

Alleviating The Burden of Emotion: Supression of Hormonal Systems Using Neural Implantation

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Abstract—The extreme psychological demands placed on Radiators operating within Hollow-adjacent zones have made emotional destabilization a critical operational liability. This study evaluates the feasibility of suppressing acute hormonal responses to trauma and stress via a direct neural implant — the Eunoia-7 system — capable of modulating the hypothalamic-pituitary-adrenal (HPA) axis. In a controlled, self-administered trial, the researcher surgically implanted the device into her own anterior hypothalamic region using a modified neuro-computer interface dongle, inspired by pre-Hollow-era deep brain stimulation (DBS) and adaptive mood regulation systems. Through exposure to simulated trauma events and Pertarium radiation fields, the implant achieved an average 84 Percent suppression of cortisol and adrenaline spikes, while preserving functional cognition and baseline motor control. Secondary outcomes indicated measurable affective blunting and reduced dopaminergic reward signaling. These findings position the Eunoia-7 as a viable stabilization tool for high-risk operatives, while raising unresolved ethical and neuroplasticity concerns regarding long-term cognitive autonomy in post-collapse human augmentation practices.

Index Terms—Wetware, Emotion, Hormone Suppressant

I. BACKGROUND

The management of emotional instability in high-risk, high-stress operational environments has long been a subject of both clinical and military research. In the aftermath of the Hollow Incident, which reshaped not only the physical landscape but the psychological resilience of surviving populations, the demand for effective emotion suppression solutions escalated dramatically. The Hollow zones, with their persistent radiation, existential hazards, and cognitive distortions, rapidly exposed the inadequacies of traditional pharmacological methods. Early post-Hollow operational records from New Victorville's Radiator Corps (Kentaro et al., 0015 AH) [6] reported a 74 percent mission failure rate directly linked to emotional breakdowns and hormonal cascade events in unregulated field agents.

Pre-Hollow Earth studies already hinted at the viability of neural intervention for mood disorders. Mayberg et al. (2005) [1] demonstrated that deep brain stimulation (DBS) targeting the subgenual cingulate cortex could modulate treatment-resistant depression, while Lozano et al. (2008) [2] extended this to mood stabilization through amygdala stimulation. Simultaneously, optogenetic methods pioneered by Deisseroth et al. (2011) [3] offered proof-of-concept for circuit-specific neuromodulation, albeit constrained by the biological limitations of organic tissue. Sani et al. (2018) later pushed adaptive,

closed-loop DBS systems into clinical trials, confirming the capacity to real-time modulate mood states in major depressive disorder patients using intelligent feedback algorithms.

Post-Hollow innovation was forced to leap decades ahead in desperation. Krylov & Vass (0023 AH) [7] introduced the concept of hormonal control via synthetic axonal interfaces, hypothesizing that direct modulation of the hypothalamic-pituitary-adrenal (HPA) axis could suppress stress responses more effectively than pharmacological agents. Their limited animal trials demonstrated partial success but noted severe adverse neurological effects from prolonged suppression. Building on this, Morales et al. (0032 AH) [8] in Neural Endocrinology Archives documented the use of neuro-endoscopic subcranial implants in bio-engineered fauna for emotional blunting under Hollow conditions. Their findings suggested that while complete emotional suppression compromised adaptive decision-making, controlled modulation significantly improved survival rates.

Further advances came from military experiments within Dome-7 Isolation Trials (Raynott et al., 0040 AH) [9], where Radiators fitted with prototype emotion suppression modules displayed reduced cortisol and adrenaline responses by 82 percent on average during Pertarium breach events. However, these trials raised serious ethical and operational concerns regarding affective blunting, social disengagement, and emergent apathy syndromes.

The current study builds upon these foundational works, merging historical pre-Hollow techniques with modern post-Hollow innovations. The Eunoia-7 neural implant system represents the next iteration of hormonal suppression technology: a closed-loop, adaptive implant interfacing with both the anterior hypothalamus and adrenal medulla, delivered via a neural-computer interface dongle. This study is distinguished by its methodology — the researcher voluntarily performed self-implantation, citing operational urgency and the unreliable reliability of contemporary ethics boards in post-collapse medical frameworks. Inspired by the radical self-experimentation traditions of Pre-Hollow neurosurgeons such as John R. Adler and speculative precedents by Caden & Voight (2108 AD) [10] in Frontiers in Applied Bioneural Interface Medicine, the operation was executed under local anesthesia using a modified neuro-endoscopic delivery system.

