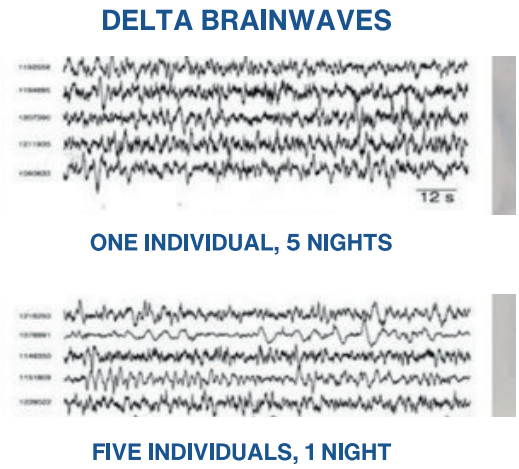
myWaves

NeuroAcoustic Transduction Technology

A Personalized, Drug-Free Approach for Insomnia and Sleep Optimization



Power of Personalized Sound Sequences (PSS)

Individuals produce a unique pattern of delta brainwaves during the deepest phase of sleep (N3).

Auditory interventions have been shown to:

Enhance heart rate variability [1]
Reduce cortical hyperarousal [2]
Synchronize slow brainwave dynamics [3]

HOW IT WORKS: *3 Steps to Personalized Sound Therapy*

Step 1: Sleep Data Collection

- Patient wears the Pebble device at home for one night
- Collects unfiltered, 2-channel EEG data (EDF format)

Step 2: Delta Wave Processing

- Detection of delta brainwave activity (0.5–4 Hz) during N3 sleep
- Generation of sound envelopes using Gaussian Fitting
- Creation of 3 personalized MP3 sound sequences

Brainwave Sound Sample

Step 3: The Patient Downloads Their Personalized Sound Sequences (PSS) for Nightly Listening

- Used 30 minutes before bedtime
- Includes a variety of personalized background sounds options tailored to individual preferences

Clinical Validation

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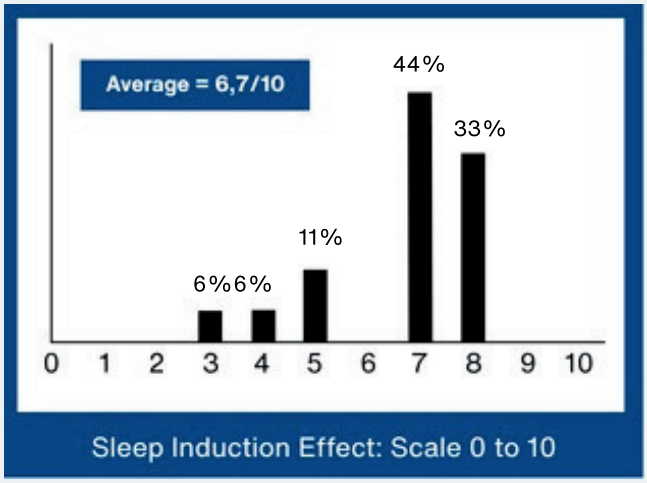
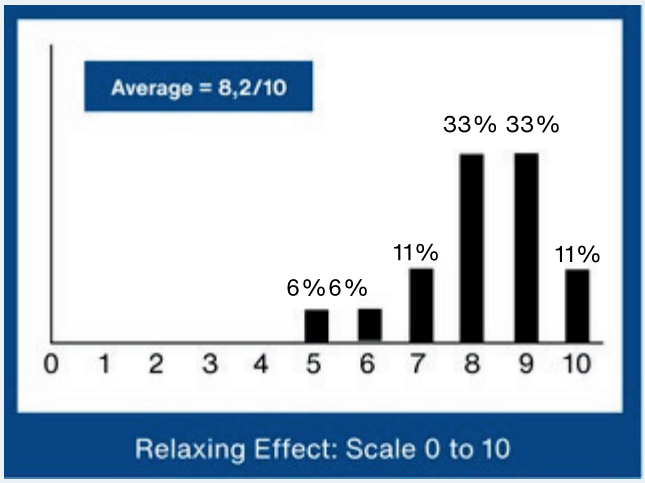
Early Validation in Healthy Volunteers (n = 36):[4]

- 82% reported a relaxation effect
- 67% reported sleep induction
- Randomized surrogate sequences = 0% sleep induction





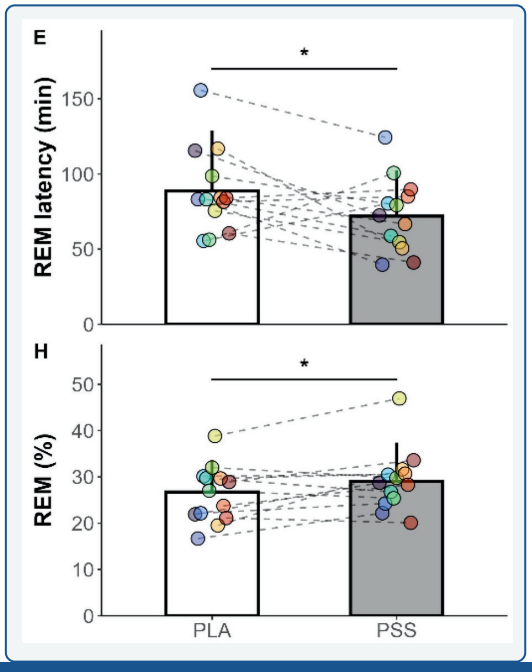
Insomnia Study (n = 13):[5]

Randomized, single-blind crossover design
compared PPS vs. placebo sounds over 3–5 nights

Outcomes:

- Total sleep time: +5%
- REM sleep: +10%
- REM latency: –18%
- Time to fall asleep: up to 40% Reduction

EDF: European Data Format;
EEG: Electroencephalography



*References **1**. Huwiler S, et al. Effects of auditory sleep modulation approaches on brain oscillatory and cardiovascular dynamics. Sleep 2022;45(9):zsac155. **2**. Bressler S, et al. A randomized controlled trial of alpha phase-locked auditory stimulation to treat symptoms of sleep onset insomnia. Sci Rep 2024;14(1):13039. doi: 10.1038/s41598-024-63385-1. **3**. Anderson A. Acoustic enhancement of slow wave sleep—timing and tone: "the details create the big picture". Sleep 2022;10:zsac191 https://doi.org/10.1093/sleep/zsac191. **4**. Data at myWaves – Computational Neuroscience. **5**. Aloulou A, et al. Sleep Medicine, in press, 2025 Listening to the sound of your own brain waves enhances sleep quality and quantity.*

Join Our Expanding Network of Clinical Researchers

Ongoing studies are investigating NeuroAcoustic Technology for: Chronic insomnia | COMISA (Co-Morbid Insomnia and Sleep apnea) | Sports and military performance | Infant sleep facilitation | Aging-related sleep disturbance

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