

Meditating faster? EEG of a meditation, without and with Q-Theta

EEG pilot study (single subject) — same destination, different departure

Level of evidence : Observed in-house (frontal EEG AF7+AF8, after excluding defective sensors) — pilot study, n = 1, two sessions, fixed order, non-blinded; preliminary signal, to be confirmed

Study type	Within-subject EEG pilot, two sessions (without vs with) — exploratory
Participant	One subject, two consecutive meditations the same evening
Measure	Muse EEG + Mind Monitor — frontal AF7+AF8 (only valid sensors)
Q circuit	Q-Theta (signature associated with the Schumann resonance, 7.83 Hz)
Conditions	Without Q-Theta (6:23 p.m.), then with Q-Theta (6:34 p.m.) — fixed order
Key marker	Beta/Alpha ratio (mental calm) · kinetics by session third
Status	Preliminary signal — not conclusive as is (fixed order, non-blinded)

Summary

Fourth EEG installment in the series: two consecutive meditations by one subject, without then with a Q-Theta circuit, Muse headset (frontals). First thing to say, because it conditions everything else: two of the four electrodes were defective; the analysis was entirely redone on the two valid frontal sensors (AF7+AF8), and the initial raw figures (“+2475%”) — pure sensor artifacts — are discarded. After cleaning, the signal is plausible and coherent: with Q-Theta, fast activity is lower (Beta -19%, Gamma -18%) and mental calm more marked (Beta/Alpha -22%). But the decisive reading qualifies it all: the difference comes mostly from a calmer start with Q-Theta — both sessions end at the same level. The angle is therefore not “deeper meditation” but “faster entry into the state.” Confounded by order (the with-Q-Theta session was the 2nd). Preliminary signal, not conclusive as is.

1. A quality alert, and its correction

First reflex: check signal quality. Just as well. The contact quality index never reaches “perfect” on the four electrodes, and above all two sensors are unusable:

- TP9: frozen at zero in the without-Q-Theta session, saturated in the with session — total asymmetry, comparison impossible.
- TP10: frozen at zero in both sessions — dead sensor.
- AF7 and AF8 (frontals): healthy and variable in both sessions — usable.

Averaging the four channels gave absurd increases (Theta +2475%, Gamma +2400%), entirely due to the corrupt TP9 sensor. The whole analysis was therefore redone on AF7+AF8 only. It is a degraded measure (two electrodes of four), but honest and comparable — and frontals are well suited to the cortical effects of meditation.

The raw “+2475%” figures must never be used: they are sensor artifacts, not a result. A study that publishes a spectacular figure it cannot stand behind is not a study.

2. Background and objective

You know the moment: you sit down to meditate, and the mind takes several minutes to quiet down. The real question may not be “meditate longer,” but “drop in faster.” We wanted to look at that with an instrument, not with intuition.

The circuit tested, Q-Theta, has a signature publicly associated with the Schumann resonance (7.83 Hz) — a slow register that falls within the Theta / low-Alpha EEG band. Hence the interest in tracking precisely these markers, and the Beta/Alpha ratio, a common index of mental calm.

3. Method

Protocol, read without indulgence:

- Subject: one subject, two consecutive meditations the same evening.
- Measure: Muse EEG (Mind Monitor), frontal electrodes AF7+AF8 — the only valid ones (see §1).
- Conditions: without Q-Theta (6:23 p.m., ~10 min 45), then with Q-Theta (6:34 p.m., ~10 min 20) — fixed order.
- Markers: band power (Delta→Gamma), Beta/Alpha ratio (mental calm), Alpha/Theta ratio; session split into thirds for kinetics.
- Non-blinded: meditation is an active state the subject regulates; he knew. Possible expectation bias.

4. Cleaned results (AF7+AF8)

OBSERVATION Band power and ratios on the valid frontals (AF7+AF8), after excluding the defective sensors.