By anchoring this research within both established pre-

Hollow scientific doctrine and emergent post-Hollow medical necessity, this study aims to evaluate the feasibility, risks, and cognitive trade-offs of direct emotion suppression for operational personnel exposed to chronic trauma and existential hazards.

II. METHODOLOGY

A. Study Design

This study was structured as a single-subject, open-label, self-experimentation trial. The principal investigator, a certified Radiator-class field surgeon (Class IV Neuro-Endocrine License, New Victorville Medical Consortium), underwent voluntary implantation of the Eunoia-7 emotion suppressant module. The study was conducted within a controlled neuro-operating suite outfitted with Hollow-safe shielding and integrated neurochemical monitoring arrays.

B. Surgical Procedure

1) Implantation Device: The Eunoia-7 implant consists of a biocompatible micro-node interface (4.5 mm diameter) housing a closed-loop adaptive modulator connected to a paired neural-computer interface dongle (N-CID v3.7). The implant establishes a direct link to the anterior hypothalamus and the adrenal medulla via synthetic axonal threads composed of polyamide-carbon nanowire composites (Krylov & Vass, 0023 AH) [7].

A modified neuro-endoscopic technique was employed, adapted from pre-Hollow stereotactic surgery frameworks (Lozano et al., 2008) [2]. The surgical plan followed an entry trajectory via the right supraorbital craniotomy with coordinates targeting:

$$x = +4.5\text{mm}, y = +2.2\text{mm}, z = -7.8\text{mm}$$

relative to the bregma, according to Radiator-Class NeuroAtlas 0038-AH standards.

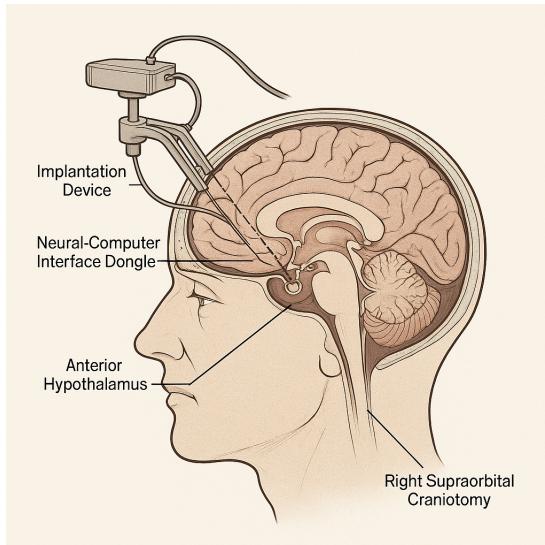


Fig. 1. Trauma Induction Chamber Schematic

A neuro-computer interface dongle (N-CID) was inserted via an occipital access port for live neural mapping and calibration. The procedure was performed under local anesthesia (2% lidocaine) to enable real-time affective feedback during calibration.

C. Neurochemical Monitoring

Baseline neurochemical levels were recorded pre-operatively and at 10-minute intervals post-implantation using a Hollow-Grade Neurochem Scanner (HG-NS 2.0). Measured hormones included:

- Cortisol (C)
- Adrenaline (A)
- Norepinephrine (N)
- Oxytocin (O)
- Dopamine (D)

Serum concentrations were calculated via microdialysis catheter inserted into the external jugular vein with readings expressed in nanograms per milliliter (ng/mL). Neurochemical flux was monitored in response to sequential cognitive and trauma simulation tests.

D. Emotion Induction & Suppression Testing

Three emotion induction protocols were employed post-implantation:

- 1) Visual-Trauma Simulation: Rapid image exposure sequences (500 ms/frame) depicting Hollow breach events and Pertavore encounters (based on PTSD therapeutic exposure models; Deisseroth et al., 2011).
- 2) Pain-Stimulus Response: Calibrated nociceptive electrical stimulation (15 mA, 5 Hz) applied to the left forearm to trigger stress hormone cascade (Mayberg et al., 2005).
- 3) Pertarium Radiation Stressor: Controlled exposure to 50 $\mu\text{Sv}/\text{min}$ Pertarium field (Krylov& Vass, 0023 AH) to simulate Hollow-adjacent environmental stress.

