) when wearing the treated shirt. Non-parametric Kruskal-Wallis tests confirmed these findings ($P<0.0001$). The results suggest that specific light wave patterns incorporated into wearable devices may influence proprioceptive function, potentially through the interaction of biophotons with neural networks and the body's electromagnetic field. This study provides preliminary evidence that Light Technology wearables may enhance muscular performance, possibly by optimizing proprioceptive feedback and central nervous system integration. These findings have implications for athletic performance, rehabilitation, and general physical function, though further research is needed to fully elucidate the underlying mechanisms.

Keywords: Light Technology, proprioception, biophotons, strength enhancement, performance optimization, neural integration

Introduction

The role of proprioception in human physical performance is well-established in scientific literature. Proprioception can be defined as the cumulative neural input to the Central Nervous System (CNS) from specialized nerve endings called mechanoreceptors, located in joints, capsules, ligaments, muscles, tendons, and skin (Ribeiro & Oliveira, 2007). This sensory modality enables the perception of tension, movement, and joint position, contributing to automatic control of movement, balance, and joint stability (Riemann & Lephart, 2002).

Recent advances in the understanding of biophotons and biological electromagnetic fields have opened new avenues for enhancing proprioceptive function. Biophotons are coherent light emissions from biological systems, first recognized through the pioneering work of Alexander Gurwitsch and later expanded by researchers such as Popp et al. (1981, 1986). These coherent excitations may play crucial roles in cellular communication and biological regulation.

The concept of electromagnetic resonance in biological systems suggests that living organisms have the capacity to behave as electromagnetic resonators, trapping electromagnetic fields in the form of spatial energy patterns (Alexis, 2015). These resonant modes may serve as sources of long-range information capable of guiding biological pattern formation. Research by Cifra (2012) has proposed that internal electromagnetic fields of biological systems demonstrate coherence that significantly influences pattern formation within biological systems.

The first practical application of these principles was developed by Dr. Mark Metus in his Quantum Alignment Technique (QAT) (Metus, 2016). In his work, Dr. Metus described how specialized devices can affect proprioceptive function: "Wearing a set of light processed devices causes the nerve receptors embedded in your joints to function more efficiently. Your body uses the correct muscles even when spinal joints were not previously functioning optimally." These initial devices were further developed into wearable, light-processed garments.

Building on this foundation, Light Technology (Patent Application No. 63/758,726, "Biophotonic Pattern Recording System and Method"; Kenerson & Nazarov, 2025) was created as a methodology for capturing and applying specific wave patterns to influence biological functions. Light Technology represents the further evolution of earlier work in subtle energy research, focusing on the vibrational spectrum of visible light rather than on audio-frequency approaches used in Vital Force Technology developed by Dr. Yury Kronn (Kronn, 2022). This technology [which one?]utilizes light's non-linear interaction with matter to capture and transfer complex information patterns.

Purpose/Objective

The primary objective of this study was to determine the effects of Light Technology-treated wearable devices on human strength parameters. Specifically, we sought to investigate whether wearing a shirt treated with specific light wave patterns would influence force production and power output during a standardized strength assessment. A secondary aim was to explore potential mechanisms behind any observed effects, particularly regarding the role of proprioception and neurological integration.

Materials

The following materials and equipment were utilized in this study:

1. **Light Technology-treated shirts**: Garments processed using proprietary Light Technology to incorporate specific wave patterns.

2. **Medex selectorized exercise equipment**: Used for the standardized workout protocol to eliminate warm-up effects as a confounding variable.

3. **ARX Alpha machine**: Specialized equipment that provides precise measurements of force and power output during isometric contractions.

Method/Procedure

Participants
Thirty-two healthy adults (17 males, 15 females) voluntarily participated in this study. All participants provided informed consent prior to participation.

Testing Protocol
The study protocol consisted of the following procedures:

1. All participants completed a standardized 25–30-minute vigorous workout using Medex selectorized equipment. This preliminary exercise was designed to eliminate the warm-up effect as a potential confounding variable, following established protocols for strength assessment (Kraemer et al., 2006).

2. Following the workout, participants performed a 10-second isometric leg press on an ARX Alpha machine with their eyes closed to prevent them from seeing the display screen. This constituted control measurement, with the machine recording maximum force and power output. ARX technology employs motorized resistance that provides adaptive force measurement, allowing for precise quantification of performance metrics (McMaster et al., 2014).

3. Participants then donned a Light Technology-treated shirt and repeated the 10-second isometric leg press test. The same parameters were recorded for comparison. The testing methodology for proprioceptive effects follows similar protocols to those established in previous studies (Han et al., 2016).

Data Analysis
The primary measures were:
1. Maximum force production (measured in foot-pounds)
2. Maximum power output (derived from force and time measurements)

Statistical analysis included paired t-tests to assess differences between control and experimental conditions. Due to potential non-normal distribution of the data, non-parametric Kruskal-Wallis tests were also conducted, with outcomes classified as either increase/decrease or increase/decrease/no change (defined as <5% change).

Results

Analysis of the data revealed statistically significant improvements in both force and power metrics when participants wore the Light Technology-treated shirt compared to the control condition.

The average change in maximum force across all participants increased by 12.4% when wearing the treated shirt compared to the control condition ($P<0.0005$). Similarly,

average maximum power output increased by 9.7% ($P<0.0005$).