Measure (AF7+AF8)	Without Q-Theta	With Q-Theta	Δ
Delta	2.582	2.327	-10%
Theta	1.085	1.073	-1%
Alpha	1.387	1.442	+4%
Beta (fast activity)	0.971	0.785	-19%
Gamma (fast activity)	0.524	0.431	-18%
Beta/Alpha ratio (calm)	0.701	0.544	-22%
Alpha/Theta ratio	1.278	1.344	+5%

After cleaning, the magnitudes are physiologically plausible. Fast activity — Beta and Gamma, associated with active thought and vigilance — is lower with Q-Theta (-19% and -18%), and the Beta/Alpha ratio, a common index of relaxed mental calm, drops by 22%. That is the expected direction of a meditative deepening.

5. The decisive reading — faster entry, not a lower floor

Splitting the session into thirds reveals the essential (Beta/Alpha ratio, lower = calmer):

Mental calm (Beta/Alpha)	Session start	Session end
Without Q-Theta	0.89	0.55
With Q-Theta	0.56	0.55

Without Q-Theta, the subject starts agitated (Beta/Alpha 0.89) and takes several minutes to settle. With Q-Theta, he is already calm from the start (0.56) and stays so. Above all: both sessions end at the same level (0.55).

The difference in averages therefore does not reflect a deeper calm, but a faster entry into the state. It is a more precise angle — and, if confirmed, more useful: not meditating longer, but no longer losing the first minutes fighting one's own mind.

HYPOTHESIS Why, plausibly: if Q-Theta's slow signature (a register close to Schumann) helps the nervous system switch earlier toward the settled state, this is exactly the profile expected — an earlier calm, not a deeper one. A hypothesis, not a carved truth.

6. Two readings, both honest

Favorable to Q-Theta. It would help enter meditation faster — a shortcut to the calm state, without having to “come down” over several minutes.

Skeptical. The with-Q-Theta session was the second (6:34 p.m., after 6:23 p.m.). The subject may already have been relaxed by the first: order is confounded with the circuit's effect.

Both readings hold. The signal is real and coherent, but not conclusive as is: $n = 1$, fixed order, non-blinded, two electrodes.

7. Limitations

- Sensors: only 2 valid frontal electrodes of 4; poor contact quality (never perfect, ~10% of raw signal saturated).
- $n = 1$, only two sessions, no repetition.
- Fixed order (without → with): the effect of the 2nd session (warm-up, residual relaxation) is confounded with the circuit's effect.
- Non-blinded: meditation is a voluntary state; possible expectation bias.
- No usable temporal sensors (TP9/TP10): partial (frontal) cortical view.

8. The protocol that would settle it

The protocol that would settle it:

- Check the headset BEFORE each session (perfect contact on the 4 electrodes; rerun if a sensor is frozen).
- Alternate the order (A-B-B-A) over several sessions to break the order confound.
- Blind: an identical sham circuit, placed by a third party, subject uninformed.
- Pre-registered primary criterion: time to reach a Beta/Alpha threshold (entry speed into the state), + floor level.
- Cohort $n \geq 10$, sessions ≥ 10 min, matched time-of-day conditions.

9. Conclusion

Two meditations, one headset, and data we first had to clean before daring to discuss it. Once the defective sensors are excluded, the frontal signal is clear and coherent: with Q-Theta, lower fast activity and more marked mental calm. But the real information is in the kinetics: the subject enters the state faster, without going lower — both sessions end at the same level. The right angle is therefore “faster entry,” not “deeper meditation.” And it remains confounded by the fixed order: the with-Q-Theta session was the second. A preliminary signal, to be confirmed by an alternated,

blinded protocol across several subjects. Framing: an exploratory pilot study, to be confirmed, with no medical claim.

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Source: Muse EEG + Mind Monitor, recomputed on the valid frontals AF7+AF8 after excluding the defective TP9/TP10 sensors. Two within-subject sessions, fixed order. Unaudited internal data. Not a medical claim.