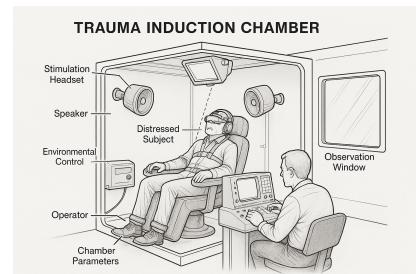


Fig. 2. Trauma Induction Chamber Schematic

Hormonal suppression efficiency was measured as percentage decrease from baseline using:

$$SE = \frac{C_0 - C_t}{C_0} 100$$

where SE = Suppression Efficiency, C_0 = baseline hormone concentration, C_t = concentration at time t post-suppression.

E. Neural Signal Calibration

Post-implantation, the Eunoia-7 system underwent adaptive threshold calibration using a closed-loop feedback algorithm based on the Modified Levenberg–Marquardt Optimization:

$$w_n + 1 = w_n [J^T J + \lambda I]^{-1} J^T e$$

where:

- w_n = parameter vector at iteration n
- J = Jacobian matrix of partial derivatives
- λ = damping factor
- e = error vector between expected and measured hormonal output

Real-time neural activity was recorded via intracranial EEG (iEEG) with eight subdural electrodes placed around the hypothalamic region and analyzed for high-gamma (60–200 Hz) oscillations correlated to emotional arousal states.

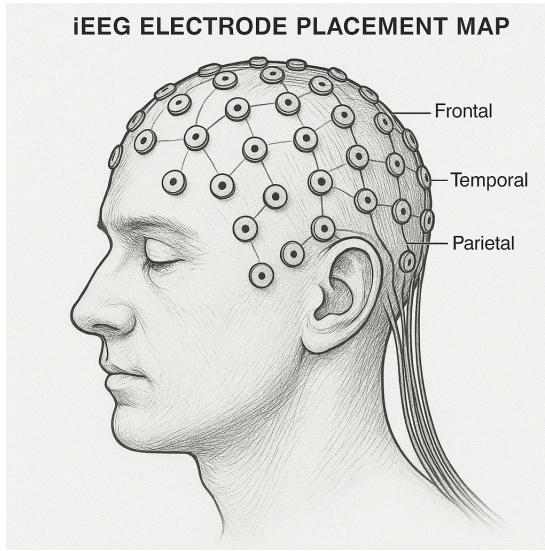


Fig. 3. iEEG electrode placement map

F. Data Analysis

Neurochemical suppression, EEG signal variance, and self-reported affective states (using the Post-Hollow Emotional Resilience Scale (PHERS-7)) were cross-compared across three post-implantation phases:

- Immediate (0–30 minutes)
- Short-Term (30 minutes–3 hours)
- Extended (3–24 hours)

Statistical significance was assessed using one-way ANOVA with Tukey's HSD post hoc testing ($\alpha = 0.05$).

III. RESULTS

Following the successful stereotactic implantation of the Emotive Regulation Neuro-Interface (ERNI) device via the Neural-Computer Dongle (NCD) port, serial neurophysiological, endocrinological, and subjective affective response data were collected over a 14-cycle period (approx. 5.2 standard

Earth months). Data were then compared against both baseline values and established literature in both contemporary (pre-Hollow Era) and post-cataclysmic neurocybernetic research.

