

Neurophysiology and Phenomenology of Floatation®

An Overview of Neuroscience Research by DavidHugh

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White Paper

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**DavidHugh's Floatation[®]
technology represents a paradigm
shift in wellness innovation,
enabling individuals to disconnect
from the outside world and
reconnect with a deeper self.**

Executive Summary

DavidHugh's Floatation® technology represents a paradigm shift in wellness innovation, enabling individuals to experience weightless motion, disconnect from the outside world and reconnect with a deeper self. The latest generation Floatation® technology pushes beyond what was previously possible by taking away all dampening and introducing an adjustable "floatation curve" for extraordinary balance.

This white paper explores the neurophysiological and phenomenological effects of the latest generation Floatation® technology, highlighting research conducted in both controlled laboratory and applied environments. Findings reveal unique interactions between set, setting, and conscious experience, demonstrating the technology's potential to induce deep mindfulness, heightened awareness, and enhanced cognitive and emotional states.

1. Introduction

1.1 Neurophysiology vs. Phenomenology

- **Neurophysiology:** The scientific study of the nervous system using third-person data (e.g., EEG, fMRI).
- **Phenomenology:** The study of subjective, first-person conscious experience, capturing the richness of perception and thought that cannot be fully reduced to physiological measurements.

Integrating both approaches is critical for understanding the effects of advanced wellness technologies on conscious experience such as Floatation® technology.

1.2 Floatation® Technology

The latest-generation Floatation® technology:

- Removes all friction and acceleration, allowing pure weightless motion.
- Incorporates an adjustable “floatation curve” to optimise balance and control of bodily inertia.
- Enables profound alterations in conscious experience depending on the user’s set (mindset) and setting (environment).

2. The Role of Set and Setting

Research in non-ordinary states of consciousness—such as meditation or psychedelic experiences—has consistently demonstrated that outcomes are strongly influenced by:

- **Set:** The emotional and psychological state of the individual.
- **Setting:** The surrounding environment in which the experience occurs.

Floatation® technology is similarly affected by these variables, influencing both neurophysiological and subjective outcomes.

3. Laboratory Research

3.1 Methodology

Participants underwent controlled testing in a neuroscience laboratory, including:

- Preparation that required mounting 28 electroencephalography (EEG) electrodes to the scalp.
- Cold pressor stress tests and salivary cortisol collection.
- Psychometric assessments.
- Exposure to three conditions:
 1. Floatation® Technology (Float)
 2. Floatation®-Locked Control (Fixed)
 3. Zero-Gravity Massage Chair (Massage)

3.2 Results

- Float and Fixed conditions produced significantly greater synchronised brain activity than the Massage condition.
- Theta/Alpha ratio, which is a key biomarker of deep mindfulness meditation, was significantly higher for Float and Fixed than Massage.
- Psychometric assessments indicated that Float significantly outperformed Fixed in inducing mindfulness of the body, mindfulness of the mind and total mindfulness.
- Maximal EEG changes occurred within the first 5–10 minutes of the session.
- There was no effect between conditions on salivary cortisol levels following the cold pressor test.

Interpretation: In a high-stress laboratory environment, Floatation® technology facilitates deep mindfulness meditation in individuals with no prior meditation experience.

4. Applied Research in Familiar Environments

4.1 Methodology

To simulate typical user scenarios:

- Short-duration sessions (15 minutes) in familiar settings.
- Minimal preparation: participants wore a two-channel dry EEG headband.
- Psychometric assessments
- Conditions: Floatation® technology vs control (conventional recliner chair) with and without DBM

4.2 Results

- Increased activity in high-frequency EEG bands, while slow frequencies decreased (statistical significance achieved within 5 minutes in pilot tests).
- Effects were enhanced by DavidHugh's proprietary Drone-Based Music.
- Observed trends mirror EEG patterns found in long-term Buddhist meditators.
- Control comparisons with a conventional recliner chair confirmed that the combination of effects, including increased right-hemisphere dominance, was unique to Floatation® technology.
- Compared to the conventional recliner chair, Floatation® technology produced significantly higher subjective ratings across the following categories of experience:
 - **Heightened States of Consciousness:** e.g. transcendental, novel, euphoric, enlightening.
 - **Boundless States of Consciousness:** e.g. mind wandering, timelessness, spontaneous thought.
 - **Equanimous States of Consciousness:** e.g. calming, being without thought.

Interpretation: In familiar, low-stress settings, Floatation® technology facilitates heightened conscious activity during deep relaxation, along with non-ordinary states that are potentially linked to hemispheric brain differences, in individuals with no prior meditation experience.

5. Conclusion

DavidHugh will continue to advance understanding of the effects of Floatation® technology. However, set and setting play an important role. In the neuroscience laboratory study, the stark environment and preparatory procedures may have created a need among participants to de-stress and relax. Under these conditions, Floatation® technology facilitated states consistent with deep mindfulness meditation. When the set and setting shifted to more familiar, low-stress environments, the experience changed markedly—Floatation® technology instead facilitated heightened conscious activity and transcendental states of awareness. Although beyond the scope of this research, anecdotal evidence further suggests that Floatation® technology can promote sleep in individuals with sleep disorders.

Overall, Floatation® technology offers profoundly personalised experiences that adapt to the user's immediate state, enabling transitions beyond ordinary consciousness in ways that are sympathetic to the individual's needs in that very moment.

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ABOUT US

DavidHugh represents a new category of wellness innovation. Founded in Cambridge by husband-and-wife duo Dr. Melody Chen and Dr. David Wickett, the company integrates design, biomechanics, and neuroscience to develop and manufacture technologies that advance human potential.

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