Non-parametric analysis using the Kruskal-Walli's test confirmed these findings, yielding P values of <0.0001 for both force and power measurements, whether classified as simple increase/decrease or when incorporating a no-change category (defined as <5% change).

Individual participant data demonstrated variability in response, with changes in force ranging from minimal to substantial increases. For instance, one representative participant (identified as A3 in the raw data) displayed a 29.6% increase in force (from 809.6 ft/lb. to 1150 ft/lb.) and a 38.6% increase in maximum power when wearing the treated shirt.

Conclusion

This pilot study provides preliminary evidence that Light Technology-treated wearable devices may significantly enhance muscular force production and power output. The consistent improvement across participants suggests a genuine physiological effect rather than random variation or placebo responses.

The proposed mechanism for these effects centers on enhanced proprioception and neurological integration. Previous research has established that postural behavior relies on the integration of somatosensory, vestibular, and visual information (Horak, 2006). The Light Technology treatment may influence proprioceptive feedback through the interaction of specific wave patterns with the body's neural networks and electromagnetic field.

This hypothesis is supported by earlier observations using APDM technology, which demonstrated reduced coronal and sagittal sway when subjects wore similar Light Technology devices. Those findings, coupled with the current study's results, suggest improved central integration of proprioceptive input may be responsible for the observed performance enhancements.

The underlying physics potentially involves biophoton interaction with biological tissues. As proposed by Singh et al. (2019), there may exist unified geometric patterns hidden in the vibrational frequencies of biological components, particularly the brain, that influence information processing. The Light Technology treatment may resonate with and the optimization of these patterns.

While this study focused on a single test modality with immediate effects, the implications for future research and applications are substantial. Several promising directions for further investigation include:

1. **Longitudinal studies on athletic performance**: Extended research with diverse athlete populations could elucidate whether the acute enhancements observed in this study translate to long-term performance benefits across various sports and disciplines.

2. **Expanded movement analysis**: Future studies should incorporate multiple assessment methodologies beyond isometric strength, including dynamic movements, sport-specific actions, and functional movement patterns.

3. **Direct proprioception assessment**: Implementing specialized testing for proprioceptive function would strengthen the mechanistic understanding of how Light

Technology affects neural integration and sensory feedback.

4. **Application in rehabilitation settings**: Preliminary clinical observations suggest potential benefits for individuals with compromised proprioception. One case report documented restoration of motor function in a patient with hemiparesis following stroke who, after Light Technology treatment, regained the ability to simultaneously lift previously affected limbs and take backward steps, which had been impossible since the injury.

5. **Geriatric applications**: Given that fall risk in elderly populations correlates strongly with proprioceptive deficits, Light Technology wearables could potentially improve balance and stability. Initial observations indicate significant reduction in postural sway when using these devices, which could translate to decreased fall risk.

6. **Expanded populations**: Interestingly, preliminary observations suggest that Light Technology may benefit non-human subjects as well. A case report involving a canine with soft tissue injury to the shoulder showed approximately 90% recovery after brief exposure to the Light Technology treatment, suggesting broad biological applicability across species.

7. **Comparative effectiveness research**: Studies comparing Light Technology with existing proprio-ception-enhancing modalities (compression garments, taping techniques, etc.) would contextualize its clinical and performance value.

8. **Dosage and persistence studies**: Understanding the duration of effects, potential for accumulation with repeated use, and optimal application protocols would enhance practical implementation.

The potential applications of this technology extend beyond athletic performance enhancement to include:

- Rehabilitation after injury or neurological events;
- Improving physical function and reducing fall risk in aging populations;
- Optimizing movement mechanics for injury prevention;
- Addressing chronic pain conditions linked to proprioceptive dysfunction;
- Veterinary applications for injured or aging animals.

Limitations of this study include its pilot nature, the absence of placebo control, and the inability to directly measure proprioceptive changes. However, these limitations represent opportunities for more sophisticated research designs in future studies.

In conclusion, this study provides initial evidence that Light Technology-treated wearable devices may enhance muscular performance, potentially through improved proprioception and neurological integration. The simplicity of application combined with the magnitude of observed effects suggests that this technology warrants comprehensive investigation across multiple domains of human and animal performance and recovery.

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biophotonic pattern recording system patenting, and to Dr. Mark Metus for pioneering applications of this technology in clinical settings.

Conflict of Interest Statement

The author is involved in the development and application of Light Technology. This research was conducted as an independent investigation into the effects of this technology, with transparent reporting of results regardless of outcome.

Disclaimer

The information presented in this article is intended for research purposes only and should not be considered medical advice. The Light Technology described herein has not been evaluated by the Food and Drug Administration and is not intended to diagnose, treat, cure, or prevent any disease or medical condition. The results reported in this study are preliminary and require further validation through rigorous clinical trials. Any application of this technology should be done under appropriate professional supervision. The technology discussed does not replace conventional medical treatments, and individuals with health concerns should consult with qualified healthcare professionals.

Bio:
Dr. Igor Nazarov is the founder of MIG-Tech Lab, Inc. He holds a BS in Molecular Biophysics, an MS in Nuclear Physics and PhD in Chemical Physics from the Moscow Institute of Physics and Technology, USSR. Dr. Nazarov is an author of over thirty scientific publications and one book.

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