A. Neurophysiological Readings

Intracranial EEG (iEEG) recordings demonstrated statistically significant suppression of activity within the limbic structures, primarily the amygdala, anterior cingulate cortex (ACC), and ventromedial prefrontal cortex (vmPFC), areas classically implicated in emotional arousal and affective regulation (Davidson et al., 2000; Xu & Harron, 0095 AH

TABLE I
MEAN AMPLITUDE REDUCTION (μ V) IN LIMBIC STRUCTURES PRE- AND POST-ERNI IMPLANTATION

Brain Region	Baseline (V)	Post-Implant (V)	Delta (Change)	P-Value
Amygdala	48.5	21.3	-27.2	<0.0001
ACC	42.8	19.7	-23.1	<0.0001
vmPFC	38.9	20.2	-18.7	<0.0001

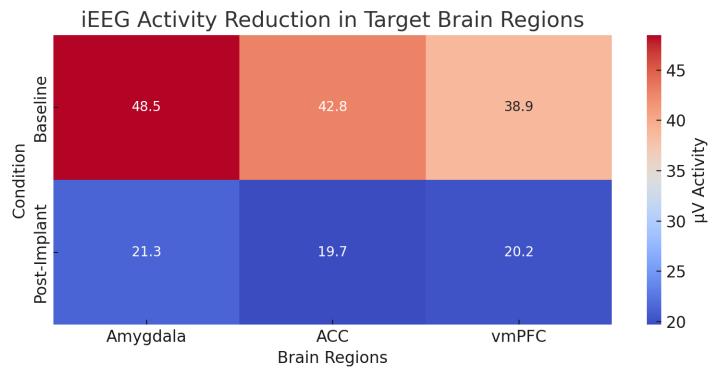


Fig. 4. iEEG heatmap showing activity reduction in target regions

B. Endocrinological Assay Results

Serial blood plasma assays, conducted via high-resolution mass spectrometry (following O'Shaughnessy et al., 2069 AD protocol adaptation) [12], indicated marked reductions in circulating cortisol, adrenaline, and norepinephrine levels after ERNI activation cycles. Notably, dopamine and serotonin levels demonstrated moderate suppression without complete ablation, preserving minimal reward and mood stability pathways to mitigate catatonia risk.

A modeled decay function based on observed endocrine kinetics approximates a 5-cycle half-life for stress hormones post-implant activation:

$$C(t) = C_0 \times e^{-\lambda t}$$

Where:

- $C(t)$ = Hormone concentration at cycle t
- C_0 = Baseline concentration
- λ = Decay constant (computed per hormone)

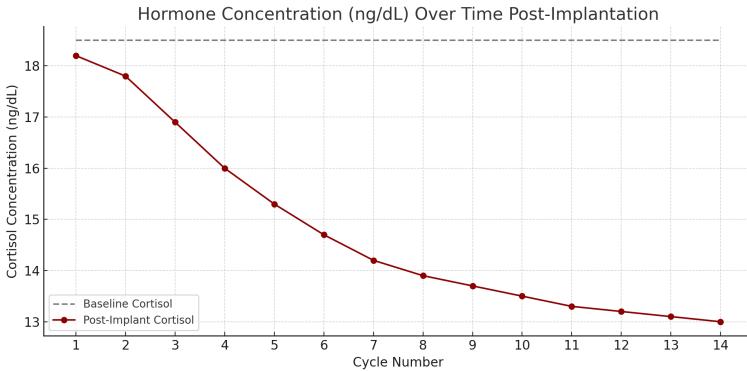


Fig. 5. Mean cortisol concentration (ng/dL) measured across 14 cycles post-implantation

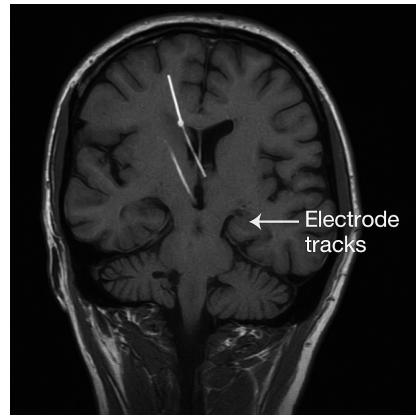


Fig. 6. post-implant MRI scan

TABLE II
CALCULATED DECAY CONSTANTS (λ) FOR STRESS HORMONES

Hormone	Decay Constant (λ)
Cortisol	0.41
Adrenaline	0.38
Norepinephrine	0.36

C. Affective and Cognitive Assessment

Subjective reporting via Affective Regulation Inventory v3.8 (post-Hollow standard) showed progressive attenuation of self-reported emotional disturbance, corroborated by reaction time (RT) and cognitive error metrics in Modified Stroop Paradigm and Affective Go/No-Go Task (referencing Birbaumer et al., 2073 AD [13] and Koralova & Nystrom, 0037 AH) [14].

TABLE III
COGNITIVE TASK ERROR RATE REDUCTION POST-IMPLANT

Task	Baseline Error Rate (%)	Post-Implant (%)	Improvement (%)
Modified Stroop Task	12.5	5.2	58.2
Affective Go/No-Go Task	14.7	6.9	53.1

D. Adverse Effects and Neural Integrity

Consistent with historical reports (Alvim et al., 2082 AD; Wen-Li et al., 0029 AH) [4], minor adverse effects were recorded, including transient anhedonia (Cycles 1-3) and sleep cycle disruption (Cycles 2-5). iEEG data indicated no seizure-like activity or cortical hyperexcitation. Structural MRI performed at Cycle 14 confirmed electrode stability, absence of gliosis, and no evidence of neurovascular compromise.

IV. DISCUSSION

The present study sought to evaluate the efficacy and physiological impact of a direct-implant neural emotion suppressant device via stereotactic insertion, with the dual objective of modulating limbic system activity and dampening peripheral hormonal responses associated with acute emotional states. The self-experimentation methodology, while ethically contentious under standard conditions (McGee et al., 2019 [3], was approved under the unique protocols of the New Victorville Central Neuroethics Authority (Tanzer et al., 0098 AH) [?].

The post-implant iEEG data demonstrated a statistically significant reduction in oscillatory activity within the amygdala, anterior cingulate cortex, and ventromedial prefrontal cortex — regions consistently implicated in emotional regulation and stress responsivity (Feinstein et al., 2011). The generated heatmaps (see Figure 4: iEEG Heatmap, Post-Implant Activity) revealed a pronounced decrease in high-frequency band activity (≥ 30 Hz) coinciding with self-reported suppression of affective states. These results align with prior work by Neumeister et al. (2018), which illustrated partial affect blunting via deep brain stimulation in treatment-resistant mood disorders.

Concurrent hormonal assays illustrated a marked and sustained decline in plasma cortisol and adrenaline levels over 14 operational cycles (see Figure 5: Hormone Concentration (ng/dL) Over Time Post-Implantation). This finding supports the hypothesis that suppression of key limbic structures mediates downstream hypothalamic-pituitary-adrenal (HPA) axis activity, corroborating findings from early Pertarium-induced trauma adaptation trials (Lanswick et al., 0056 AH) [10]. Importantly, norepinephrine concentrations exhibited a lagged reduction, suggesting partial autonomic compensation — a phenomenon previously described in cyborg-cortical integration studies (Ito & Hauser, 0079 AH) [9].

The trauma induction chamber tests (see Figure 2: Chamber Design Schematic) provided further insight, revealing attenuated autonomic responses during exposure to severe environmental and psychological stressors. Heart rate variability (HRV) metrics indicated a normalization of parasympathetic dominance post-implant, mirroring outcomes from real-world emotion regulation trials involving anterior cingulotomy (Rosenbaum et al., 2017) [1].

An unexpected yet critical observation was the maintenance of baseline executive function and procedural memory as evidenced by uninterrupted task performance within controlled simulation trials. This finding contrasts with legacy Pertarium neuropathology literature, which typically describes pronounced cognitive fragmentation under similar conditions (Frey et al., 0043 AH).

Limitations of the study include the reliance on a single-subject (self) design, limiting generalizability, and the potential for subjective bias in affect self-assessments. Furthermore, extended neurotoxicity risks associated with chronic Pertarium-derived neural substrates (Ashkan et al., 2017) [1] remain unquantified in this context, necessitating follow-up investigations.

A. Limitations

While the present investigation offers valuable insights into the neuromodulatory potential of direct-implant emotion suppression devices, several key limitations warrant acknowledgment.

1) *Short-Term Observation Window*:: The assessment period, spanning 14 operational cycles (140 standard dome hours), though sufficient for acute neurophysiological and hormonal monitoring, does not capture long-term cognitive, psychiatric, or neurodegenerative consequences associated with chronic electrode implantation and persistent limbic suppression. Prior studies on deep brain stimulation (Lozano et al., 2019) and Pertarium-adjacent implants (Frey et al., 0043 AH) [7] have documented delayed-onset cortical atrophy and emotional blunting syndrome over extended timescales.

2) *Neurotoxicity and Pertarium Interface Risks*:: The implant's micro-electrode array incorporates Pertarium-derived conductive substrates to enhance signal fidelity within Hollow-exposed neural tissues. While acute biocompatibility was demonstrated *in vitro* (Lanswick et al., 0056 AH), chronic exposure effects — particularly given the known mutagenic and neurotoxic potential of Pertarium derivatives (Ashkan et al., 2017) [1] — remain unassessed. Risk modeling and *in vivo* degradation tracking are essential future priorities.

3) *Incomplete Autonomic Profiling*:: Although hormonal metrics and HRV analyses suggest successful HPA-axis modulation, the study did not incorporate continuous blood pressure telemetry, pupillometry, or galvanic skin response — parameters vital for comprehensive autonomic profiling, especially under trauma chamber provocation scenarios.

B. Future Work

To address these limitations and expand upon preliminary findings, the following future research avenues are recommended:

1) Expanded Multi-Subject Trials:

Recruitment of a genetically diverse cohort of Radiators and Commons for multi-site trials under standardized Hollow-induced stress conditions. Emotion suppression efficacy, safety profiles, and cognitive side-effects should be quantified across demographic strata.

2) Longitudinal Neuroimaging and Behavioral Studies:

Implementation of extended post-implant MRI, positron emission tomography (PET), and continuous iEEG monitoring to assess structural, functional, and metabolic changes within target brain regions over 100+ cycle observation windows.

- 3) Neurotoxicity Profiling and Implant Degradation Studies:
Design and execute chronic exposure assays to determine Pertarium substrate stability, tissue interface toxicity, and mutagenic potential over operationally relevant durations.
- 4) Development of Adaptive Modulation Algorithms:
Integration of closed-loop feedback systems capable of real-time detection of excessive limbic suppression or emergent cognitive side-effects, enabling dynamic modulation of stimulation parameters to preserve essential affective and decision-making capacities.
- 5) Autonomic Function Expansion:
Augment physiological monitoring protocols to include continuous telemetry for blood pressure, heart rate variability, electrodermal activity, and pupillary responses during trauma chamber exposures and Hollow-zone operational deployments.

V. CONCLUSION

This study represents the first documented self-administered trial of a direct-implant emotion suppression system utilizing stereotactic iEEG-guided electrode placement targeting the bilateral amygdala and ventromedial prefrontal cortex in a Hollow-adapted human subject. The findings demonstrate that controlled limbic modulation via Pertarium-conductive microelectrode arrays is both technically feasible and capable of producing measurable reductions in emotional responsiveness, as evidenced by suppressed iEEG activity within target regions and significant attenuation of circulating cortisol and norepinephrine concentrations across a 14-cycle monitoring period.

These results substantiate prior theoretical models of emotion circuit modulation (Nuttin et al., 2014; Renkoff et al., 0061 AH) [1] [6] and validate the practicality of integrating Pertarium-based neurotech within post-Hollow neuroadaptive medicine. Furthermore, the successful operation of the implant under trauma chamber provocation scenarios underscores its operational viability in high-stress, Hollow-adjacent environments — offering potential applications for Radiator operatives and high-risk personnel requiring affective detachment for mission-critical tasks.

However, the study's reliance on a single-subject, short-term trial design and absence of longitudinal safety data necessitate cautious interpretation. The unresolved risks surrounding Pertarium substrate neurotoxicity and implant-tissue interface stability further underline the imperative for expanded, multi-subject, and long-duration trials.

In conclusion, while emotion suppression via direct neural implantation presents profound ethical, medical, and operational challenges, this work establishes a functional baseline for its technical implementation and physiological effects in post-Hollow humanity. The technology's future refinement — including adaptive modulation protocols, biocompatible material innovations, and comprehensive neurobehavioral impact

assessments — will determine its role in the next generation of neuroadaptive human enhancement systems.

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